Addendum
Pacific Business Center Project
City of Manteca, San Joaquin County, California

APPENDICES

Prepared for:

City of Manteca
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November 28, 2012

TABLE OF CONTENTS

Appendix A: Assieh Industrial Development Project Draft Environmental Impact Report

A-1: Draft Environmental Impact Report
A-2: Draft EIR Appendices

Appendix B: Assieh Industrial Development Project Final Environmental Impact Report

B-1: Final Environmental Impact Report (Response to Comments)
B-2: Mitigation Monitoring and Reporting Plan
B-3: City of Manteca Planning Commission Resolution No. 1097

Appendix A:
Assieh Industrial Development Project
Draft Environmental Impact Report

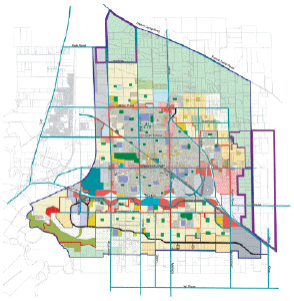
A-1: Draft Environmental Impact Report

Draft
Environmental Impact Report
for the
City of Manteca
Assieh Industrial Development Project

State Clearinghouse No. 2003052069

June 2004

Prepared for:



City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
Contact: Mr. Benjamin Cantu, Advanced Planning Manager
209.239.8424

Prepared by:

Michael Brandman Associates
2000 Crow Canyon Place, Suite 415
San Ramon, CA 94583
Contact: Jason M. Brandman, Regional Manager
925.830.2733

PUBLIC NOTICE OF AVAILABILITY (NOA)

Environmental Document Transmittal Letter

To: (See Attached List)

From: City of Manteca
Community Development Department
1001 W. Center Street
Manteca, California 95337
Telephone: (209) 239-8427
Fax: (209-) 825-2349

Subject: **Public Review of the Draft Environmental Impact Report for the Assieh Industrial Development Project**

This Public Notice of Availability (NOA) accompanies the above-named environmental document. A copy of the environmental document, with applicable attachments, is being transmitted to each "Responsible", "Trustee", and other public agency included on the attached list, as applicable. Additionally, the environmental document will be delivered to the State Clearinghouse, from where State agencies will obtain the environmental document, with attachments, for review.

The remaining agencies, organizations and individuals on the attached list are receiving only this transmittal letter (NOA). Public agencies may obtain a free copy of the above-names environmental document at the above-noted Lead Agency address. Private individuals, organizations, and corporations may purchase a copy of the environmental document for a fee of $15.00. If mailing is requested include an additional $5.00 for postage and handling. Checks should be made payable to the City of Manteca and any written orders must identify the project title and documents, as noted above.

Any written comments regarding the above-named environmental document must be received at the Lead Agency address no later than July 17, 2004 by 5:00 p.m. If no comments are received by the date indicated, it will be assumed that the document is acceptable. Further information may be obtained by contacting Benjamin Cantu, Advance Planning Manager, Community Development Department, at (209) 239-8424 or at *bcantu@ci.manteca.ca.us*

KYLE KOLLAR, DIRECTOR
COMMUNITY DEVELOPMENT DEPARTMENT

By _____ Date: June 3, 2004
Benjamin J. Cantu, Jr.

Notice of Completion

State of California
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Assieh Industrial Development Project (AIDP)

Project Title

The project is located along the northern side of Louise Avenue approximately one-half mile west of Airport Way in western Manteca, near the City of Manteca's border with the City of Lathrop

Project Location –Specific

Manteca	San Joaquin County
Project Location – City	**Project Location – County**

The AIDP entails the development of an 80-acre Industrial Park, consisting of six industrial warehouse structures, to be constructed in two phases. The first phase will result in the construction of approximately 521,730 square feet of warehouse structures and associated ancillary features and the second phase will result in the development of approximately 882,950 square feet of warehouse structures and associated ancillary features. In all, the AIDP will result in approximately 1,400,000 square feet of development. Project improvements will include paved surface area, drive and access ways for 124 trailer truck parking spaces, 942 standard automobile parking spaces, 420 compact automobile parking spaces, and 38 accessible parking spaces. Ancillary features include three retention ponds and trash enclosures. Additionally, at least five percent of the project site will be landscaped and an earthen berm is to be constructed along Louise Avenue. As proposed, the project will have a singular vehicular access at Louise Avenue.

Currently, the AIDP is located within the Secondary Urban Services Boundary. Based on development timing, it may be necessary for the AIDP to initiate an amendment to the Public Facilities Implementation Plan to include their property.

Description of Nature, Purpose, and Beneficiaries of Project

City of Manteca	Community Development Department
Lead Agency	**Division**

1001 West Center Street, Manteca, CA 95337

Address Where Copy of EIR is Available

June 3, 2004 through July 17, 2004

Review Period

Benjamin Cantu, Advanced Planning Manager	209.239.8424
Contact Person:	**Area Code/Telephone/Extension**

Notice of Completion and Environmental Document Transmittal Form

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814
916/445-0613

See NOTE below

SCH # 2003052069

1. Project Title

2. Lead Agency: City of Manteca Community Development Department
3. Contact Person: Benjamin Cantu, Advanced Planning Manager
3a. Street Address: 100 1 West Center Street
3b. City: Manteca
3c. County: San Joaquin
3d. Zip: 95337
3e. Phone: 209.239. 8424

Project Location: The project is located along the northern side of Louise Avenue approximately one-half mile west of Airport Way in western Manteca, near the City of Manteca's border with the City of Lathrop.

4. County: San Joaquin
4a. City/Community: Manteca
4b. Assessor's Parcel No.: NA
4c. Section: NA Twp.: NA Range: NA
5a. Cross Streets: Louise Avenue and Airport Way
5b. For Rural, Nearest Community: ----
6. Within 2 miles:
a. State Hwy#: I-5, SR-120
b. Airports: ----
c. Railways: Union Pacific Railroad
d. Waterways: ----

7. Document Type

CEQA: 01. ☐ NOP; 03. ☐ Neg Dec; 04. ☒ Draft EIR; 05. ☐ Supplement/Subsequent EIR; 06. ☐ NOE; 07. ☒ NOC; 08. ☐ NOD
NEPA: 09. ☐ NOI; 11. ☐ Draft EIS; 12. ☐ EA
OTHER: 13. ☐ Joint Document; 15. ☐ Other_____

8. Local Action Type

01. ☐ General Plan Update
02. ☐ New Element
03. ☐ General Plan Amendment
04. ☐ Master Plan
05. ☐ Annexation
06. ☐ Specific Plan
07. ☐ Community Plan
08. ☐ Redevelopment
09. ☐ Rezone
10. ☐ Land Division (Sub-division, Parcel Map, Tract Map, etc.)
11. ☐ Use Permit
12. ☐ Waste Mgmt Plan
13. ☐ Cancel Ag Preserve
14. ☐ Other_____

9. Development Type

01. ☐ Residential:	*Units*		*Acres*				07. ☐ Mining:	*Mineral*	
02. ☐ Office:	*Sq.ft.*		*Acres*		*Employees*		08. ☐ Power:	*Type*	*Watts*
03. ☐ Shopping/Commercial:	*Sq.ft.*		*Acres*		*Employees*		09. ☐ Waste Treatment:	*Type*	
04. ☒ Industrial:	*Sq.ft.*	1,400,000	*Acres*	80	*Employees*	NA	10. ☐ OCS Related		
05. ☐ Water Facilities:	*MGD*						11. ☒ Other:	1,524 parking spaces	
06. ☐ Transportation:	*Type*								

10. Total Acres: 80 Acres
11. Total Jobs Created: ---

12. Project Issues Discussed In Document

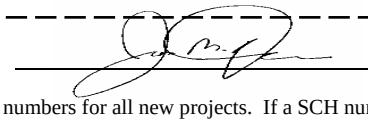
01. ☒ Aesthetic/Visual
02. ☐ Agricultural Land
03. ☒ Air Quality
04. ☐ Archaeological/Historical
05. ☐ Coastal Zone
06. ☐ Economic
07. ☒ Fire Hazard
08. ☒ Flooding/Drainage
09. ☐ Geologic/Seismic
10. ☐ Jobs/Housing Balance
11. ☐ Minerals
12. ☒ Noise
13. ☒ Public Services
14. ☐ Schools
15. ☐ Septic Systems
16. ☒ Sewer Capacity
17. ☐ Social
18. ☐ Soil Erosion
19. ☒ Solid Waste
20. ☐ Toxic/Hazardous
21. ☒ Traffic/Circulation
22. ☐ Vegetation
23. ☒ Water Quality
24. ☒ Water Supply
25. ☐ Wetland/Riparian
26. ☐ Wildlife
27. ☒ Growth Inducing
28. ☒ Incompatible Land Use
29. ☒ Cumulative Effects
30. ☐ Other

13. Funding (approx.) Federal $: ---- **State $**: ---- **Total$**: ----

14. Present Land Use and Zoning Heavy Industrial

15. Project Description The AIDP entails the development of an 80-acre Industrial Park, consisting of six industrial warehouse structures, to be constructed in two phases. The first phase will result in the construction of approximately 521,730 square feet of warehouse structures and associated ancillary features and the second phase will result in the development of approximately 882,950 square feet of warehouse structures and associated ancillary features. In all, the AIDP will result in approximately 1,400,000 square feet of development. Project improvements will include paved surface area, drive and access ways for 124 trailer truck parking spaces, 942 standard automobile parking spaces, 420 compact automobile parking spaces, and 38 accessible parking spaces. Ancillary features include three retention ponds and trash enclosures. Additionally, at least five percent of the project site will be landscaped and an earthen berm is to be constructed along Louise Avenue. As proposed, the project will have a singular vehicular access at Louise Avenue.

Currently, the AIDP is located within the Secondary Urban Services Boundary. Based on development timing, it may be necessary for the AIDP to initiate an amendment to the Public Facilities Implementation Plan to include their property.

16. Signature of Lead Agency Representative  **Date:** June 3, 2004

NOTE: Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. from a Notice of Preparation or previous draft document) please fill it in.

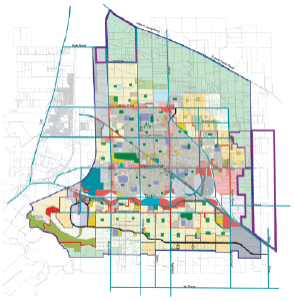
Form Revised 4/86--Replaces CA189 *Mark Distribution on Reverse*

Draft
Environmental Impact Report
for the
City of Manteca
Assieh Industrial Development Project

State Clearinghouse No. 2003052069

June 2004

Prepared for:



City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
Contact: Mr. Benjamin Cantu, Advanced Planning Manager
209.239.8424

Prepared by:

Michael Brandman Associates
2000 Crow Canyon Place, Suite 415
San Ramon, CA 94583
Contact: Jason M. Brandman, Regional Manager
925.830.2733

TABLE OF CONTENTS

Section 1: Introduction 1-1
1.1 - Authority 1-1
1.2 - Determination of the Lead Agency and Responsible Agency 1-1
1.3 - Purpose of the EIR 1-2
1.4 - Scope of the EIR 1-2
1.5 - Scoping Process 1-2
1.6 - EIR Focus and Effects Found Not To Be Significant 1-2
1.7 - Incorporation by Reference 1-3
1.8 - Project Sponsors and Contact Persons 1-3
1.9 - Review of the Draft EIR 1-4

Section 2: Executive Summary 2-1
2.1 - Proposed Project 2-1
2.2 - Areas of Controversy/Issues To Be Resolved 2-1
2.3 - Summary of Alternatives 2-1
2.4 - Mitigation Monitoring Program 2-2
2.5 - Summary of Environmental Effects and Mitigation Measures 2-2

Section 3: Project Description 3-1
3.1 - Project Location 3-1
3.2 - Site Characteristics 3-1
3.3 - Project Objectives 3-1
3.4 - Intended Uses of the Draft EIR, Responsible Agencies, and Approvals 3-1
3.5 - Responsible and Trustee Agencies 3-2

Section 4: Environmental Setting, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation 4-1
4.1 - Land Use and Planning 4.1-1
4.2 - Transportation and Circulation 4.2-1
4.3 - Air Quality 4.3-1
4.4 - Noise 4.4-1
4.5 - Hydrology and Water Quality 4.5-1
4.6 - Public Services, Utilities, and Energy Consumption 4.6-1

Section 5: Other CEQA Considerations 5-1
5.1 - Significant Unavoidable Impacts 5-1
5.2 - Significant Irreversible Changes 5-1
5.3 - Growth Inducing Impacts 5-1
5.4 - Cumulative Impacts 5-2

Section 6: Alternatives to the Proposed Project 6-1
6.1 - No Project/No Development Alternative 6-1
6.2 - Reduced Density Alternative 6-3
6.3 - Environmentally Superior Alternative 6-4

Section 7: Organizations and Persons Consulted 7-1
7.1 - Public Agencies 7-1
7.2 - Private Organizations 7-1

Section 8: Report Preparation Personnel 8-1
8.1 - City of Manteca 8-1
8.2 - Michael Brandman Associates 8-1
8.3 - Technical Subconsultants 8-1

Section 9: References 9-1

Appendix A: IS/NOP and Responses

Appendix B: Traffic Impact Analysis

Appendix C: Air Quality Assessment

Appendix D: Noise Assessment

LIST OF TABLES

Table 2-1: Executive Summary 2-3
Table 4.2-1: Existing Level of Service Summary 4.2-11
Table 4.2-2: Villa Ticino West Development Trip Generation 4.2-14
Table 4.2-3: Near-Term Existing Level of Service Summary 4.2-21
Table 4.2-4: Site Trip Generation 4.2-23
Table 4.2-5: Near-Term Existing Plus Project Level of Service Summary 4.2-31
Table 4.3-1: Federal and State Standards for Nonattainment 4.3-3
Table 4.3-2: SJVAPCD Interim Emission Thresholds 4.3-6
Table 4.3-3: Regional and Area Source Emissions 4.3-9
Table 4.3-4: Local Roadway Air Quality Segment Analysis AM Existing with Project 4.3-10
Table 4.3-5: Local Roadway Air Quality Segment Analysis PM Existing with Project 4.3-10
Table 4.4-1: Maximum Allowable Noise Exposure Mobile Noise Sources 4.4-1
Table 4.4-2: Performance Standards for Stationary Noise Sources 4.4-2
Table 4.4-3: Noise Abatement Criteria (Hourly A-Weighted Sound Level) 4.4-3
Table 4.4-4: Noise Impacts for Existing and Existing With Project 4.4-4
Table 4.4-5: Project-Related Noise Impacts 4.4-8
Table 5-1: Cumulative Conditions Level of Service Summary 5-4
Table 5-2: Local Roadway Air Quality Segment Analysis AM Cumulative No-Project 5-13
Table 5-3: Local Roadway Air Quality Segment Analysis PM Cumulative No Project 5-13
Table 5-4: Cumulative Plus Project Local Roadway Air Quality Segment Analysis AM 5-14
Table 5-5: Cumulative Plus Project Local Roadway Air Quality Segment Analysis PM 5-14
Table 5-6: Cumulative Noise Conditions 5-15

LIST OF EXHIBITS

Exhibit 3-1: Regional Location Map 3-3
Exhibit 3-2: Local Vicinity Map 3-5
Exhibit 3-3a: Site Plan 3-7
Exhibit 3-3b: Site Plan 3-9
Exhibit 4.2-1: Project Location and Study Intersections 4.2-5
Exhibit 4.2-2: Existing Lane Geometry and Traffic Control 4.2-7
Exhibit 4.2-3: Existing Turning Movements 4.2-9
Exhibit 4.2-4: Project Location and Study Intersections 4.2-15
Exhibit 4.2-5: Near Term Existing Conditions Lane Geometry and Traffic Control 4.2-17
Exhibit 4.2-6: Near-Term Existing Conditions Traffic Volumes 4.2-19
Exhibit 4.2-7: Project Trip Distribution 4.2-25
Exhibit 4.2-8: Project Generated Traffic Volumes 4.2-27
Exhibit 4.2-9: Near Term Existing Conditions Plus Project Traffic Volumes 4.2-29
Exhibit 4.4-1: Receptor Locations 4.4-5
Exhibit 5-1: Cumulative Lane Geometry and Traffic Control 5-5
Exhibit 5-2: Cumulative Plus Project Traffic Volumes 5-7
Exhibit 5-3: Long-Term Cumulative and Project Traffic Volumes 5-9

SECTION 1: INTRODUCTION

1.1 - Authority

This Draft Environmental Impact Report (DEIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate potential environmental impacts associated with the implementation and development of the Assieh Industrial Development Project (AIDP). The City of Manteca (City) is the lead agency for the preparation of this DEIR. This document is prepared in compliance with CEQA (California Public Resources Code § 21000 et seq.), the CEQA Guidelines (California Code of Regulations, Title 14, § 15000 et seq.) and the rules, regulations, and procedures for implementing CEQA contained in the City of Manteca Municipal Code.

This DEIR is intended to serve as an informational document for public agency decision-makers and the public regarding project objectives and components of the AIDP. The environmental impacts of the AIDP are analyzed in the DEIR to the degree of specificity appropriate to the AIDP § 15146 and § 15180 of the CEQA Guidelines. The DEIR will address potentially significant adverse environmental impacts that may be associated with the planning, construction, or operation of the project, as well as identify appropriate and feasible mitigation measures and alternatives that may be adopted to significantly reduce or avoid these impacts. CEQA requires that a DEIR contain, at a minimum, certain specific elements. These elements include:

- Table of Contents
- Introduction
- Executive Summary
- Project Description
- Environmental Setting, Significant Environmental Impacts, and Mitigation Measures
- Cumulative Impacts
- Significant Unavoidable Adverse Impacts
- Alternatives to the AIDP
- Growth-Inducing Impacts
- Effects Found Not to be Significant
- Areas of Known Controversy

1.2 - Determination of the Lead Agency and Responsible Agency

CEQA Guidelines § 15367 defines the lead agency as ". . . the public agency, which has the principal responsibility for carrying out or approving a project." Criteria considered in identifying the lead agency include whether the agency 1) has the greatest responsibility for supervising or approving the project as a whole; 2) is an agency with the general governmental powers, and 3) will act first on the project in question (refer to CEQA Guidelines § 15051). The lead agency for this DEIR is the City of Manteca. As the lead agency, the City of Manteca has responsibility for review, adoption, and implementation of the project.

Other public agencies may use this DEIR in the decision-making or permit process and consider the information in this DEIR along with other information that may be presented during the CEQA process. Environmental impacts may not always be mitigated to a level considered less than significant; in those cases, impacts are considered significant unavoidable impacts. In accordance with § 15093(b) of the CEQA Guidelines, if a lead agency approves a project that has significant impacts that are not substantially avoided or lessened (e.g., significant unavoidable impacts), the

agency shall state in writing the specific reasons to support its actions based on the Final DEIR or other information in the record. The Statement of Overriding Considerations must be supported by substantial evidence in the record and should be included in the record of project approval. Additionally, the Statement of Overriding Considerations does not substitute for the Findings as required by § 15091 of the CEQA Guidelines.

This DEIR was prepared by a consultant under contract to the City of Manteca. Prior to public review, it was extensively reviewed and evaluated by the City of Manteca. This DEIR reflects the independent judgment and analysis of the City of Manteca as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel are provided in Sections 7 and 8 of this DEIR, respectively.

1.3 - Purpose of the EIR

The AIDP DEIR is considered a project level EIR. The intent of this document is to analyze the environmental effects of the AIDP to the degree of specificity required by § 15161 of the CEQA Guidelines. Hence, it is anticipated that upon certification of this DEIR, no additional environmental review will be required for the completion of the AIDP. This DEIR also considers a series of actions that are needed to achieve the development of the AIDP. Among the actions being requested are the approval of project components and a development agreement to vest development rights. Additional City approvals (e.g. grading permits, building permits, tree removal permits, etc.) may also be needed. The lead agency, as well as other responsible agencies, can approve subsequent actions without additional environmental documentation unless as otherwise required by Public Resources Code § 21166 and CEQA Guidelines § 15162, § 15163, and § 15164.

The actions involved in the implementation of the AIDP are described in Section 3, Project Description, of this DEIR. Other agencies that may have discretionary approval over the project, or components thereof, are also described in Section 3.

1.4 - Scope of the EIR

This DEIR addresses the potential environmental effects of the AIDP. The scope of the DEIR includes the areas of controversy identified by the Initial Study/Notice of Preparation (IS/NOP) issued by the City, comments obtained during a public scoping meeting, as well as issues raised by agencies and the general public in response to the IS/NOP, as described below. The IS/NOP is included in this DEIR in Appendix A.

1.5 - Scoping Process

In compliance with CEQA Guidelines, the City has taken steps to maximize the public's opportunity to participate in the environmental process. An IS/NOP was distributed on May 9, 2003, via certified mail to agencies and other interested parties to solicit comments and inform the public of the AIDP. A public scoping meeting was held on June 9, 2003, to obtain further input from the public on the scope of the environmental document. The IS/NOP, the distribution list for the IS/NOP, and comment letters received during and after the NOP period are attached to this DEIR as Appendix A. Agencies, organizations, and interested parties not previously contacted or who did not respond to the IS/NOP, currently have the opportunity to comment during the 45-day public review period of the DEIR and subsequent pubic hearings on the project and DEIR.

1.6 - EIR Focus and Effects Found Not To Be Significant

Based on comments received on the IS/NOP and information obtained from the public scoping meeting, a determination was made that an EIR is required to address the potentially significant environmental effects of the AIDP. The scope of this DEIR includes issues identified by the City

during the preparation of the IS/NOP for the AIDP, as well as environmental issues raised by agencies and the public in response to the IS/NOP.

Based on the comments received in the public review period of the IS/NOP, the environmental issues, which could result in potentially significant impacts that are addressed in this DEIR, consist of the following:

- Land Use and Planning
- Transportation and Circulation
- Air Quality
- Noise
- Hydrology and Water Quality
- Public Services, Utilities, and Energy Consumption

The environmental issues that are determined not to be significantly affected by the AIDP and therefore, do not require further analysis in this DEIR pursuant to § 15063(c) of the CEQA Guidelines, are as follows:

- Aesthetics
- Agricultural Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Mineral Resources
- Population, Employment, and Housing

1.7 - Incorporation by Reference

This DEIR references several technical studies, analyses, and reports. Section 15150 of the CEQA Guidelines permits documents of lengthy technical detail to be incorporated by reference in an EIR. Specifically, § 15150 states that an EIR may ". . . incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public. . . ." Information from documents incorporated by reference, are briefly summarized in the appropriate sections(s). The relationship between the incorporated part of the referenced document and the EIR is also described within the section(s).

The documents and other sources used in the preparation of this DEIR include a number of environmental planning documents that were prepared for development projects. These documents include, but are not limited to, the *City of Manteca General Plan Update 2023* (June 2003) and the *Manteca General Plan Update 2023 EIR* (June 2003), and the *City of Manteca General Plan 2023 Background Report* (April 2003). These documents are specifically identified in Section 9, References. In accordance with § 15150(b) of the CEQA Guidelines, these documents can be reviewed at the City of Manteca Community Development Department, 1001 West Center Street, Manteca, California.

1.8 - Project Sponsors and Contact Persons

The City of Manteca is the lead agency in the preparation of this DEIR. Michael Brandman Associates (MBA) is the environmental consultant to the City for the project.

Preparers of this DEIR are identified in Section 8 of this document. Key contact persons are as follows:

Lead Agency:	City of Manteca Community Development Department Benjamin Cantu Advanced Planning Manager 1001 West Center Street Manteca, CA 95337 T: 209.239.8424 F: 209.825.2349
Environmental Consultant:	Michael Brandman Associates Jason M. Brandman Regional Manager 2000 Crow Canyon Place, Suite 415 San Ramon, CA 94583-1300 T: 925.830.2733 F: 925.830.2715 E: jbrandman@brandman.com

1.9 - Review of the Draft EIR

This DEIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the DEIR in accordance with Public Resources Code 21092(b)(3). The Notice of Completion of the DEIR has also been distributed as required by CEQA. During the 45-day public review period, the DEIR, including the technical appendices, is available for review at the City of Manteca.

Written comments on the DEIR should be addressed to:

Benjamin Cantu
Advanced Planning Manager
City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
T: 209.239.8424
F: 209.825.2349

Upon completion of the 45-day public review period, written responses to all significant environmental issues raised will be prepared and made available for review at least 10 days prior to the public hearing before the City of Manteca City Council, at which the certification of the final EIR will be considered. The comments and their responses will be included as part of the environmental record for consideration by decision-makers for the project.

SECTION 2:
EXECUTIVE SUMMARY

2.1 - Proposed Project

The proposed project is the Assieh Industrial Development Project (AIDP). As proposed, the project will result in the development of 80 acres of vacant land, located along the north side of Louise Avenue, approximately a half mile west of Airport Way, along the City of Manteca's western boundary with the City of Lathrop.

The project consists of the construction of six industrial warehouse type structures, totaling 1,404,680 square feet of building area. Project improvements will include paved surface areas, drives, and access ways. The project will result in 124 trailer truck parking spaces, 942 standard automobile parking spaces, 38 accessible parking spaces, and 420 compact automobile parking spaces. A minimum of five percent of the lot is to be landscaped. Additionally, the project will include installation of five onsite retention basins.

Vehicular access will be provided via an access point at Louise Avenue, with onsite circulation consisting of a single 52-foot wide shared access way, which will traverse the entire depth of the property. The AIDP is to be completed in two phases.

2.2 - Areas of Controversy/Issues To Be Resolved

The potential areas of controversy and issues to be resolved through the DEIR process are derived from the Initial Study/Notice of Preparation (IS/NOP) and responses thereto (see Appendix A). In summary, the potential areas of controversy are:

- Project implementation will transform the project area from vacant land to active industrial uses. The DEIR will examine the compatibility of AIDP land uses with existing and planned land uses. Additionally, the AIDP will be assessed for project consistency with the goals and policies of the General Plan and other documents guiding land uses within the project area (see Land Use and Planning, Section 4.1).
- The AIDP will generate both automobile and truck traffic. Only one access point is proposed, which may result in traffic congestion (see Transportation and Circulation, Section 4.2).
- The AIDP will have air quality impacts in the short-term during its construction and that of associated infrastructure and impacts in the long-term through introduction of new sources of air emissions, primarily generated by project related traffic (see Air Quality, Section 4.3).
- There are several sensitive receptors located within the project area which may be subject to increases in the ambient noise environment during both the short-term construction phase and the long-term operational phase (see Noise, Section 4.4).
- Project implementation will result in an increase in impervious surfaces within the AIDP. Impervious surfaces may alter drainage patterns and will result in a decrease in groundwater infiltration (see Hydrology and Water Quality, Section 4.5).
- Project implementation will require extension and/or upgrade of public services and utilities to the project site (see Public Services, Utilities, and Energy Consumption, Section 4.6).

2.3 - Summary of Alternatives

In accordance with § 15126.6(d) of the CEQA Guidelines, this DEIR's alternatives to the AIDP include a comparative evaluation of the AIDP with alternatives to the project. Additionally, the

alternatives are discussed in terms of achieving the project objectives. This DEIR includes an evaluation of the following alternatives to the proposed AIDP.

- No Project/No Development Alternative
- Reduced Density Alternative

Section 6 of this DEIR provides descriptions and analysis of each alternative. Of the two alternatives evaluated, an Environmentally Superior Alternative is chosen. The Environmentally Superior Alternative is determined to be the No Project Alternative. However, as discussed in Section 6, the No Project and No Project/No Development Alternative fail to meet any of the AIDP project objectives.

2.4 - Mitigation Monitoring Program

CEQA requires agencies to set up monitoring report programs to ensure compliance with the mitigation measures adopted as conditions of approval in order to mitigate or avoid significant environmental effects the DEIR identifies. A mitigation monitoring program that incorporates the mitigation measures set forth in this DEIR will be adopted when the DEIR is certified.

2.5 - Summary of Environmental Effects and Mitigation Measures

This DEIR's Section 4, Environmental Setting, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation, describes in detail the environmental impacts that would result from the AIDP's implementation. Table 2-1 summarizes the AIDP's impacts and mitigation measures for those impacts. Impacts that are noted in the summary as "significant" after mitigation will require adoption of a Statement of Overriding Considerations, if the project is approved as proposed (CEQA § 15093).

In the Executive Summary table, project impacts are classified as: 1) Less than Significant (adverse effects that are not substantial, according to CEQA, but may include recommended mitigation) or 2) Significant and Unavoidable (substantial adverse changes in the environment that cannot be avoided even with feasible mitigation). Mitigation measures are listed, as applicable, for each impact.

Table 2-1: Executive Summary

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
LAND USE		
Impact 4.1-A: Implementation of the AIDP will not result in incompatibilities with existing or planned onsite or surrounding land uses.	No mitigation measures are required.	Less than Significant
Impact 4.1-B: Implementation of the AIDP is consistent with the relevant Manteca General Plan Update 2023 goals and policies and City of Manteca Zoning Ordinance.	No mitigation measures are required.	Less than Significant
TRANSPORTATION AND CIRCULATION		
Impact 4.2-A: Implementation of the AIDP is consistent with the relevant transportation and circulation goals and policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.2-B: The project will add 632 AM peak hour and 716 PM peak hour vehicle trips to the surrounding roadway network, in addition to traffic generated by near-term development in the AIDP area.	**4.2-B-1:** At the intersection of Airport Way and Lathrop Road, construct a 125-foot eastbound right turn bay to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection. **4.2-B-2:** At the intersection of McKinley Avenue and Louise Avenue, construct a 100-foot westbound and a 100-foot southbound right turn bay to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection. **4.2-B-3:** At the intersection of Louise Avenue and the project driveway, install an 8-phase traffic signal at the intersection to improve the operation to LOS C in the AM and PM. Based on the proportion of AIDP traffic compared with Villa Ticino West project, the AIDP project shall pay 52 percent and the Villa Ticino West project shall pay 48 percent of the total design and construction costs.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact 4.2-C: The AIDP may result in internal circulation impacts.	No mitigation measures are required.	Less than Significant
AIR QUALITY **Impact 4.3-A:** Implementation of the AIDP is consistent with the relevant air quality goals and policies of the Manteca General Plan Update 2023 and the applicable air quality plans.	No mitigation measures are required.	Less than Significant
Impact 4.3-B: Short-term construction will result in generating temporary air quality impacts.	**Manteca General Plan Update 2023 Mitigation Measures** **AQ-I-12:** Construction activity plans shall include and/or provide for a dust management plan to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. • Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction. **AQ-P-7:** New construction will be managed to minimize fugitive dust and construction vehicle emissions. **Project Related Mitigation Measures** **4.3-B-1:** All active portions of the construction site, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used. **4.3-B-2**: All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour. **4.3-B-3:** All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	4.3-B-4: The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass is evident. **4.3-B-5:** Construction site vehicle speeds shall be limited to 15 miles per hour. **4.3-B-6**: If used, petroleum-based dust palliatives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials. **4.3-B-7:** Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping. **4.3-B-8:** All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications. **4.3-B-9:** During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time. **4.3-B-10**: When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines. **4.3-B-11:** Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways.	

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact 4.3-C: Implementation of the AIDP will result in an increase in traffic generation in the project area, which will result in the generation of air pollution emissions during the project's operational phase.	**4.3-C-1:** The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions. **4.3-C-2:** Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits. **4.3-C-3:** Implementation of planned street and highway, transit, and bikeway improvements (as specified in the Transportation Impact Analysis) adjacent to the project site necessary to relieve congestion and reduce idling. **4.3-C-4:** Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all commercial/residential developments. **4.3-C-5:** Use of HVAC equipment with a SEER of 12 or greater. **4.3-C-6:** Provide pedestrian/transit oriented project design. **4.3-C-7:** Commit to on-site improvements; bikeways, transit infrastructure, pedestrian enhancements. **4.3-C-8:** Contribute towards TCM implementation programs.	Less than Significant
NOISE **Impact 4.4-A:** Implementation of the AIDP is not consistent with the relevant noise goal and policies of the Manteca General Plan Update 2023.	There is no feasible mitigation.	Less than Significant
Impact 4.4-B: The AIDP will result in short-term noise impacts during construction-related activities.	**Project Mitigation Measures** **4.4-B-1:** All construction shall comply with standard City conditions regarding allowable times of construction, properly operating mufflers, location of staging areas away from	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	sensitive uses where feasible, notification of nearby residents of pile driving, etc. These include the following: • Construction activities shall be limited 7 AM to 7 PM (Monday through Friday), 9 AM to 5 PM (Saturday), and no construction activities on Sunday or holidays for any construction within 500 feet of existing residences; • All internal combustion engines for construction equipment shall be properly muffled and maintained; • Notification of nearby residents (within 500 feet) when pile driving is expected; • A name, address, and phone number of a contact person that will handle noise complaints, shall be posted at the site; • Installation of portable acoustical barriers around pile driving equipment; and • Unnecessary idling of internal combustion engines shall be prohibited.	
Impact 4.4-C: The AIDP will generate additional daily trips within the project area, which may result in traffic-related noise levels that exceed established standards.	No mitigation measures are required.	Less than Significant
HYDROLOGY AND WATER QUALITY		
Impact 4.5-A: Implementation of the AIDP is consistent with the relevant hydrology and water quality goals and policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.5-B: Implementation of the AIDP is not anticipated to significantly alter sub-regional or local hydrologic conditions.	No mitigation measures are required.	Less than Significant
Impact 4.5-C: The location of the AIDP is not within the boundaries of a 100-year or 500-year flood event.	No mitigation measures are required.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact 4.5-D: Implementation of the AIDP will result in storm water runoff and have the potential to effect water quality.	No mitigation measures are required.	Less than Significant
PUBLIC SERVICES, UTILITIES, AND ENERGY CONSUMPTION		
Fire Services		
Impact 4.6.1-A: Implementation of the AIDP will be consistent with the relevant fire protection policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.6.1-B: The AIDP may potentially impact fire protection services.	**4.6.1-B-1:** The AIDP shall pay a fair share fire facility fee for the construction, staffing, and operation of a new fire station that will service the project site and surrounding area. **4.6.1-B-2:** The AIDP shall provide for water storage per the design criteria dictated by the City of Manteca Public Works Department.	Less than Significant
Police Services		
Impact 4.6.2-A: Implementation of the AIDP will be consistent with relevant police protection policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.6.2-B: The intensification of land uses within the project area will result in an increased demand for police services.	No mitigation measures are required.	Less than Significant
Water Services		
Impact 4.6.3-A: Implementation of the AIDP will be consistent with the relevant water service goal and policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
Impact 4.6.3-B: Implementation of the AIDP project will result in an increase demand for water service and supplies.	**4.6.3-B-1:** The project applicant shall be required to pay a water development fee to assist in the funding of system-wide capacity improvements and offset municipal costs of the expansion of water treatment facilities and delivery systems.	Less than Significant
Solid Waste		
Impact 4.6.4-A: Implementation of the AIDP will be consistent with the relevant solid waste policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.6.4-B: Implementation of the AIDP will result in the generation of solid waste throughout the lifetime of the project.	No mitigation measures are required.	Less than Significant
Wastewater Services		
Impact 4.6.5-A: Implementation of the AIDP will be consistent with the relevant wastewater service policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.6.5-B: The AIDP will result in an increase in the generation of wastewater and will require the extension of wastewater transmission and distribution facilities to service the site.	**4.6.5-B-1:** Prior to the issuance of building permits, the project applicant shall provide verification to the City that there will be adequate wastewater service installed prior to occupancy of the project to serve the AIDP.	Less than Significant
Energy Resources		
Impact 4.6.6-A: Implementation of the AIDP will be consistent with the relevant energy resources goal and policies of the Manteca General Plan Update 2023.	No mitigation measures are required.	Less than Significant
Impact 4.6.6-B: The AIDP will create a demand for additional energy resources and require upgrades and extensions of transmission and distribution systems.	**4.6.6-B-1:** Prior to the approval of development plans, the applicant shall perform an ALTA Land Tile Survey for the purpose of identifying easements that traverse across the project site.	Less than Significant

Environmental Impact	Mitigation Measures	Level of Significance After Mitigation
	4.6.6-B-2: Development plans shall provide for unrestricted utility access and prevent easement encroachments that impair maintenance and operation of PG&E facilities. **4.6.6-B-3:** The project applicant shall be responsible for costs associated with the relocation of any existing PG&E facilities that are relocated to accommodate project development.	
OTHER CEQA CONSIDERATIONS **Cumulative Impact Analysis** Without improvement, the intersection of I-5 SB Ramps / Louise Avenue will operate at LOS F.	**Transportation and Circulation** **5-1:** At the intersection of the I-5 SB Ramps / Louise Avenue, construct a 300 foot southbound right turn lane to the intersection. The ramp approach will require widening at the intersection.	Less than Significant

SECTION 3:
PROJECT DESCRIPTION

3.1 - Project Location

The Assieh Industrial Development Project (AIDP) is located in the City of Manteca (City), San Joaquin County, California (see Exhibit 3-1 and Exhibit 3-2). The project is located along the northern side of Louise Avenue, approximately one-half mile west of Airport Way in western Manteca, near the City of Manteca's border with the City of Lathrop (see Exhibits 3-3a and 3-3b). Surrounding land uses include pasture lands to the north, residentially zoned lands supporting agricultural use to the south, Manteca Unified School District administrative offices and a school farm to the east, and industrially zoned lands supporting agricultural uses to the west. Immediately west of the project site is the French Camp Drain. Union Pacific Railroad lines are located immediately to the north, east, and west of the site.

3.2 - Site Characteristics

The AIDP entails the development of an 80-acre industrial park, consisting of six industrial warehouse structures, to be constructed in two phases. The first phase will result in the construction of approximately 521,730 square feet of warehouse structures and associated ancillary features, and the second phase will result in the development of approximately 882,950 square feet of warehouse structures and associated ancillary features. In all, the AIDP will result in approximately 1,400,000 square feet of development. Project improvements will include paved surface areas, drives, and access ways for 124 trailer truck parking spaces, 942 standard automobile parking spaces, 420 compact automobile parking spaces, and 38 accessible parking spaces. Ancillary features include three retention ponds and trash enclosures. Additionally, at least five percent of the project site will be landscaped and an earthen berm is to be constructed along Louise Avenue. As proposed, the project will have a singular vehicular access at Louise Avenue.

Currently, the AIDP is located within the Secondary Urban Services Boundary. Based on development timing, it may be necessary for the AIDP to initiate an amendment to the Public Facilities Implementation Plan to include their property.

3.3 - Project Objectives

The stated objectives of the AIDP are as follows:

- Provide new employment opportunities for the community and its residences;
- Assist in balancing the disproportionate jobs-to-housing ratio in the community;
- Increase the disproportionate economic revenue base (related to jobs and housing) of the community; and
- Alleviate the number of commuter trips outside of the community.

3.4 - Intended Uses of the Draft EIR, Responsible Agencies, and Approvals

This DEIR is being prepared by the City to assess the potential environmental impacts that may arise in connection with actions related to implementation of the AIDP. The City is the lead agency for the project and has discretionary authority over the project and project approvals. It is the intent of the City to permit all public infrastructure improvements and all future development within the parameters established and analyzed in sufficient detail within the framework of this DEIR to proceed without further environmental analysis.

Discretionary approvals by the City are required for implementation of the AIDP. In addition to the following currently proposed discretionary actions for the AIDP, other concurrent and future approvals and ministerial actions by the City may be required for the implementation of the AIDP. Other actions may be necessary to implement the project, as identified below in "Other Discretionary and Ministerial Actions."

3.4.1 - Other Discretionary and Ministerial Actions

Subsequent approvals by the City of Manteca may include:

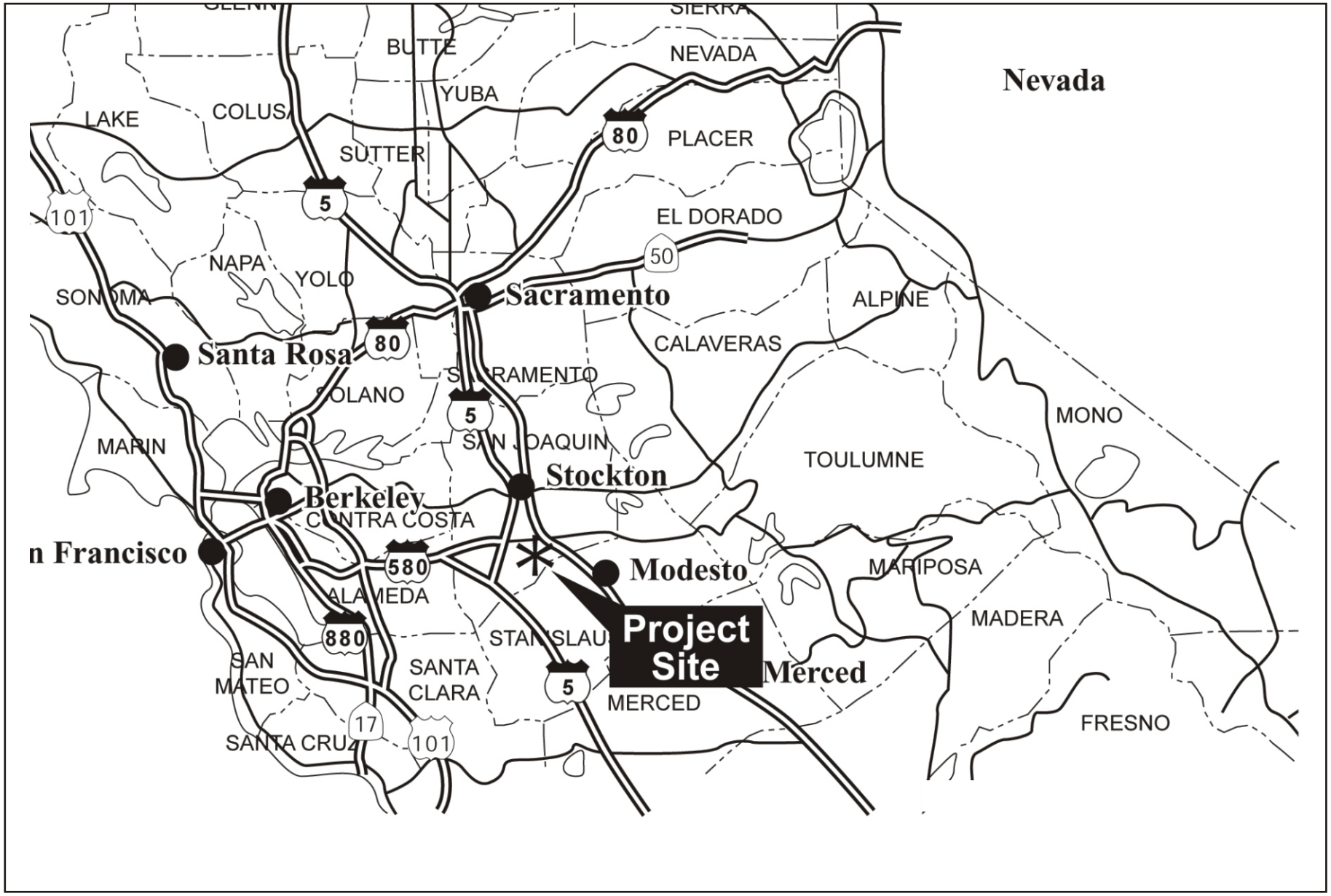
- Amendment to the Public Facilities Implementation Plan
- Final master plans
- Building permits
- Grading permits

3.5 - Responsible and Trustee Agencies

The DEIR will provide environmental information to responsible and trustee agencies and other public agencies, which may be required to grant approvals or be coordinated with as part of project implementation. These agencies include, but are not limited to, the agencies described below.

3.5.1 - State of California

State of California, Regional Water Quality Control Board. Pursuant to the federal Clean Water Act (§ 402 [g]) and State General Construction Activity Storm Water Permit, a National Pollution Discharge Elimination System (NPDES) permit and storm water pollution prevention plan will be required from the California Regional Water Quality Control Board (RWQCB) for grading and construction in areas greater than five acres. Pursuant to the NPDES permit requirements, a Notice of Intent must be submitted.



NORTH

30 15 0 30

APPROXIMATE SCALE IN FEET

Exhibit **3-1**

Regional Location Map

Michael Brandman Associates

24820001 • 12/2003 | regional location map.cdr



Source: 2003 Thomas Bros. Map, Digital Edition.

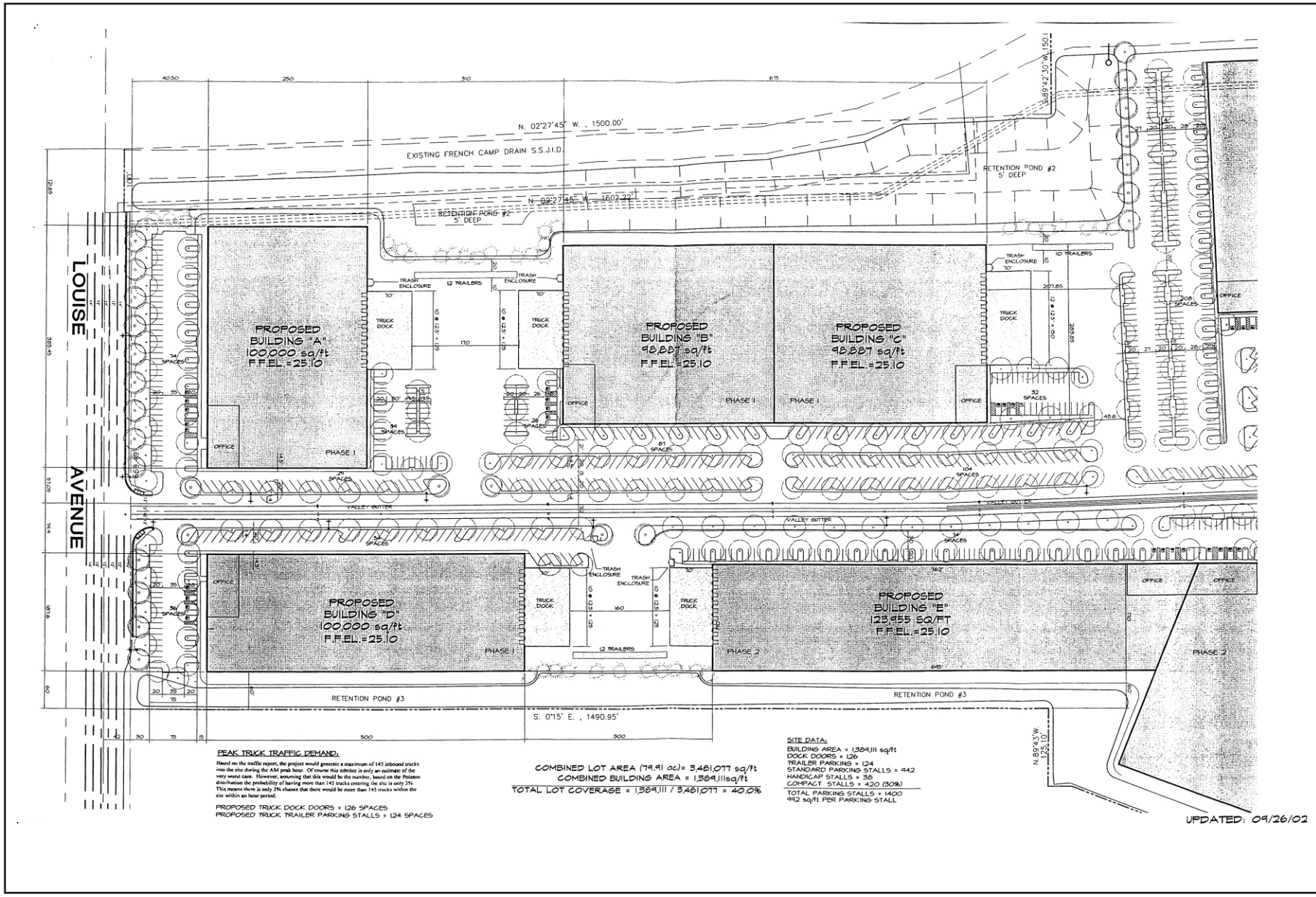
NORTH

Michael Brandman Associates

24820001 • 12/2003 | local vicinity map.cdr

Exhibit **3-2**

Local Vicinity Map



Source: R.B. Welty & Associates, Inc. 2002.

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18 9 0 18

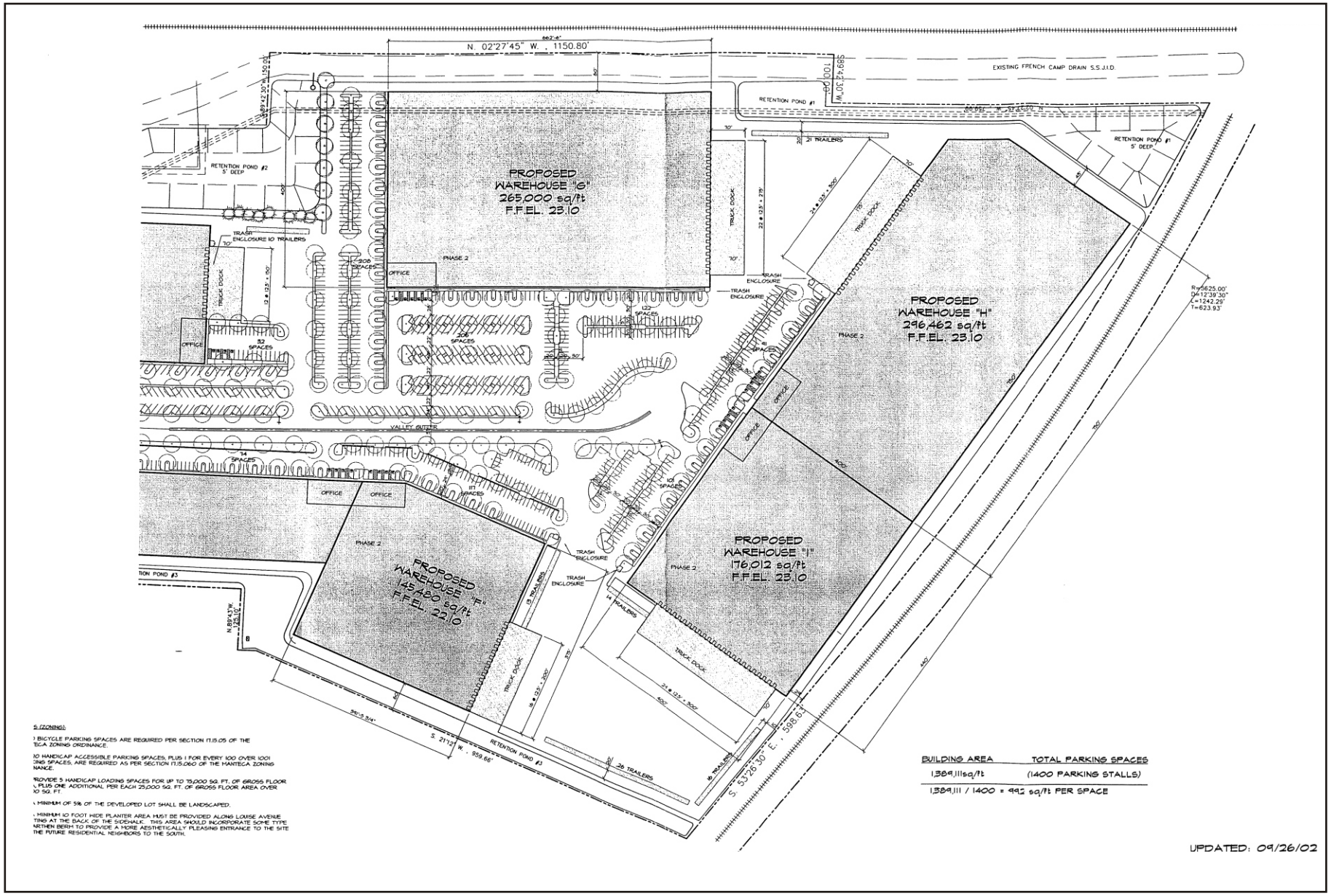
APPROXIMATE SCALE IN FEET

Exhibit **3-3a**

Site Plan

Michael Brandman Associates

24820001 • 12/2003 | site_plan_a.cdr



Source: R.B. Welty & Associates, Inc. 2002.

NORTH

32 18 0 32

SCALE IN FEET

Exhibit **3-3b**
Site Plan

Michael Brandman Associates

24820001 • 12/2003 | site plan b.cdr

ASSIEH INDUSTRIAL DEVELOPMENT PROJECT - DRAFT EIR

SECTION 4: ENVIRONMENTAL SETTING, PROJECT IMPACTS, MITIGATION MEASURES, AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Assieh Industrial Development Project (AIDP) DEIR provides analysis of impacts for environmental topics determined in the IS/NOP (see Appendix A) AIDP to result in "potentially significant impacts." Each section includes the following information:

- Description of the environmental setting (existing conditions), including related plans and policies, and identification of thresholds of significance;
- Analysis of potential project effects;
- Identification of mitigation measures, if required to reduce the identified impacts; and
- Identification of levels of significance after mitigation.

CEQA Guidelines § 15064.7 address thresholds of significance and encourage each public agency to develop thresholds of significance through a public review process. Subsequently, these thresholds must be published and adopted by agency ordinance, code, or regulation. The thresholds used in this DEIR have been derived from several sources including the City of Manteca General Plan, previous environmental documents prepared by the City of Manteca, the CEQA Guidelines and checklist, adopted thresholds from other agencies (such as the San Joaquin Valley Air Quality Management District), and the professional opinions of the City of Manteca staff.

Section 4 of this DEIR describes the significant environmental effects of the AIDP and provides a discussion of project-specific impacts. An analysis of cumulative impacts is provided in Section 5, Other CEQA Considerations, of this DEIR. Impacts resulting from implementation of the AIDP will be described as less than significant, significant, or significant and unavoidable. Mitigation measures will be recommended for each significant environmental effect identified in the DEIR. Although not required by CEQA, mitigation measures may be recommended for less than significant impacts to further reduce their potential effects on the environment.

A separate Mitigation Monitoring and Reporting Program (MMRP), as required by Public Resources Code 21081.6, will be included in the Final EIR. The MMRP outlines the mitigation measures and the monitoring and reporting methods that will be employed. The City of Manteca will consider the MMRP for adoption when certification of the Final EIR is considered.

4.1 - Land Use and Planning

Land use issues addressed in this section include the related plans and policies governing existing and future conditions within the Assieh Industrial Development Project (AIDP) area. This section also includes a discussion of the existing and proposed land uses in the project area and the compatibility of land use conditions, such as density and height of land uses adjacent to the project area, and those within the project area.

4.1.1 - Environmental Setting

The City of Manteca (City) has generally grown in a compact pattern around the historic center of the City at the intersection of Yosemite Avenue and Main Street. However, development in the 1990s extended the urbanized portion of the City south of Highway 120. This development was discontinuous and sporadic and resulted in active agricultural land and low-density rural residential uses separating new higher density single-family residential neighborhoods. The future growth pattern of the City is in part directed through the City of Manteca General Plan, which strives to establish an attractive community form and scale to provide a high quality of life and an attractive, notable, identity for Manteca.

Onsite Land Uses

The project site encompasses 80-acres along the western boundary of the City (see Exhibit 3-3). Currently, the project site has been roughly graded and the two former onsite structures have been demolished. According to the City's General Plan and the City's Zoning Ordinance, the project site is designated as Heavy Industrial. The General Plan identifies that the Heavy Industrial designation provides for manufacturing, processing, assembling, research, wholesale and storage uses, trucking terminals, railroad and freight stations, and other similar activities that require separation from residential uses due to noise, vibration, or other characteristics incompatible with residential use.

Surrounding Land Uses

Surrounding land uses include pasture lands and the Union Pacific Railroad tracks to the north, residentially zoned lands to the east, industrially zoned lands that are supporting agricultural land uses to the south, Manteca Unified School District administrative offices and a school farm to the east, and industrially zoned lands that are supporting agricultural uses and the French Camp Drain and Union Pacific Railroad tracks to the west.

Relevant Plans and Policies

Discussed within this section are the local land use planning programs and policies that guide development within the project area. Regional planning programs are discussed within the appropriate topical sections of this DEIR (i.e., San Joaquin Valley Air Pollution Control District Air Quality Management Plan is discussed in Section 4.3, Air Quality; Regional Transportation Plan is discussed in Section 4.2, Traffic and Circulation).

The primary documents that guide the development in and around the project area are the City of Manteca General Plan Update 2023 and the City of Manteca Zoning Code (Title 17 of the Municipal Code).

City of Manteca General Plan Update 2023

The City of Manteca General Plan is a long-range and comprehensive plan that coordinates all major components of the community's physical development for the next twenty years. Implementation of the General Plan will ensure that future development projects are consistent with the community's goals and that adequate urban services are available to meet the needs of new development.

The following General Plan Land Use Element goals and policies are applicable to the AIDP:

Goals

LU-1: To provide for orderly, well-planned, and balanced growth consistent with the limits imposed by the City's infrastructure and City's ability to assimilate new development.

LU-4: Provide for land uses that expand employment, education, recreation, and cultural opportunities for residents and enhance Manteca as the commercial and service center for Southern San Joaquin County.

Guiding Policies

LU-P-1: Growth shall mitigate its own impacts and shall provide a positive benefit to the City.

LU-P-2: Growth must contribute to a strong diversified economic base and an effective balance between employment and housing opportunities for all income levels.

LU-P-3: The City shall encourage a pattern of development that promotes the efficient and timely development of public services and facilities.

LU-P-4: The City shall encourage a development pattern that is contiguous with the boundary of the City.

LU-P-6: The City shall establish and maintain a Secondary Urban Service Boundary line designating lands eligible for annexation and urban development beyond the year 2013. Lands outside the Primary Urban Services Boundary line, but within the Secondary Urban Service Boundary line, shall not be annexed to the City of Manteca prior to their inclusion within the Primary Urban Services Boundary line. Prior to 2013, the Primary Urban Services Boundary line may be amended through adoption of a specific plan, an area plan, or comparable planning process, or an amendment to the General Plan.

LU-P-11: The City shall manage the rate and type of growth in Manteca according to a growth management program that provides for an annual allocation of the amount of development that may occur, given the capacities of City facilities and services, and the ability of the community to assimilate new development and fluctuations in the balance of market demand for new housing and new job development.

LU-P-30: The City shall promote, cooperate in, and assist in the maintenance and expansion of Manteca's industrial sector employment development within the City of Manteca and in the south San Joaquin County area that will help reduce the home-to-work commute distance for Manteca residents.

LU-P-31: New employment centers that may include office, business, professional, research and development, and light industrial or industrial development shall be located in areas served by full City services or served by suitable facilities approved by the City. Employment centers should be located along major arterials with easy freeway access and with access from public transit and accessible to bicyclists

LU-P-33: The City shall promote the development of "clean" industries that do not create problems or pose health risks associated with water and air pollution or potential spills or leaks. However, the City will designate appropriate locations that accommodate light industrial and heavy industrial uses.

LU-P-35: The City shall monitor all types of employment to ensure that a balance is being maintained among residential, commercial, and industrial job development.

City of Manteca Zoning Ordinance

The project site is zoned as Heavy Industrial M-2.

4.1.2 - Project Impacts and Mitigation Measures

Thresholds of Significance

The project will result in a significant impact on the environment related to land use and planning issues if it:

- Generates a conflict with any applicable land use plan, policy, or regulation of a responsible agency with jurisdiction over the project that was adopted for the purpose of avoiding or mitigating an environmental effect.
- Creates an incompatibility with existing or planned land uses onsite or adjacent to the project site.
- Results in a substantial adverse change in the existing land use patterns.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact; lists mitigation measure(s), if applicable; and describes the level of impact after mitigation.

Impact 4.1-A: Implementation of the AIDP will not result in incompatibilities with existing or planned onsite or surrounding land uses. (Less than Significant Impact)

Land use compatibility is primarily determined by the sensitivity of land uses to the characteristics associated with another land use, such as noise, density, height, bulk, and/or appearance.

As part of the General Plan 2023, the City of Manteca established primary and secondary service area boundaries. Areas beyond these boundaries are to remain rural in nature and without urban services. The AIDP is within the secondary service area. The AIDP will result in transforming the undeveloped, vacant site to urban uses; however, since the project site is within an area that is designated for development, implementation of the AIDP will not result in creating inconsistencies or be incompatible with existing onsite land uses.

Surrounding land uses include pasture lands, the Union Pacific Railroad tracks and industrially zoned lands to the north, residentially zoned lands to the east, residentially and commercially zoned lands that are supporting agricultural land uses to the south—a portion of which is the future 1,384 unit Villa Ticino development, the Manteca Unified School District administrative offices, a school farm, and two residences to the east, and the French Camp Drain, Union Pacific Railroad tracks, and agricultural and industrial land uses in the City of Lathrop to the west. Under present conditions, the AIDP will not result in compatibility issues with the existing surrounding land uses, since the site is currently surrounded by primarily agricultural and industrial uses. However, the City is currently considering a development application for the Villa Ticino Development on residentially designated lands immediately south of the project site.

The General Plan Land Use Diagram identifies the land use designation of the project site as Heavy Industrial. According to the General Plan, the Heavy Industrial land use designation allows for manufacturing, processing, assembling, research, wholesale and storage uses, trucking terminals, railroad and freight stations, and other similar activities that require separation from residential uses due to noise, vibration, or other characteristics incompatible with residential use. The AIDP consists of development of an approximately 1,404,680 square foot industrial park, which will result in operations consistent with the designated land use of Heavy Industrial; as noted, such activities are considered incompatible with residential land uses. Thus, at the time of project operation and

throughout the lifetime of the project there is the potential for incompatibilities with surrounding land uses to occur due to the designation of residential land uses in proximity to heavy industrial land uses.

As indicated previously, land use compatibility is primarily determined by the sensitivity of land uses to the characteristics associated with another land use, such as noise, density, height, bulk, and/or appearance (including light and glare). Compliance, as required with the City's Zoning Ordinance stipulates that the project site is subject to site plan and design review by the City's Planning Director. According to the City's Zoning Ordinance, the purpose for the site planning and design review process is to ensure the harmonious appearance and operation of buildings and sites, so that new and modified uses and development will be compatible with the existing and potential development of the surrounding area, and to produce an environment of stable desirable character. As part of this process, the AIDP has been designed with appropriate features (e.g., setbacks, shielded lighting, landscaping, etc.) to ensure compatibility with surrounding land uses. Therefore, implementation of the AIDP is not expected to result in a significant compatibility impact on existing or future residential uses to the south and east of the site.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
The AIDP will not result in any significant land use compatibility impacts.

Impact 4.1-B: Implementation of the AIDP is consistent with the relevant Manteca General Plan Update 2023 goals and policies and City of Manteca Zoning Ordinance. (Less than Significant Impact)

The goals and policies contained within the Manteca General Plan Update 2023 Land Use Element guide are consistent with the development at the project site. Consistent with the General Plan's Land Use Element, the AIDP will help to further the City's strong and diversified economic base by developing land uses that expand employment opportunities within the City of Manteca's industrial sector, reducing the need for Manteca residents to commute to employment sectors outside of the City. In an effort to facilitate balanced growth within the City, the AIDP would be implemented in a fashion to ensure that public services and utilities are adequate to serve the site, in addition to complying with all local, state, and federal guidelines and regulations regarding the use, storage, and transport of hazardous materials. Implementation of the AIDP will also be consistent with the zoning designation for the project site; therefore, no inconsistencies would occur.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
Implementation of the AIDP will be consistent with the relevant land use and planning goals and policies of the General Plan and the City's Zoning Ordinance. Therefore, no significant impacts would occur.

4.2 - Transportation and Circulation

Kimley-Horn and Associates, Inc. prepared a Traffic Impact Analysis for the offsite traffic and circulation impacts of the Assieh Industrial Development Project (AIDP) in May 2004 (Appendix B). This DEIR section is based upon the findings of this the Kimley-Horn report.

4.2.1 - Environmental Setting

Relevant Goals and Policies

The following goals and policies of the City of Manteca General Plan Update 2023 are applicable to the AIDP:

Goals

C-1: Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca, based on land use and current improvement standards in conformance with the Public Facilities Implementation Plan (PFIP).

C-2: Maintain a safe circulation system.

C-4: Minimize traffic accidents and hazards.

C-5: Ensure the adequate provision of both on-street and off-street parking.

Guiding Policies

C-P-1: The City shall attain the highest possible traffic levels of service (LOS) with the financial resources and the limits of technical feasibility.

C-P-2: Manteca's target for transportation LOS is to provide a City-wide average LOS of C or better and a minimum of LOS D at any individual location. LOS C, LOS D and the other Level of Service ratings as defined by the current traffic engineering standards. This C average and D minimum shall be accomplished by attempting to provide LOS C at all locations, but accepting LOS D under the following conditions:

a. Where constructing facilities with enough capacity to provide LOS C is found to reasonably expensive. This applies to facilities, for example on which it will cost significantly more per dwelling unit equivalent (DUE) to provide LOS C than to provide LOS D.

b. Where it is difficult or impossible to maintain LOS C because surrounding facilities in other jurisdictions operate at LOS D or worse.

c. Where free flowing roadways or interchange ramps would discourage alternative travel modes.

d. Where maintaining LOS C will be a disincentive to use of existing alternative modes or the implementation of new transportation modes that would reduce vehicle travel.

C-P-5: Development, which would necessitate roadway improvements prior to the development of lands abutting those roadway improvements, shall be required to make such improvements, or participate in such improvements as a condition of approval.

C-P-6: New development will pay a fair share of the costs of street and other traffic and transportation improvements based on traffic generation and impacts on levels of

service in conformance with the standards and policies established in the Public Facilities Implementation Plan.

C-P-7: The street system shall be expanded in a contiguous and concentric manner to serve new development areas and to provide improved circulation for existing residents.

C-P-8: Street improvements will be designed to provide multiple, direct, and convenient traffic routes.

C-P-18: In accord with the PFIP, the City shall assess development fees for traffic signals and highway interchanges sufficient to fund system wide improvements. The development fee for these traffic improvements shall be periodically reviewed, and revised as necessary.

C-P-21: The creation or continuance of traffic hazards shall be discouraged in new development and other proposals requiring the City to exercise its discretionary authority.

C-P-22: In the development of new projects, the City shall give special attention to maintaining adequate corner-sight distances at City street intersections and at intersections of City streets and private access driveways and roadways.

C-P-26: The City shall require all new development to provide an adequate number of off-street parking spaces to accommodate the typical parking demands of the type of development of the site. In the downtown area, the City is responsible for development of parking facilities and new development is not required to provide parking.

Implementing Policy

C-I-4: The City shall require new development to participate in the funding and construction of collector and arterial street improvements identified in the Street Master Plan.

Site Access

Access to the AIDP is proposed from Louise Avenue. The project driveway is proposed to operate as either a two-way stop-controlled intersection or a signalized intersection. If the project driveway is selected to operate as a stop-controlled intersection, the driveway will permit only right turning vehicles in and out of the site and prohibit all other movements. This alternative is not recommended due to issues related to enforcement of the turning prohibition and intersection geometry. If the project driveway is selected to operate as a signalized intersection, the driveway will permit all turning movements entering and exiting the driveway.

The Villa Ticino West project is currently planned to include a driveway on Louise Avenue, east of the proposed driveway location for the AIDP. These driveways could be aligned to allow for a full movement signalized intersection. To construct this new four-legged, signalized intersection, either the Villa West project or both projects would have to modify their site plans to re-align their respective project roadways with one another. It should be noted that because of the relatively narrow site frontage of the AIDP on Louise Avenue it is not possible to realign the AIDP access to fully align with the access for the Villa Ticino West project. Therefore, the full movement access scenario is recommended and analyzed throughout the remainder of this report.

The Villa Ticino West project includes construction of a fire station on Louise Avenue, between the high-density residential development and the commercial development portion of the Villa Ticino West project. At the time this report was prepared, the configuration of the fire station access to Louise Avenue and to the surrounding Villa Ticino West project was unknown. However, the likely access is more than 1,100 feet from the proposed access to the AIDP. Because of the anticipated

distance and the low traffic associated with the fire station, no operational or safety conflicts are anticipated between the two. Nevertheless, it is assumed that the access will be further evaluated as part of the Villa Ticino West traffic study. At that time, the City should review the entering and exiting movements of the proposed fire station to ensure immediate and convenient access to/from the fire station. The fire station may require a connection to the Villa Ticino West project roadway to allow for better access to areas west of the study area and limit the need for fire engines to make a U-turn movement at the Louise Avenue/Airport Way intersection.

AIDP Driveway Design and Internal Circulation

According to the site plan, the AIDP will construct a westbound right turn lane into the project site. Adding the right turn lane will minimize the conflicts between through-traffic and slower right-turn vehicles. To accommodate the AIDP and other turning traffic, the right turn lane should be at least 150 feet long.

Intersections Included in Analysis

The AIDP will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess potential traffic related impacts associated with the project, the following intersections, illustrated in Exhibit 4.2-4, were selected by the City of Manteca for evaluation:

1. I-5 SB Ramps / Lathrop Road
2. I-5 NB Ramps / Lathrop Road
3. Airport Way / Lathrop Road
4. I-5 SB Ramps / Louise Avenue
5. I-5 NB Ramps / Louise Avenue
6. McKinley Avenue / Louise Avenue
7. Project Driveway / Louise Avenue
8. Airport Way / Louise Avenue
9. Airport Way / Yosemite Avenue
10. Yosemite Avenue / SR-120 EB Ramps
11. Yosemite Avenue / SR-120 WB Ramps
12. Airport Way / SR-120 EB Ramps
13. Airport Way / SR-120 WB Ramps

Roadway Networks

Discussed below is the existing roadway network within the vicinity of the project site.

Interstate 5 (I-5)

I-5 is a major north-south freeway that carries between 68,000 and 101,000 vehicles daily. Local interchanges are at Lathrop Road and Louise Avenue.

Route 120 (SR 120)

SR-120 is a major east-west roadway that carries between 58,000 and 70,000 vehicles per day with local interchanges at Yosemite Avenue and Airport Way

Lathrop Road

Lathrop Road is an east-west roadway in the City of Manteca to the north of the project site and in the City of Lathrop to the northwest of the site. In the vicinity of the project, Lathrop Road intersects I-5, McKinley Avenue and Airport Way. The intersection of Lathrop Road and Airport Way is signalized. The intersections of Lathrop Road with I-5 and McKinley Avenue are controlled by stop signs.

Airport Way

Airport Way is a two-lane, north-south roadway in the City of Manteca. Airport Way is to the east of the project site. In the vicinity of the project site, Airport Way intersects Lathrop Road, Louise Avenue, Yosemite Avenue, and SR-120 on and off ramps. The intersection of Airport Way and Yosemite Avenue and the intersection of Airport Way and Lathrop Avenue are signalized. The intersection of Airport Way and Louise Avenue is controlled by an all-way stop sign. Both the SR-120 eastbound and westbound off ramps are controlled by stop signs.

Louise Avenue

Louise Avenue is an east-west roadway with one lane in each direction near the project site. Louise Avenue widens to two lanes in each direction west of Howland Road. Louise Avenue provides access to I-5, McKinley Avenue, and Airport Way in the AIDP area. Currently, all intersections with the exception of Airport Way and Louise Avenue are signalized.

Yosemite Avenue

Yosemite Avenue is an east-west roadway to the south of the AIDP. In the vicinity of the project, Yosemite Avenue intersects the SR 120 eastbound and westbound on and off ramps, McKinley Avenue, and Airport Way. The intersection of Yosemite Avenue and Airport Way is controlled by a traffic signal. The intersection of Yosemite Avenue and the SR 120 eastbound and westbound on and off ramps and the intersection of Yosemite Avenue and McKinley Avenue are stop sign controlled.

McKinley Avenue

McKinley Avenue is a two lane north-south roadway to the west of the project site. In the vicinity of the project site, McKinley Avenue intersects Lathrop Road, Louise Avenue, and Yosemite Avenue. The intersection of McKinley Avenue and Lathrop Road and Yosemite Avenue are stop controlled and the intersection of McKinley Avenue and Louise Avenue is signal controlled.

Existing Lane Configurations and Traffic Control

Existing intersection lane configurations and traffic control are illustrated in Exhibit 4.2-2. There are five existing traffic signals in the AIDP area. The remaining AIDP area intersections are stop-controlled intersections. It should be noted that numbers shown in Exhibit 4.2-2 represent existing turn-bay lengths for right and left turn lanes.

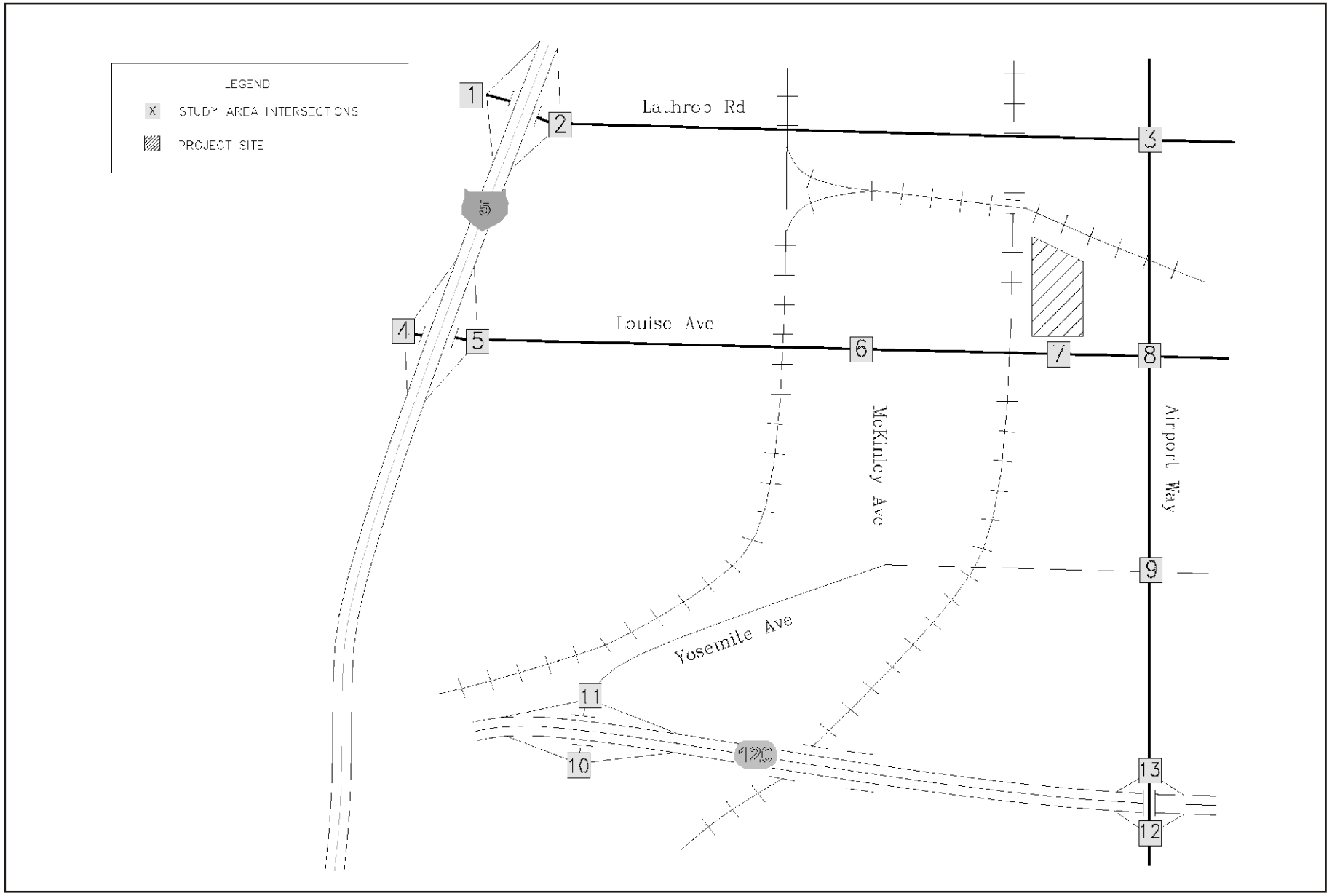
Existing Traffic Turning Movement Volumes

Weekday intersection turning movement volumes were collected for the thirteen existing intersections in November 2003. Existing volumes are shown in Exhibit 4.2-3. Volumes were collected during the AM and PM peak periods, between 7:00-9:00 AM and 4:00-6:00 PM, respectively.

As part of the traffic counts, 24-hour mechanical tube counts were collected to determine truck volumes on Louise Avenue west of the Airport Way intersection. Truck volume data was analyzed to calculate the percentage of total truck traffic in the AIDP area. Results indicate that trucks near the site currently account for 4 percent of total traffic in the AM peak hour and 2 percent in the PM peak hour.

As shown in Table 4.2-1, each of the existing AIDP area intersections operate at LOS C or better during the AM and PM peak periods; however, some unsignalized intersections operate below an acceptable threshold. These are existing deficiencies. The following movements at the two-way stop-controlled study intersections currently operate at LOS E or F:

- ***Lathrop Road/I-5 SB Ramps (Southbound approach)***
  The delay is caused by the lack of gaps in the traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. Due to the nature of two-way stop controlled intersections, no improvement is available except future signalization.

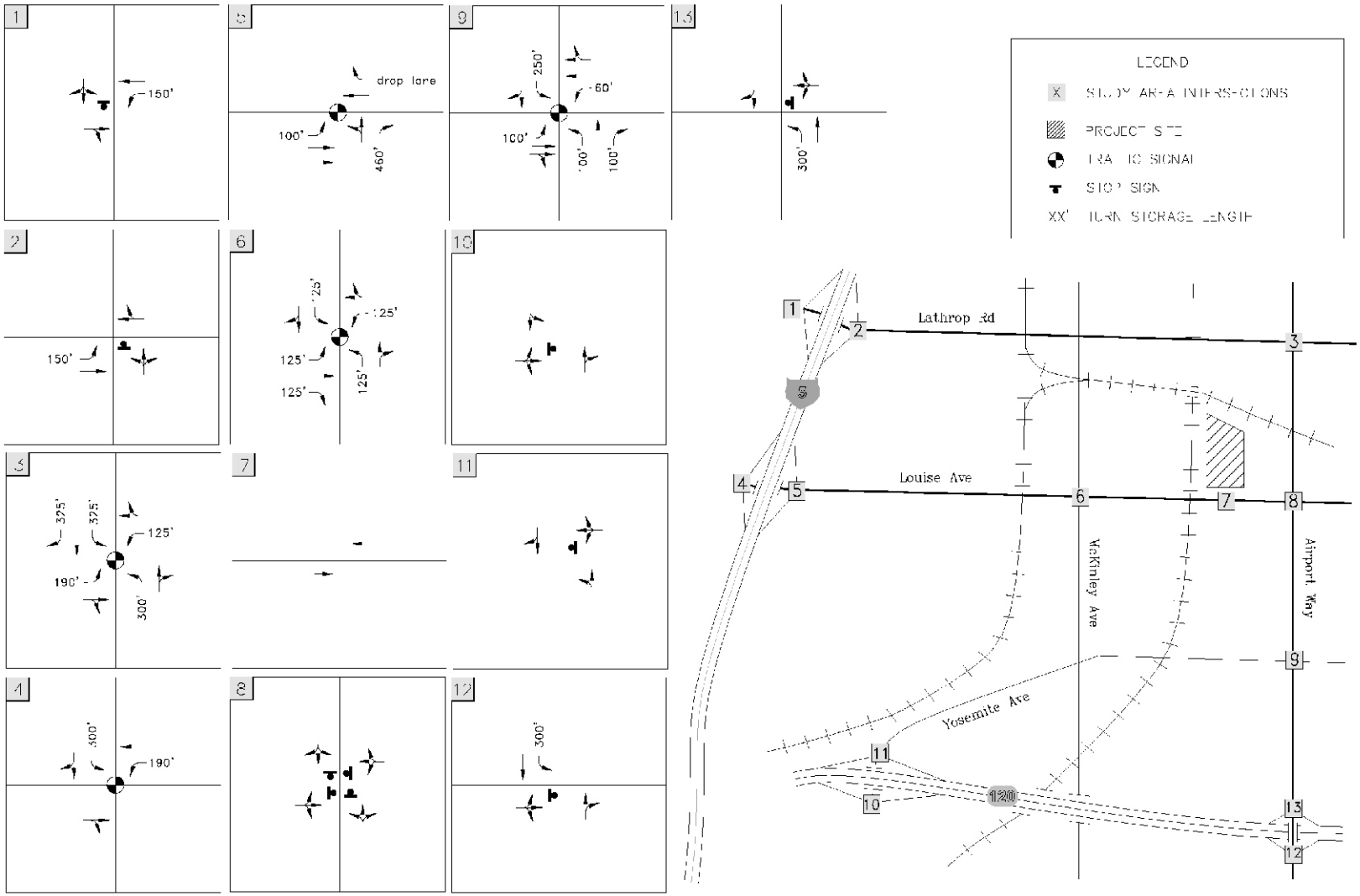


Source: Kimley-Horn and Associates, Inc.

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Exhibit **4.2-1**

Project Location and Study Intersections



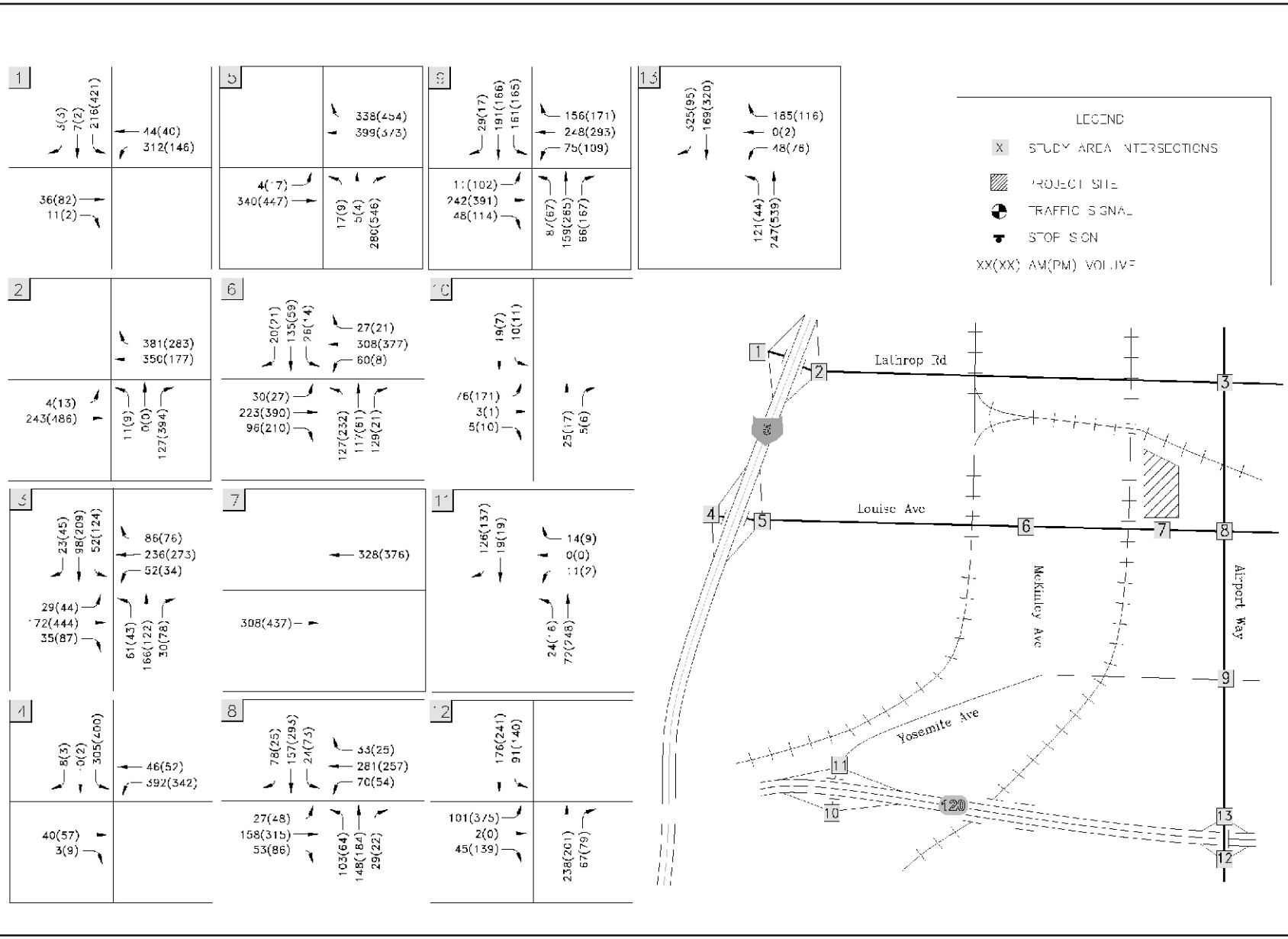
Source: Kimley-Horn and Associates, Inc.

NORTH

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Exhibit **4.2-2**

Existing Lane Geometry and Traffic Control



Source: Kimley-Horn and Associates, Inc.

NORTH

NOT TO SCALE

Exhibit **4.2-3**

Existing Peak Hour Turning Movements

- ***Lathrop Road/I-5 NB Ramps (Northbound approach)***
  The delay is caused by the lack of gaps in the PM traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. If the northbound approach is widened to permit a full left- and right-turn lane for the off-ramp, the operation would be improved to LOS D under the existing conditions.
- ***Airport Way/SR-120 EB Ramps (Eastbound approach)***
  The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. Due to the nature of the two-way stop controlled intersection, no improvement is available except future signalization.
- ***Airport Way/SR-120 WB Ramps (Westbound approach)***
  The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. If the approach is widened to permit full left- and right-turn lanes for the westbound off-ramp, the operation would be improved to LOS C under the existing conditions.

Each of these poor operating conditions occurs on the off-ramp leg to the listed intersections. The queue for each of the identified approaches was analyzed to determine if any of the queues encroached on the through travel lanes of either I-5 or SR-120. It was determined that none of the anticipated queues at these approaches will encroach on the travel lanes of the roadway they are exiting.

The intersections at Airport Way and SR-120 are part of a more detailed study being completed for a separate project. It is possible that in the future additional improvements may be identified for this location.

In addition, the intersection of Airport Way and Louise Avenue is an all-way stop-controlled intersection and will operate at LOS E and LOS F in the AM and PM peak hours, respectively. The poor level of service at this intersection is caused by a lack of capacity at the all-way stop-controlled intersection. If the intersection were to be widened to add left turn lanes, the capacity would be increased to LOS D under the existing condition.

Table 4.2-1: Existing Level of Service Summary

Peak Period		AM	PM
Signalized Intersections			
2	I-5 NB Ramps / Lathrop Road	—	—
3	Airport Way / Lathrop Road	B	C
4	I-5 SB Ramps / Louise Avenue	B	C
5	I-5 NB Ramps / Louise Avenue	A	A
6	McKinley Avenue / Louise Avenue	C	B
7	Project Driveway / Louise Avenue	—	—
8	Airport Way / Louise Avenue	—	—
9	Airport Way / Yosemite Avenue	B	C
12	Airport Way / SR-120 EB Ramps	—	—
13	Airport Way / SR-120 WB Ramps	—	—

Table 4.2-1 (Cont.): Existing Level of Service Summary

	Peak Period	AM	PM
Two-Way Stop Controlled Intersections			
1	I-5 SB Ramps / Lathrop Road Southbound Westbound Left	 **F** A	 **F** A
2	I-5 NB Ramps / Lathrop Road Northbound Eastbound Left	 B A	 **E** A
7	Project Driveway / Louise Avenue Northbound Westbound Left	 — —	 — —
10	Yosemite Avenue / SR-120 EB Ramps Eastbound Southbound Through-Shared-Left	 A A	 B A
11	Yosemite Avenue / SR-120 WB Ramps Westbound Northbound Through-Shared-Left	 A A	 A A
12	Airport Way / SR-120 EB Ramps Eastbound Southbound Left	 C A	 **F** A
13	Airport Way / SR-120 WB Ramps Westbound Northbound Left	 C A	 **E** A
All-Way Stop Controlled Intersections			
8	Airport Way / Louise Avenue	**E**	**F**
Source: Kimley-Horn and Associates Inc., May 2004.			

Existing Pedestrian and Bicycle Facilities

There are currently no continuous pedestrian or bicycle facilities along the AIDP frontage or near the project site along Louise Avenue or Airport Way. Pedestrians and bicyclists currently use the typically narrow shoulders of the road.

Existing Transit Service

San Joaquin Regional Transit District (SJRTD) is the transit service provider for the Lathrop/Manteca area. Currently no SJRTD service operates on Louise Avenue or Airport Way adjacent to or within reasonable (¼ mile) walking distance to the site.

Near-Term Existing Conditions

Near-term transportation and circulation conditions consist of the existing conditions plus the addition of traffic generated from nearby approved projects (Villa Ticino West).

Near-Term Existing Lane Configurations and Traffic Control

The Villa Ticino West roadway does not currently align with the proposed AIDP driveway. The close offset of the two intersections will make it difficult for vehicles, especially trucks, to enter and exit the AIDP driveway. To mitigate this poor operation, the Villa Ticino West roadway and the project driveway should be relocated to align with each other.

Some roadway improvements and construction associated with area development are planned for the project area in the near-term. Exhibit 4.2-5 illustrates the intersection geometry and traffic control assumed in the near-term analysis to be in place when the AIDP is developed. The numbers shown in Exhibit 4.2-5 represent assumed turn-bay lengths for right- and left-turn lanes. The following traffic control improvements are expected in the project area between the current existing condition and the near-term conditions.

Roadway Improvements

- Construction of Louise Avenue to a four-lane arterial between the Union Pacific Railroad tracks east of Airport Way to about 900 feet west of Airport Way. It was assumed that the roadway improvements along the site frontage of the AIDP and the Villa Ticino West projects would widen the cross section of Louise Avenue similarly to the improvements on Louise Avenue east of Airport Way.
- Construction of Airport Way to a six-lane arterial between Louise Avenue to about 750 feet south.

Traffic Control Improvements

Based on the preliminary analysis of the study volume intersections and a preliminary signal warrant analysis that included only peak hour volume warrant #11 (see Appendix B), the following intersections were assumed to be signalized between the existing and near-term conditions[1]:

- Lathrop Road and I-5 NB Off-ramp. This intersection warrants a signal under Existing conditions.
- Louise Avenue and Airport Way. This intersection warrants a signal under Existing conditions.
- Airport Way and SR-120 EB Off-ramp. This intersection warrants a signal under Existing conditions.
- Airport Way and SR-120 WB Off-ramp. This intersection warrants a signal under Existing and Approved conditions.

Near-Term Existing Projects (Approved Development Projects)

The Villa Ticino West residential subdivision will be located on the south side of Louise Avenue and the west side of Airport Way and will ultimately be developed before or roughly the same time as the AIDP. The Villa Ticino West project will include single-family dwellings, multi-family dwellings, a fire station, parks, and an area of commercial development. The Villa Ticino West traffic is considered in the near-term analysis of this DEIR.

Near-Term Existing Vehicle Trips

An estimate of trips generated by the residential and commercial uses within the Villa Ticino West project were calculated through the use of trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition.*

As noted previously, trip generation data was not available for the Villa Ticino West project at the time this report was prepared. Therefore, this project estimated the approximate number of vehicle trips likely to be generated by the Villa Ticino West project. The trip generation rates for the single-family detached housing and multi-family housing were based on dwelling units (DU) as the independent variable.

[1] Even though the Peak Hour Volume Warrant is satisfied, it is recommended that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.

Per the direction of City staff, trips related to retail/commercial uses were based on an assumed 0.42 floor area ratio for the 18.6 acres identified for the retail/commercial uses. This resulted in approximately 333,000 square feet of development. The retail/commercial area was further assumed to include the following specific uses:

Specialty Retail	190,000 square feet
Supermarket	80,000 square feet
Gasoline Station (w/ 12 Fueling Positions)	31,000 square feet
High-Quality Sit-Down Restaurant	20,000 square feet
Fast Food Restaurant w/ Drive Through	12,000 square feet
Approximate Development	**333,000 square feet**

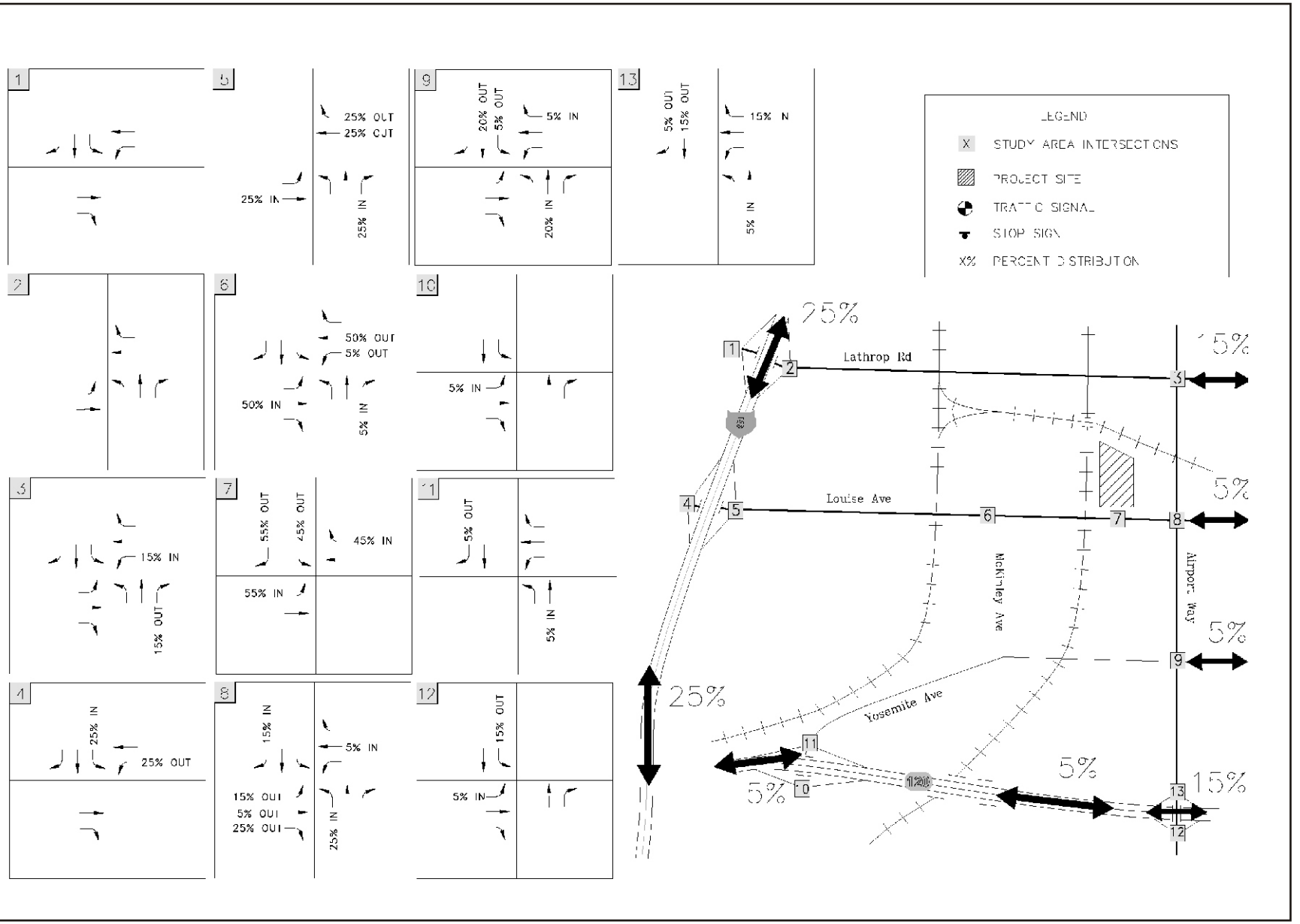
Often with a new development, a certain number of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not new vehicle trips but are considered pass-by trips. Due to the nature of commercial land use, pass-by trips are expected and, therefore, a pass-by trip reduction was applied to the project trip generation. The pass-by trip reduction was calculated based on the ITE *Trip Generation Handbook.*

In addition, because of the close proximity of housing and retail/commercial facilities in the Villa Ticino West project, many trips will be generated entirely within the development without using the major street network for circulation. Internal capture rates and reductions were calculated based on the methodology contained in the ITE *Trip Generation Handbook.* Summary results of the internal capture calculations indicate that approximately 22 percent of single-family trips, 38 percent of multi-family trips, and 14 percent of retail/commercial trips would be contained within the Villa Ticino West development. The remaining trips are considered external trips and were ultimately assigned to the street network. Internal capture information was only available for the PM peak hour.

Table 4.2-2 summarizes the results of the trip generation analysis as well as the internal capture and pass-by reductions for the Villa Ticino West development site.

Table 4.2-2: Villa Ticino West Development Trip Generation

Land Use	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Residential	8,732	161	521	682	583	321	904
Commercial	27,254	748	628	1,376	1,110	1,097	2,207
Subtotal	29,005	909	1,149	2,058	1,693	1,418	3,111
Residential Internal Capture Reduction	N/A	0	0	0	124	94	218
Commercial Internal Capture Reduction	N/A	0	0	0	94	124	218
Commercial Pass-by Reduction	N/A	273	245	518	332	300	632
Net New Vehicle Trips	N/A	636	904	1,540	1,143	900	2,043
Source: Kimley-Horn and Associates, Inc., May 2004.							



Source: Kimley-Horn and Associates, Inc., 2004.

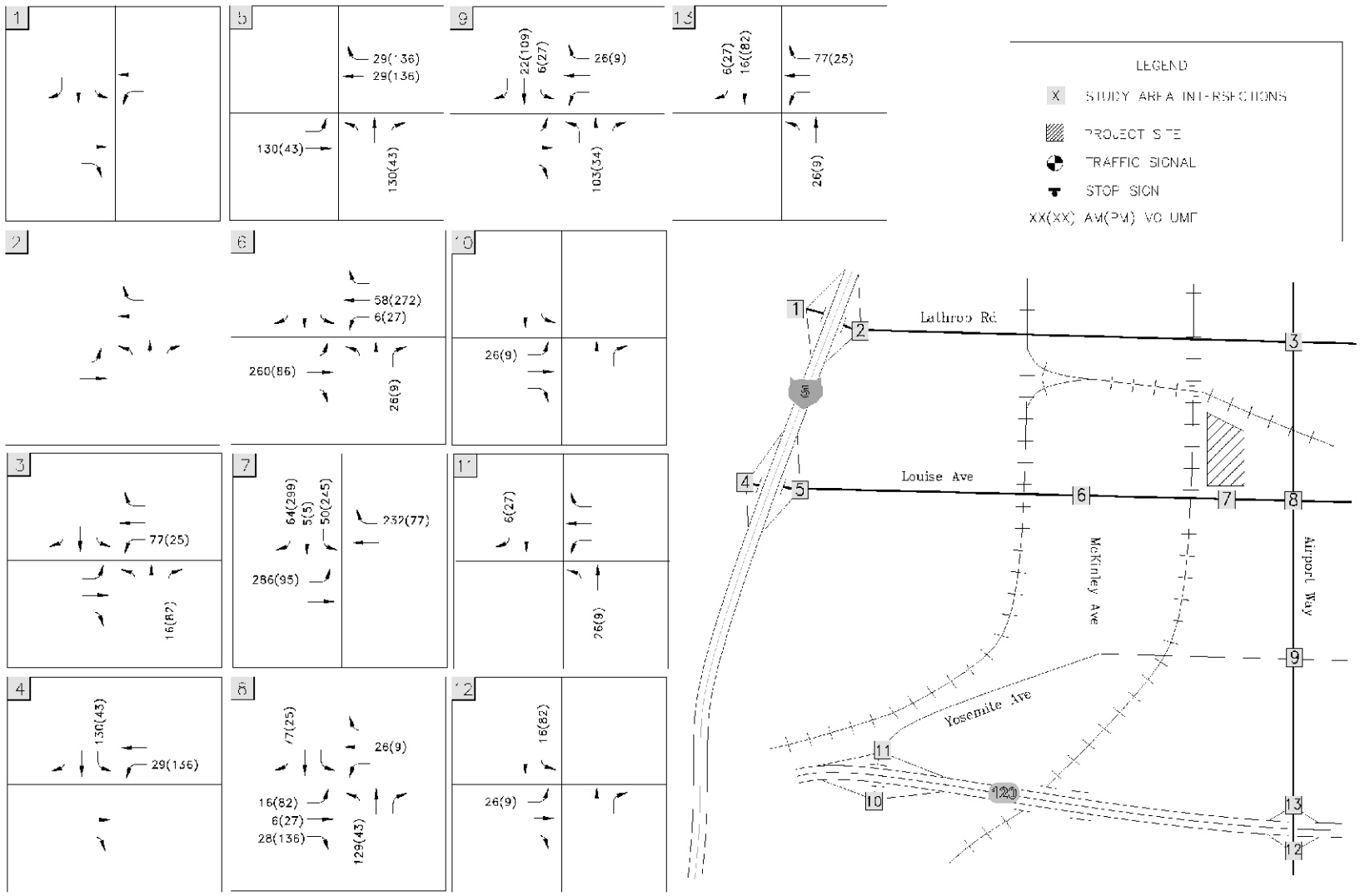
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Exhibit **4.2-4**
Project Trip Distribution

Michael Brandman Associates

24820001 • 06/2004 | 4.2-4 project trip distribution.cdr

ASSIEH INDUSTRIAL DEVELOPMENT PROJECT - DRAFT EIR

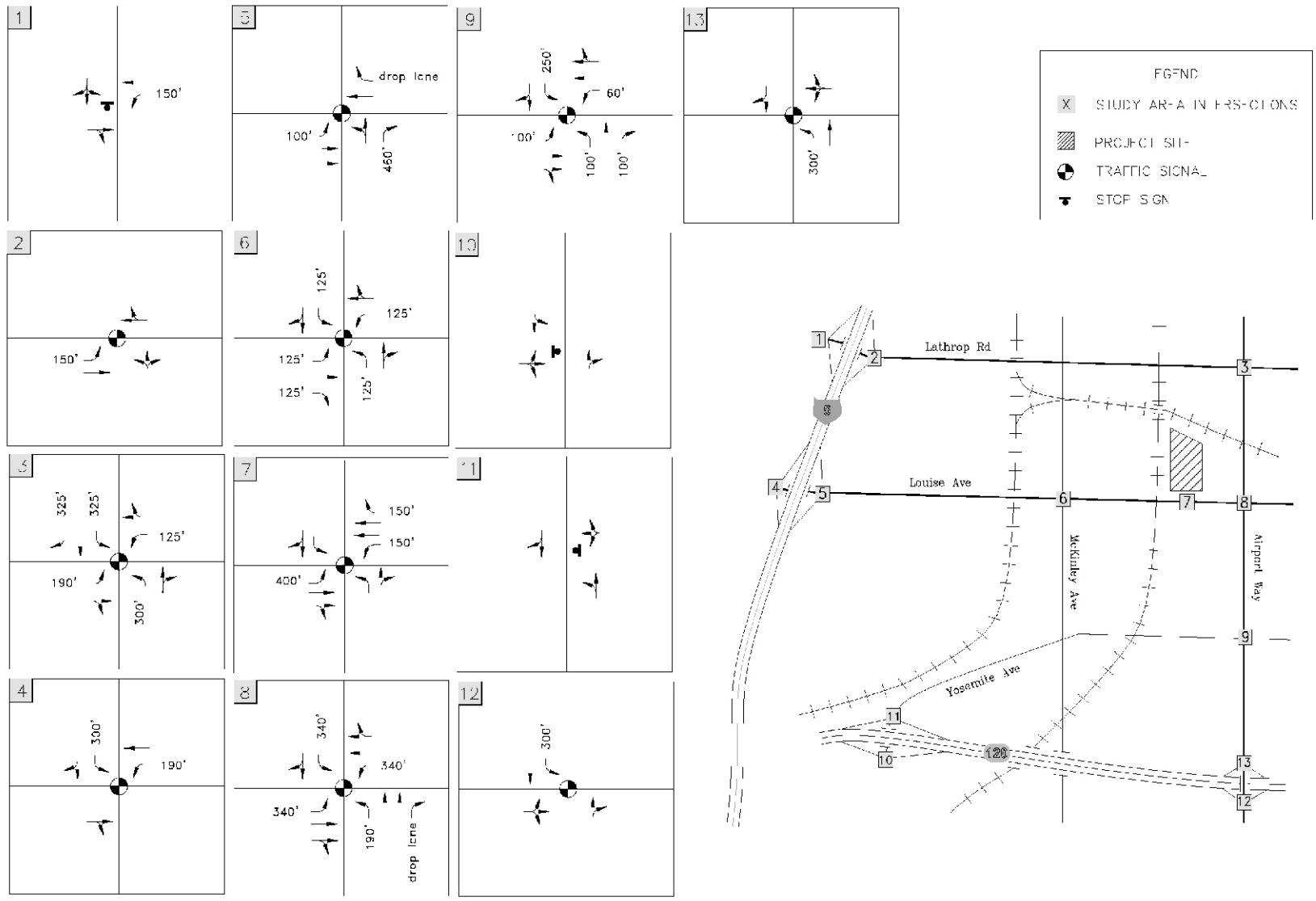


Source: Kimley-Horn and Associates, Inc., 2004.

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Exhibit **4.2-5**

Project Generated Traffic Volumes



Source: Kimley-Horn and Associates, Inc., 2004.

NORTH NOT TO SCALE

Michael Brandman Associates

24820001 • 06/2004 | 4.2-6 near_term lane geometry_traffic control.cdr

Exhibit **4.2-6**

Near-Term Lane Geometry and Traffic Control

As illustrated in Table 4.2-2 the Villa Ticino West development is expected to generate 1,540 new trips in the AM peak hour and 2,043 new trips during the PM peak hour. Exhibit 4.2-6 illustrates the near term existing conditions turning movement volumes at the study intersections and the approximate location of the housing/commercial project in relation to the AIDP. Volumes shown in Exhibit 4.2-6 are only related to the Villa Ticino West project. Movements not showing volumes are not assumed to have Villa Ticino West project traffic.

As shown in Table 4.2-3, near-term operating conditions with traffic from other planned developments are at LOS D or better at the signalized intersections. The intersections of Lathrop Road/I-5 NB Ramps, Airport Way/SR-120 EB Ramps, and Airport Way/SR-120 WB Ramps were assumed to be signalized in the near-term; therefore, the operation level will improve over existing conditions assuming a signal is installed.

The southbound approach of the unsignalized intersection of Lathrop Road and I-5 SB Ramps continues to operate at LOS F in the near-term condition. This is a condition independent of the AIDP. As noted in the existing conditions analysis, due to the nature of two-way stop- controlled intersections, no improvement is available for this intersection except for future signalization. Currently, this intersection does not warrant a signal under the near-term analysis conditions but Caltrans may decide to install a signal in the future to improve the poor level of service of this movement. The queue for this approach was analyzed and it was determined that it will not encroach of the travel lanes of I-5 SB.

Included in the background evaluation is the addition of the Villa Ticino West project (shown at intersection #7). According to the results, the new traffic generated by the Villa Ticino West project will cause the intersection to operate at LOS F if the project roadway is controlled by a stop sign on the minor approach. Therefore, it was assumed that a signal would be installed to address the unacceptable level of service.

Table 4.2-3: Near-Term Existing Level of Service Summary

Peak Period		AM	PM
Signalized Intersections			
2	I-5 NB Ramps / Lathrop Road	A	A
3	Airport Way / Lathrop Road	C	D
4	I-5 SB Ramps / Louise Avenue	C	C
5	I-5 NB Ramps / Louise Avenue	A	C
6	McKinley Avenue / Louise Avenue	D	C
7	Project Driveway / Louise Avenue	—	—
8	Airport Way / Louise Avenue	C	C
9	Airport Way / Yosemite Avenue	C	C
12	Airport Way / SR-120 EB Ramps	B	D
13	Airport Way / SR-120 WB Ramps	A	A

Table 4.2-3 (Cont.): Near-Term Existing Level of Service Summary

	Peak Period	AM	PM
Two-Way Stop Controlled Intersections			
1	I-5 SB Ramps / Lathrop Road Southbound Westbound Left	 **F** A	 **F** A
2	I-5 NB Ramps / Lathrop Road Northbound Eastbound Left	 — —	 — —
7	Project Driveway / Louise Avenue Northbound Westbound Left	 F A	 F B
10	Yosemite Avenue / SR-120 EB Ramps Eastbound Southbound Through-Shared-Left	 A A	 B A
11	Yosemite Avenue / SR-120 WB Ramps Westbound Northbound Through-Shared-Left	 A A	 B A
12	Airport Way / SR-120 EB Ramps Eastbound Southbound Left	 — —	 — —
13	Airport Way / SR-120 WB Ramps Westbound Northbound Left	 — —	 — —
All-Way Stop Controlled Intersections			
8	Airport Way / Louise Avenue	—	—
Source: Kimley-Horn and Associates Inc., May 2004.			

4.2.2 - Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have a significant transportation and circulation impact if it will:

- Cause an intersection to exceed the City's standard (LOS C); or
- Result in substantial increase in traffic accidents and hazard.

Impact Analysis

The impact analysis section is organized by impact labels and identifies each impact, provides a description, lists mitigation measures if applicable, and describes the level of impact after mitigation.

Impact 4.2-A: Implementation of the AIDP is consistent with the relevant transportation and circulation goals and policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

The traffic impact study (TIS) prepared for the AIDP concluded that with mitigation the AIDP will not result in any significant transportation and circulation level of service impacts. With mitigation, project area intersections will operate at acceptable levels of service. Moreover, the project

proponent will be required to complete and/or participate in the funding (fair share) for the required roadway improvements. The installation of such improvements will ensure a safe and efficient circulation system and minimize traffic accidents and hazards, consistent with the City's policies. The AIDP will include improvements such as a paved surface area and a drive and access ways for 124 trailer truck parking spaces, 942 standard automobile parking spaces, 420 compact automobile parking spaces, and 38 accessible parking spaces, which will ensure the adequate provision of both on-street and off-street parking.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Implementation of the AIDP will be consistent with the relevant transportation and circulation goals and policies of the City of Manteca General Plan Update 2023. Therefore, no significant consistency impacts will occur under the AIDP.

Impact 4.2-B: The project will add 632 AM peak hour and 716 PM peak hour vehicle trips to the surrounding roadway network, in addition to traffic generated by near-term development in the AIDP area. (Less than Significant Impact After Mitigation)

Project Trip Generation

AM, PM and daily vehicular trips for the AIDP were developed based on trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition*. This manual is a standard reference used by jurisdictions throughout the U.S. and is based on actual trip generation studies at numerous locations in areas with varying population numbers.

The trip generation rate for Warehousing (ITE Land Use Code 150) was based on square feet as the independent variable.

Often with new development a certain number of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not represented as new vehicle trips but are considered pass-by trips. Due to the nature of the warehouse land use, no pass-by trips are expected and therefore no pass-by trip reduction was applied to the project trip generation. Table 4.2-4 summarizes the results of the trip generation analysis for the project.

Table 4.2-4: Site Trip Generation

Land Use	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Warehousing	6,967	518	144	632	172	544	716
Source: Kimley-Horn and Associates, Inc., May 2004.							

As seen in Table 4.2-4, the industrial development is expected to generate 632 new trips in the AM and 716 new trips in the PM peak hours. Because the project is a warehouse facility, it is expected to include a significant volume of truck trips. However, no information in ITE *Trip Generation* was available regarding typical truck percentages for Land Use Code 150. Therefore, it was concluded that the project was similar to High-Cube Warehouse (ITE Land Use Code 152) which identified truck trips as accounting for 9 to 27 percent of the peak hour traffic at the sites surveyed. Based on

the ITE Data, this study assumed that roughly 18 percent of the total trips from the AIDP would be trucks.

When AIDP truck volumes are applied to the existing background traffic, truck percentages at study intersections are expected to increase from the existing levels to as much as 8 percent in the AM and PM peak hours. Although the percentage of truck traffic diminishes away from the project site, it was conservatively assumed that all study intersection traffic would have 8 percent trucks.

Project Trip Distribution and Assignment

In preparation of the traffic distribution, KHA reviewed the project's industrial use in proximity to the surrounding population centers. In addition, existing traffic counts were also reviewed to determine general proportion of traffic volumes at study intersections. Because of the nature of the development, employees, customers, and trucks serving the AIDP are expected to travel from nearby locations in Manteca, Lathrop, Tracy, Stockton, and beyond.

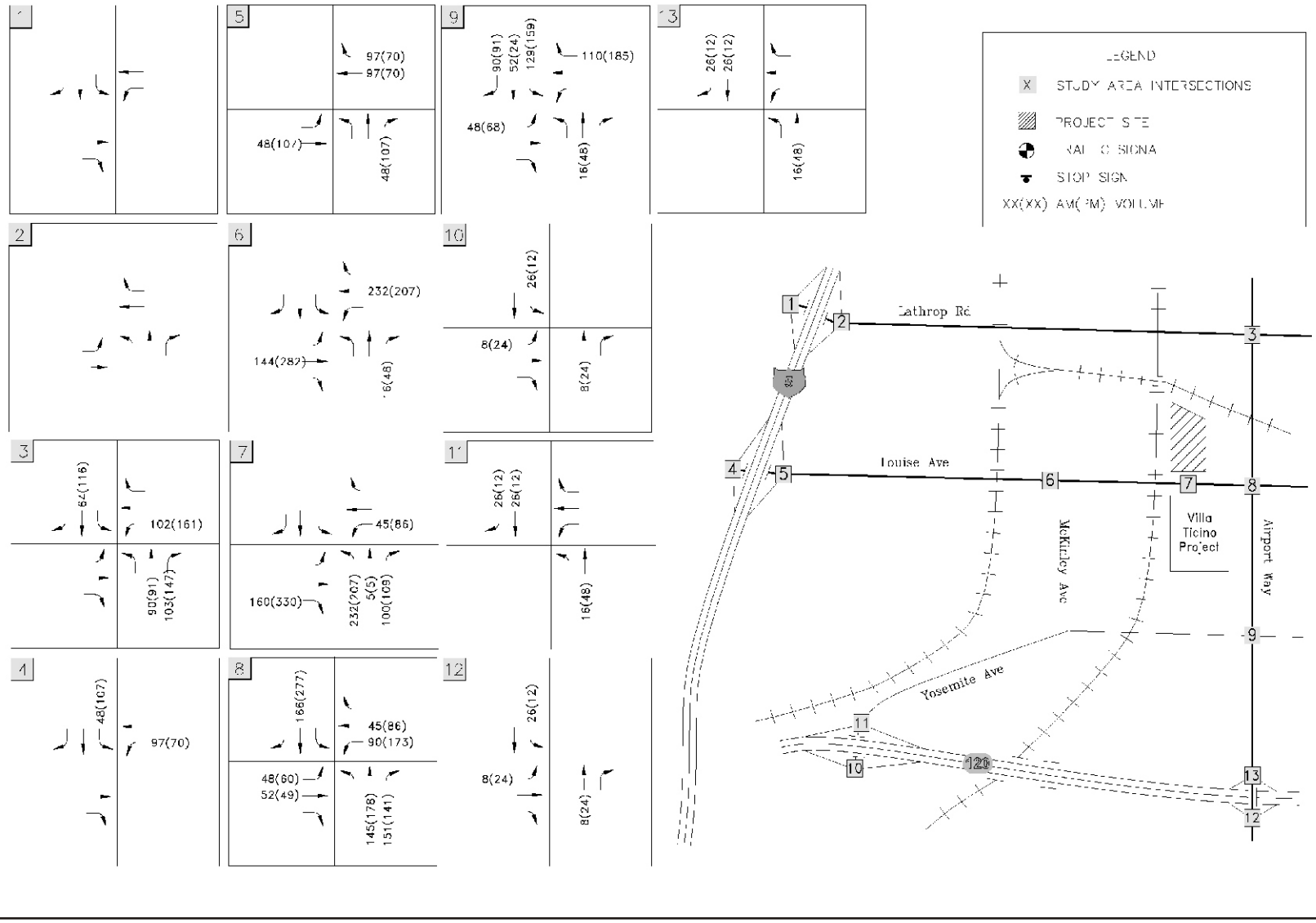
Many trips are expected to travel to/from I-5 and SR 120. These trips consist of a combination of light and heavy vehicles, many of which will be employees traveling to and from other Central Valley locations. Based on the geographic location of the project in relation to existing traffic patterns (as noted in turning movement counts), the likely employee and customer base for the site, major connections to principal arterials and freeways, and potential access limitations, a project traffic distribution was prepared as shown in Exhibit 4.2-7.

As mentioned, the distribution was founded on several considerations but ultimately was determined based upon the professional judgment of KHA. As shown in the distribution, nearly all the project traffic is conservatively assumed to reach freeways extending outside the city, with as much as 50 percent of project traffic expected to use I-5 and a large percentage of other project traffic directed to SR-120. In reality, the distribution is expected to be lower outside of the city due because some project traffic will be dispersed inside Manteca's and Lathrop's city limits. Exhibit 4.2-8 shows the project's trip assignment assuming a full movement intersection is created by aligning the Villa Ticino West access with the driveway for the AIDP. The volumes shown in Exhibit 4.2-8 are only related to the AIDP. Movements not showing volumes are not assumed to have project traffic

Near-Term Existing Plus Project

Existing traffic volumes and vehicle trips from the near-term Villa Ticino West development were combined with trips expected to be generated by the AIDP site. Exhibit 4.2-9 illustrates the near term existing conditions plus project traffic volumes at study intersections for the full movement scenario.

Table 4.2-5 presents a level of service summary for the near-term existing conditions with the implementation of the AIDP. These impacts are based on the assumption that the Villa Ticino West project is completed and the roadway will be realigned to match the location of the AIDP driveway. Further, it assumes that several roadway and signal projects will be constructed in the near term as a result of existing deficiencies and other development unrelated to the AIDP.



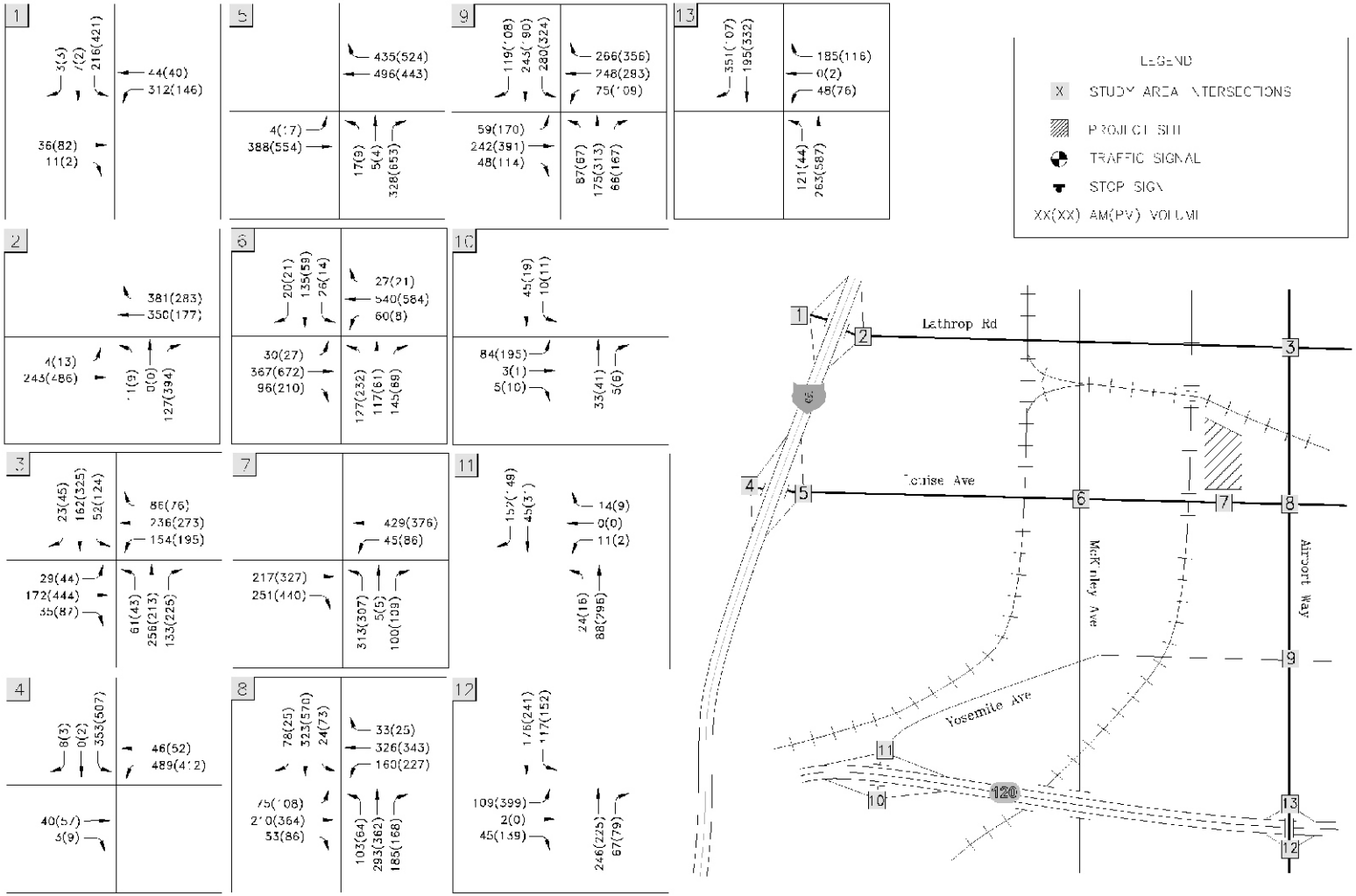
Source: Kimley-Horn and Associates, Inc., 2004.

NORTH NOT TO SCALE

Michael Brandman Associates

Exhibit **4.2-7**

Approved Development Generated Traffic Volumes



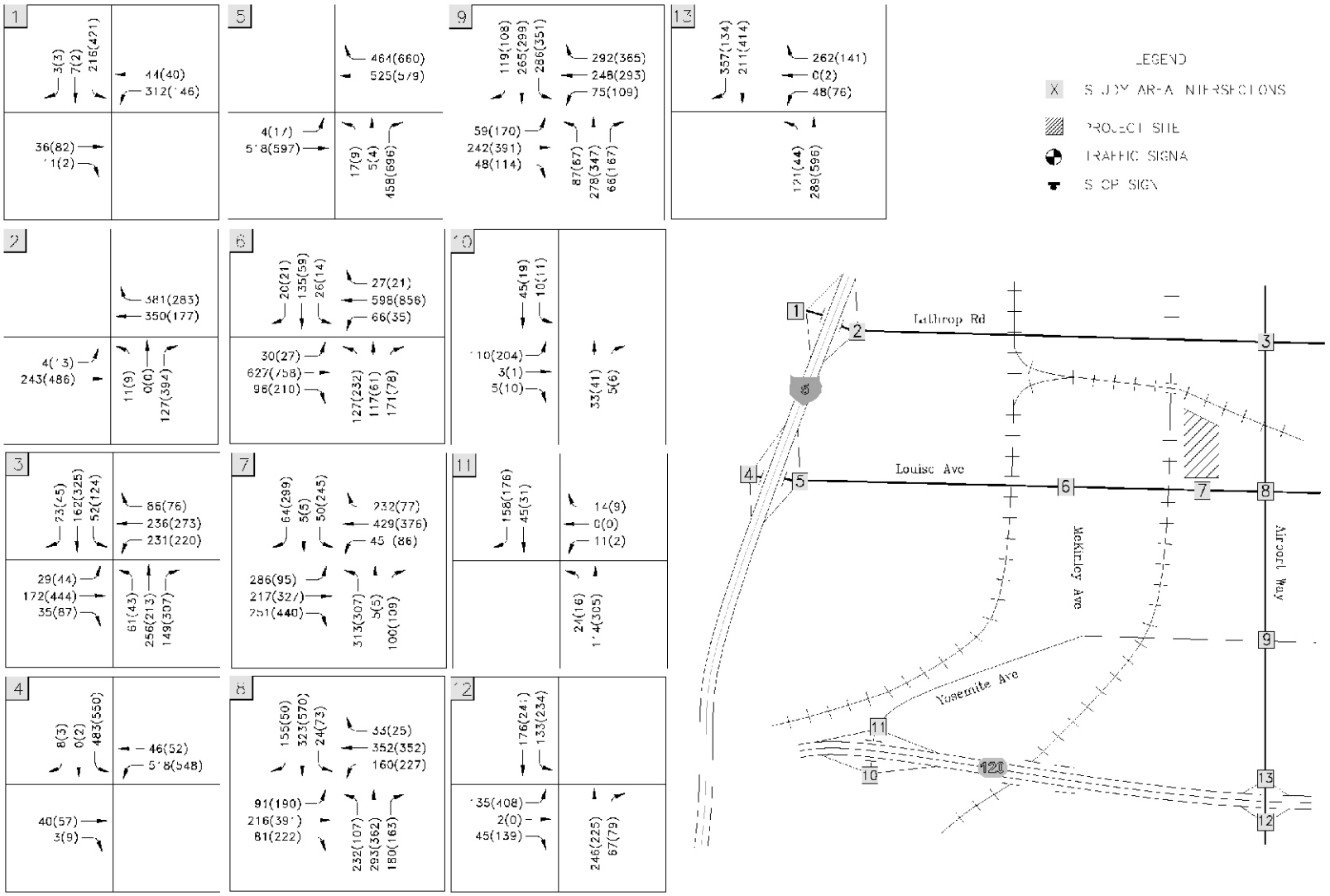
Source: Kimley-Horn and Associates, Inc., 2004.

NORTH

NOT TO SCALE

Exhibit **4.2-8**

Existing and Approved Development Traffic Volumes



Source: Kimley-Horn and Associates, Inc.

NOT TO SCALE

Exhibit **4.2-9**

Existing and Approved Development and Project Traffic Volumes

Michael Brandman Associates

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ASSIEH INDUSTRIAL DEVELOPMENT PROJECT - DRAFT EIR

Table 4.2-5: Near-Term Existing Plus Project Level of Service Summary

Peak Period		AM	PM
Signalized Intersections			
2	I-5 NB Ramps / Lathrop Road	A	A
3	Airport Way / Lathrop Road	C	**E**
4	I-5 SB Ramps / Louise Avenue	D	D
5	I-5 NB Ramps / Louise Avenue	B	D
6	McKinley Avenue / Louise Avenue	**E**	D
7	Project Driveway / Louise Avenue	C	C
8	Airport Way / Louise Avenue	C	D
9	Airport Way / Yosemite Avenue	C	C
12	Airport Way / SR-120 EB Ramps	B	C
13	Airport Way / SR-120 WB Ramps	B	A
Two-Way Stop Controlled Intersections			
1	I-5 SB Ramps / Lathrop Road Southbound Westbound Left	 **F** A	 **F** A
2	I-5 NB Ramps / Lathrop Road Northbound Eastbound Left	 — —	 — —
7	Project Driveway / Louise Avenue Northbound Westbound Left	 — —	 — —
10	Yosemite Avenue / SR-120 EB Ramps Eastbound Southbound Through-Shared-Left	 B A	 B A
11	Yosemite Avenue / SR-120 WB Ramps Westbound Northbound Through-Shared-Left	 B A	 B A
12	Airport Way / SR-120 EB Ramps Eastbound Southbound Left	 — —	 — —
13	Airport Way / SR-120 WB Ramps Westbound Northbound Left	 — —	 — —
All-Way Stop Controlled Intersections			
8	Airport Way / Louise Avenue	—	—
Source: Kimley-Horn Associates, Inc., May, 2004			

As shown in Table 4.2-5, future near-term operating conditions with the project are LOS D or better at 8 of the 10 signalized study intersections, assuming the project driveway is a signalized-shared, full-movement, access driveway. The following signalized intersections operate at LOS E in either

the AM or PM peak hours. Each intersection is listed and mitigation measures are recommended to improve the intersection operation to an acceptable level:

- ***Airport Way/Lathrop Road***
  This intersection is shown to operate at a LOS C in the AM peak hour and LOS E in the PM peak hour. To mitigate this poor operation level, an eastbound right turn bay of no less than 125-feet should be installed, improving the intersection operation to LOS D in the peak hour.
- ***McKinley Avenue/Louise Avenue***
  This intersection is shown to operate at a LOS E in the AM and at LOS D in the PM peak hours. To mitigate this poor operation level both a westbound and a southbound right turn bay should be installed measuring no less than 100-feet each. The installation of the southbound turn bay improves the intersection operation to LOS D in both the AM and PM peak hours.

The following movements at the unsignalized study intersections currently operate at LOS E or F:

- ***Lathrop Road/I-5 SB Ramps (Southbound approach)***
  The southbound approach will continue to operate at an unacceptable level of service, regardless of the AIDP. AIDP-related traffic is not anticipated to use the intersection; therefore, the congestion is a preexisting condition and no mitigation is necessary.

Although the analysis does not show a specific overall level of service deficiency at the Louise Avenue/Airport Way intersection, it is recommended that a separate eastbound right turn lane be constructed in the near-term at the intersection. The AIDP will generate in excess of 130 eastbound right turn vehicles at the intersection in addition to other traffic. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the AIDP and other turning traffic, the right turn lane should be 200 feet in length.

Mitigation Measures

4.2-B-1: At the intersection of Airport Way and Lathrop Road, construct a 125-foot eastbound right turn bay to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection.

4.2-B-2: At the intersection of McKinley Avenue and Louise Avenue, construct a 100-foot westbound and a 100-foot southbound right turn bay to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection.

4.2-B-3: At the intersection of Louise Avenue and the project driveway, install an 8-phase traffic signal at the intersection to improve the operation to LOS C in the AM and PM. Based on the proportion of AIDP traffic compared with Villa Ticino West project, the AIDP project shall pay 52 percent and the Villa Ticino West project shall pay 48 percent of the total design and construction costs.

Level of Significance After Mitigation

With the implementation of the mitigation measures above, the AIDP is considered to have less than significant transportation and circulation impacts.

Impact 4.2-C: The AIDP may result in internal circulation impacts. (Less than Significant Impact)

TJKM Transportation Consultants performed an internal circulation analysis in April 2003. TJKM concluded that based on the project design plans, passenger cars with an outer turning radius of 24 feet will not have any difficulty entering and/or exiting the main entrance along Louise Avenue and

the individual parking lots for the six warehouse structures/nine warehouses buildings. Additionally, the analysis indicates that the large semi-trailer trucks with an outer turning radius of 45-feet can access the docking ramps at all nine warehouse locations and that trucks with a 45 to 60-feet outer turning radius should be able to make U-turns relatively easily at the end of the proposed cul-de-sac. Over 700 feet of queuing/stacking distance is provided between Louise Avenue and the first warehouse/docking ramp entrance and another 800 feet is provided between the first and second warehouse/docking ramp entrance. Overall more than 2,000 feet of queuing is available onsite before the public street is affected from parking, waiting or circling trucks. Based on the TJKM evaluation, no access or onsite deficiencies are anticipated.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No internal circulation impacts are anticipated; thus, the AIDP is considered to have less than significant internal circulation impacts.

4.3 - Air Quality

This section is based upon the findings of the Air Quality Analysis prepared for the Assieh Industrial Development Project (AIDP) by VRPA Technologies in December 2003. The report is included in its entirety in Appendix C of this document.

4.3.1 - Environmental Setting

Relevant Goals and Policies

The following goals of the Manteca General Plan Update 2023 Air Quality Element are applicable to the AIDP:

Goals

AQ-1: Improve air quality by:

- Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency, the California Air Resources Board, and the San Joaquin Air Pollution Control District;
- Minimizing exposure to toxic or hazardous air pollutants; and
- Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors.

AQ-2: Integrate air quality planning with land use and transportation planning processes to reduce vehicle miles traveled in the City and by commuters.

AQ-4: Reduce air emissions through energy conservation.

Implementing Policies

AQ-I-2: In accordance with CEQA, submit development proposals to the APCD for review and comment prior to decision.

AQ-I-9: Maintain acceptable levels of service (LOS) as specified in the Circulation Element.

AQ-I-12: Construction activity plans shall include and/or provide for a dust management plan to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.

- Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.

AQ-I-15: Design review criteria shall include the following considerations, at a minimum:

- The developer of a sensitive air pollution receptor shall submit documentation that the project design includes appropriate buffering (e.g., setbacks, landscaping) to separate the uses from highways, arterial streets, hazardous material locations and other sources of air pollution.
- Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible.
- The use of energy efficient lighting (including controls) and process systems beyond Title 24 requirements shall be encouraged where practicable (e.g., water heating, furnaces, boiler units, etc.).
- The use of energy efficient automated controls for air conditioning beyond Title 24 requirements shall be encouraged where practicable.
- Promote solar access through building siting to maximize natural heating and cooling and landscaping to aid passive cooling and to protect from winds.

Guiding Policies

AQ-P-3: Segregate and provide buffers between land uses that typically generate hazardous or obnoxious fumes and residential or other sensitive land uses.

AQ-P-7: New construction will be managed to minimize fugitive dust and construction vehicle emissions.

AQ-P-10: Encouraging energy efficient building designs

Regional Setting

The Sierra Nevada Mountain Range surrounds San Joaquin County to the east and the Coastal Range toward the west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the San Joaquin Valley (Valley); thereby, preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in San Joaquin County is classified as Mediterranean, with moist cool winters and dry warm summers.

Light winds and atmospheric stability provides frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations. The prevailing winds during the summer are from the north and west. These winds, known as "up-valley winds," originate with coastal breezes that enter the Valley through breaks in the coastal ranges, particularly through the Carquinez Straits in the San Francisco Bay Area.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. San Joaquin County and the City of Manteca are occasionally influenced by precursors emitted in the San Francisco Bay Area; however, sources within the Valley are considered to be a greater influence under most conditions. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, CO for example, may form high concentrations when wind speed is low. During the winter, Manteca experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in San Joaquin County are conducive to the containment of air pollutants.

Air Pollution Sources and Current Air Quality

The San Joaquin Valley Air Pollution Control District (District) is the agency empowered to regulate air pollutant emissions. The District regulates air quality through its permit authority for most types of stationary emission sources and through its planning and review activities for other sources.

Federal and California ambient air quality standards have been established for the following five critical pollutants: nitrogen dioxide, sulfur dioxide, particulate, carbon monoxide, and ozone. Ozone pollution is the most conspicuous type of air pollution, and is often characterized by visibility-reducing haze, eye irritation, and high oxidant concentrations (i.e., "smog").

In general, there are four major sources of air pollutant emissions in the San Joaquin Valley Air Basin (SJVAB): motor vehicles, industrial plants, agricultural activities, and construction activities. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). Finally, urban areas upwind from San Joaquin County can cause or generate transported emissions from all four-pollutant sources into the Manteca area.

The principal factors that affect air quality in and around San Joaquin County are: a) the *sink effect*, climatic subsidence and temperature inversions and low wind speeds; b) *automobile and truck travel*; and c) increases in mobile and stationary pollutants generated by *local urban growth*.

Applicable Federal and State standards for each regulated pollution category, compared to monitoring data for the closest monitoring site, is provided in Table 4.3-1. The applicable standard for each pollution category, for environmental documentation purposes (i.e., identification of significant impacts), is whichever are the most stringent of the Federal and State standards. Based upon information provided in Table 4.3-1, the City of Manteca and San Joaquin County are in non-attainment for ozone and PM_{10}.

Table 4.3-1: Federal and State Standards for Nonattainment

Pollutant	Averaging Time	Applicable Standard	Monitoring Station	
			First High	Second High
Ozone*	Max. Hourly High	0.09 ppm State 0.12 ppm Federal	.108 ppm	.106 ppm
Carbon Monoxide (CO)	Max. 9-hour High Standard Violation	9.0 ppm State/Federal	3.21 ppm	3.16 ppm
	Max. 1-hour High Standard Violation	20.0 ppm State 35.0 ppm Federal	4.3 ppm	4.0 ppm
Particulate (PM_{10})	Geometric Mean 24-hour High	30.0 g/m^3 State 50.0 g/m^3 State	31.0 g/m^3 87.0 g/m^3	30.0 g/m^3 78.0 g/m^3

*Note: The monitoring site for ozone is located in the City of Stockton, which is in San Joaquin County.
First and second highest annual data used. All other data was taken from the monitoring site at Stockton-Hazelton Street in Stockton.
CO monitoring site is in San Joaquin County.
Source: California Air Resources Board, *Air Quality Data Summary*, 2002.

Ozone Emissions

The most severe air quality problem in the SJVAB is the high level of ozone. Ozone can cause eye irritation and impair respiratory functions. Accumulations of ozone depend heavily on weather patterns and thus vary substantially from year to year. Ozone is produced in the atmosphere through photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides (NO_x). Numerous small sources throughout the region are responsible for most of the ROG and NO_x emissions in the Basin. The Federal 8-hour ozone standard has been exceeded an average of sixty-six (66) times per year over the past three years in San Joaquin County.

Suspended PM_{10} Emissions

PM_{10} refers to particulate matter less than 10 microns in diameter - those that can be inhaled and cause health effects. Common sources of particulate include demolition, construction activity, agricultural operations, traffic and other localized sources such as fireplaces. Very small particulate

of certain substances can cause direct lung damage or contain absorbed gases that may be harmful when inhaled. Particulate can also damage materials and reduce visibility. Twenty-four hour PM_{10} standards are exceeded occasionally at the San Joaquin monitoring station (the standard was violated on 198 days in the past three years). The annual geometric mean have also been exceeded during that same time frame.

Carbon Monoxide (CO)

Because CO is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. The California Air Resources Board (CARB) found CO standards in San Joaquin County in attainment of Federal and State standards on March 31, 1998.

Nitrogen Dioxide (NO_2)

The major sources of nitrogen dioxide (NO_2) essential to the formation of photochemical smog are vehicular, residential, and industrial fuel combustion. NO_2 is the "whiskey brown" colored gas evident during periods of heavy air pollution. NO_2 increases respiratory disease and irritation and may reduce resistance to certain infections. The standards for NO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials, and reduce visibility. The standards for SO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Lead (Pb)

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Lead can cause blood effects such as anemia and the inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline continues to increase. The standards for lead are being met in the SJVAB and the District does not expect that the standards will be exceeded in the future.

Air Quality Standards

The Federal Clean Air Bill, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. Other Federal Clean Air Bill Amendments (FCAA), passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the California Clean Air Act (CCAA, State 1988 Statutes, Chapter 1568) that established more stringent State ambient air quality standards, and set forth a program for their achievement. State air basins are established by the CARB. CARB implements State ambient air quality standards, as required in the State CCAA, and cooperates with the Federal government in implementing pertinent sections of the Federal Clean Air Bill, Amendments. Further, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the State.

The District is the agency responsible for monitoring and regulating air pollutant emissions from stationary areas and indirect sources within San Joaquin County and throughout the SJVAB. The

District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The U.S. Environmental Protection Agency (EPA) is responsible for enforcement of the provisions of the Federal Clean Air Bill Amendments. Based on the provisions contained in the 1990 amendment, EPA designated the entire San Joaquin Valley as non-attainment for two pollutants: ozone and particle matter less than 10 microns in size or PM_{10}. More recently, on October 23, 2001, the EPA reclassified the San Joaquin Valley ozone non-attainment area from its previous serious status to "severe" because the Valley failed to attain the health-based, 1-hour national Ambient Air Quality Standard for ozone by the Clean Air Act deadline of November 15, 1999. Since Manteca is located within the San Joaquin Valley, it is considered to be in non-attainment of ozone and PM_{10} standards.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, State air quality standards are met.

Existing Transportation Control Measures (TCMs) and Air Quality Mitigation Programs/ Policies

Until the passage of the CCAA, the primary role of air districts throughout California was control of stationary sources of pollution such as industrial processes and equipment. With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and are encouraged to adopt indirect source control programs to reduce area source emissions. These mandates created the need for the District to work closely with cities, counties, and regional transportation planning agencies (RTPAs) to develop new programs.

District Air Quality Attainment Plan

The District AQAP - TCMs were developed by the District with assistance from the RTPAs. The TCMs fall into several categories including mobility improvements, trip reduction programs, and user incentives, among others.

This joint effort culminated in the development and subsequent adoption of the eleven TCMs listed below.

- Alternative Work Schedules
- Bicycling
- Fleet Operators Alternate Fuels Program
- Park-and Ride Lots
- Parking Management
- Passenger Rail
- Public Transit
- Rideshare Program
- Telecommunications
- Traffic Flow Improvements
- Trip Reduction Programs

San Joaquin Valley TCM Program

The District, in association with the Valley RTPAs, prepared Phase I of the Valley-wide TCM Program. The District adopted the Program in March 1994. The Program is intended to address CARB comments provided to the District during review of the adopted AQAP TCMs and to further

describe how the TCMs will be implemented, monitored, and enforced. The TCM Program also identifies which TCMs are applicable to specific types of jurisdictions within the Valley.

Rate of Progress Plans

Various TCMs that have been incorporated into the Rate of Progress (ROP) Plans, or have been identified by the regional transportation planning agency (San Joaquin Council of Governments) to provide for positive air quality conformity findings associated with the 2001 San Joaquin Council of Governments' Regional Transportation Plan (RTP) and the Federal Transportation Improvement Program (FTIP).

4.3.2 - Project Impacts and Mitigation Measures

Thresholds of Significance

According to the California Environmental Quality Act (CEQA), a project will normally have a significant adverse impact on air quality if it will "violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations."

For regional pollutants such as ozone, PM_{10}, sulfur dioxide or nitrogen dioxide, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. For non-attainment pollutants (ozone precursors or PM_{10}), any net increase in regional emissions is considered significant.

For localized pollutants, such as carbon monoxide, an increase in concentrations that would result in a predicted violation of the most stringent State or Federal standard (20.0 parts per million (PPM) for 1-hour or 9.0 PPM for 8-hours) is considered to represent a significant impact. This assessment provides for these types of localized area pollutant impact analysis; street and highway improvements and traffic volumes and construction impacts.

For purposes of this environmental assessment, an impact is considered significant if one or more of the following conditions occur from implementation of the project:

- Regional air quality emission exceed standards;
- Local air quality emission exceed standards;
- Significant construction related air quality impacts occur; and/or
- Objectionable odors are created.

Additionally, for regional pollutants such as ozone and PM_{10}, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. The District has established interim thresholds for certain pollutants, as identified in Table 4.3-2.

Table 4.3-2: SJVAPCD Interim Emission Thresholds

Non-Attainment Pollutant	Minimum Threshold (Tons/Year)
NO_x	10
ROG	10
PM_{10}	15
Source: VRPA Technologies, May 2004.	

For localized pollutants, such as CO, an increase in concentrations that would result in a predicted violation of the most stringent State or Federal standard, (20.0 PPM for 1-hour or 9.0 PPM for 8 hours), is considered to represent a significant impact.

Impact Analysis
The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.3-A: Implementation of the AIDP is consistent with the relevant air quality goals and policies of the Manteca General Plan Update 2023 and the applicable air quality plans. (Less than Significant Impact)

The AIDP is consistent with the growth projections of the City of Manteca General Plan Update 2023 and will result in the development of approximately 1,400,000 square feet of industrial warehouse land uses. During the construction phase of the AIDP, several mitigation measures will be implemented that will reduce fugitive dust and construction-related air emissions. Moreover, during the long-term, as identified in Section 4.2 Transportation and Circulation, of this DEIR, with mitigation, the study area intersections will operate an acceptable level of service. During design review for the AIDP, applicable considerations will be recommended by the City to ensure energy efficiency and incorporate appropriate buffering from sensitive air pollutant receptors.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
The AIDP is considered to have a less than significant impact on relevant air quality goal and policies of the Manteca General Plan Update 2023 and applicable air quality plans.

Impact 4.3-B: Short-term construction will result in generating temporary air quality impacts. (Less than Significant After Mitigation)

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities comprise major sources of construction dust emissions, but traffic and general disturbance of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

The adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the project area and may require frequent washing during the construction period. Further, asphalt paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone.

PM_{10} emissions can result from construction activities of the project. The SJVAPCD requires implementation of effective and comprehensive control measures, rather than a detailed quantification of emissions. The SJVAPCD has determined that compliance with Regulation VIII for all sites and other control measures will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant.

Mitigation Measures

Manteca General Plan Update 2023 Mitigation Measures

AQ-I-12: Construction activity plans shall include and/or provide for a dust management plan to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.

- Project development applicants shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.

AQ-P-7: New construction will be managed to minimize fugitive dust and construction vehicle emissions.

Project-Related Mitigation Measures

In addition to compliance with the Manteca General Plan Update 2023 policies, as they relate to air quality, the following mitigation measures are recommended to reduce project related air quality impacts:

4.3-B-1 All active portions of the construction site, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used.

4.3-B-2 All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour.

4.3-B-3 All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.

4.3-B-4 The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass is evident.

4.3-B-5 Construction site vehicle speeds shall be limited to 15 miles per hour.

4.3-B-6 If used, petroleum-based dust palliatives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials.

4.3-B-7 Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping.

4.3-B-8 All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications.

4.3-B-9 During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time.

4.3-B-10 When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines.

4.3-B-11 Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways.

Level of Significance After Mitigation

With the implementation of the recommended mitigation measures, the project is considered to have less than significant construction phase impacts.

Impact 4.3-C: Implementation of the AIDP will result in an increase in traffic generation in the project area, which will result in the generation of air pollution emissions during the project's operational phase. (Less than Significant Impact After Mitigation)

The assessment of operational impacts includes an analysis of regional mobile and area source impacts and street and highway traffic impacts.

Operational - Regional Mobile and Area Source

To assess the impacts of increased traffic generated by this project and other planned developments, an analysis of existing peak hour volumes was developed. The trip assignments for the project were extrapolated from the Traffic Impact Analysis prepared by Kimley-Horn Associates, Inc. (May 2004).

Table 4.3-3 identifies the regional mobile source emissions and the area source operations emissions associate with the AIDP.

Table 4.3-3: Regional and Area Source Emissions[1]

Land Use	Units/Sq. Ft.	ROG	NOx	PM_{10}
Regional Mobile Source Emissions (lbs. Per day) [1] Warehouse	1,404.68 x 10^3 sq. ft	18.27	13.87	3.15
Area Source Operations Emissions (lbs. per day)[2] Warehouse	1,404.68 x 103 sq. ft	0.08	0.01	0.00
Total Emissions (lbs. Per day) Warehouse	1,404.68 x 103 sq. ft	18.35	13.88	3.15
Total Emissions (tons per year) Warehouse	1,404.68 x 103 sq. ft	3.04	2.95	0.57

Methodology for operating emissions was provided from SCAQMD CEQA Air Quality Handbook.
[1] Mobile Sources Emissions calculated using URBIMIS 2001 model.
[2] Area Source Emissions include Stationary Sources.
Source: VRPA Technologies, May 2004.

As indicated in Table 4.3-3, the AIDP will not result in producing emissions that exceed the established SJVAPCD interim thresholds (see Table 4.3-2).

CO Hotspot Analysis

Table 4.3-4 and 4.3-5 identify the results of the CO hotspot analysis.

Table 4.3-4: Local Roadway Air Quality Segment Analysis AM Existing with Project (1 hour and 8 hour CO concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	Description	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	4.03	3.21	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.2	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	4.9/4.4	3.8/3.5	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	4.3	3.4	No/No	No/No
Source: VRPA Technologies, May 2004.									

Table 4.3-5: Local Roadway Air Quality Segment Analysis PM Existing with Project (1 hour and 8 hour CO concentration)

Receptors		Air Quality Standards				Air Quality Levels For Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
#	Description	Federal		State					
		1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	4.03	3.21	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	6.9/7.1	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	6.5	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	5.1	3.3	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	5.9/5.1	4.1/3.3	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	6.1	3.4	No/No	No/No
Source: VRPA Technologies, May2004.									

Mitigation Measures

This analysis does not identify any potentially significant impacts to air quality that will result from implementation of the AIDP (area source and mobile emissions). The air quality analysis contains adequate measures that may mitigate project-specific impacts to less than significant levels. However, since the project is located in a non-attainment area for certain pollutants, VRPA

Technologies recommends additional mitigation measures be incorporated into the project in order to minimize the area and mobile source emissions associated with the AIDP:

4.3-C-1: The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions.

4.3-C-2: Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits.

4.3-C-3: Implementation of planned street and highway, transit, and bikeway improvements (as specified in the Transportation Impact Analysis) adjacent to the project site necessary to relieve congestion and reduce idling.

4.3-C-4: Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all commercial/residential developments.

4.3-C-5: Use of HVAC equipment with a SEER of 12 or greater.

4.3-C-6: Provide pedestrian/transit oriented project design.

4.3-C-7: Commit to on-site improvements; bikeways, transit infrastructure, pedestrian enhancements.

4.3-C-8: Contribute towards TCM implementation programs.

Level of Significance After Mitigation

The AIDP will have less than significant operational, regional, mobile, and area source impacts.

4.4 - Noise

VRPA Technologies prepared a Noise Assessment for the Assieh Industrial Development Project (AIDP) in December 2003. The information presented in this section is a summary of the findings and recommendations of the Noise Assessment. The Noise Assessment is included in its entirety in Appendix D of this DEIR.

4.4.1 - Environmental Setting

Relevant Goals and Policies

The following Manteca General Plan Update 2023 Noise Element goals and policies are applicable to the AIDP:

Goals

N-1: Protect the residents of the City of Manteca (City) from the harmful and annoying effects of exposure to excessive noise.

N-4: Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.

N-5: Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

Guiding Policies

N-P-1: Areas within the City exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table 4.4-1 shall be designated as noise impacted areas.

Table 4.4-1: Maximum Allowable Noise Exposure Mobile Noise Sources

Land Use [4]	Outdoor Activity Areas [1]	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB [3]
Residential	60 [2]	45	—
Transient Lodging	60 [2]	45	—
Hospitals, Nursing Homes	60 [2]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Music Halls	60 [2]	—	40
Office Buildings	65	—	45
Schools, Libraries, Museums	—	—	45

Table 4.4-1 (Cont.): Maximum Allowable Noise Exposure Mobile Noise Sources

Land Use [4]	Outdoor Activity Areas [1]	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB [3]
Playgrounds, Neighborhood Parks	70	—	—

[1] Outdoor activity areas for residential development are considered to be backyard patios or decks of single-family dwellings, and the patios, balconies or common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] In areas where it is not possible to reduce exterior noise levels to 60 db Ldn or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 Ldn will be allowed.

[3] Determined for a typical worst-case house during periods of use.

[4] Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.

Source: VRPA Technologies, May 2004.

N-P-4: The City shall require stationary noise sources proposed adjacent to noise sensitive land uses to be mitigated so as not to exceed the noise level performance standards in Table 4.4-2.

Table 4.4-2: Performance Standards for Stationary Noise Sources or Projects Affected by Stationary Noise Sources [1 2]

Noise Level Descriptor	Daytime	Nighttime
	7 AM to 10 PM	10 PM to 7 PM
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

[1] Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noise. Such noises are generally considered by residents to be particularly annoying and are a primarily source of noise complaints.

[2] No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

Source: VRPA Technologies, May 2004.

N-P-7: Noise level criteria applies to land uses other than residential or other noise-sensitive uses shall be consistent with noise performance levels of Tables 4.4-1 and 4.4-2)

Implementing Policies

N-I-3: In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:

- The resulting noise levels;
- The duration and frequency of the noise;
- The number of people affected;

- The land use designation of the affected receptor sites;
- Public reactions or controversy as demonstrated at workshops or hearings, or by correspondence; and
- Prior CEQA determinations by other agencies specific to the project.

N-I-4: Control noise at the source through the use of insulation, berms, building design and orientation, buffer space, staggered operating hours and techniques. Use noise barriers to attenuate noise to acceptable levels.

Noise Measurement Scales

The standard unit of measurement of the loudness of sound is the decibel (dB). Community noise levels are measured in terms of the A-weighted decibel, which is abbreviated dBA. Typical human hearing can detect changes in sound levels of approximately 3 dBA under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is discernable to most people in an exterior environment while a change of 10 dBA is perceived as doubling of the noise. Several rating scales exist to analyze the adverse effects of noise on a community. The following measurements are used to define noise levels:

Day/Night Level (DNL) - The DNL is the 24-hour average level as measured in decibels with an added penalty for people's increased sensitivity to noise at night from 10 PM to 7 AM. The Environmental Protection Agency (EPA) identifies 45 DNL indoor and 55 DNL outdoor as the desirable maximum level of noise.

Equivalent Sound Level (Leq) - The Leq is the measurement of sound energy over a specified time, usually one hour. Leq represents the amount of variable sound energy received by a receptor over a timed interval in a single numerical value. For example, a 1-hour Leq noise level measurement represents the average amount of acoustical energy that occurred in one hour.

Community Noise Equivalent Level (CNEL) - The CNEL noise metric is based upon 24 hours of measurement, the CNEL measurement applies a time weighted factor that is designed to emphasize noise events that occur during the evening (7 PM to 10 PM) and nighttime (10 PM to 7 AM) hours. Noise produced during the evening hours are penalized by 5 dBA while noise that occurs during the nighttime hours is penalized by 10 dBA.

Table 4.4-3 identifies the noise abatement criteria as referenced in the Federal Code of Regulations Title 23 Part 772.

Table 4.4-3: Noise Abatement Criteria (Hourly A-Weighted Sound Level)

Activity Category	Leq(H)	L10(h)	Activity
A	57 (exterior)	60 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	70 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.

Table 4.4-3 (Cont.): Noise Abatement Criteria (Hourly A-Weighted Sound Level)

Activity Category	Leq(H)	L10(h)	Activity
C	72 (exterior)	75 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	—	—	Undeveloped lands
E	52 (interior)	55 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.
Source VRPA Technologies, May 2004.			

Existing Noise Setting

VRPA compiled current traffic counts and existing geometric conditions. VRPA also identified existing sensitive noise receptors along the subject corridor and field measured the existing noise levels during peak hours of traffic at these locations to calibrate modeling efforts. Existing noise sources in the area include airplanes, trains, and traffic.

VRPA took measurements at the following locations (see Exhibit 4.4-1):

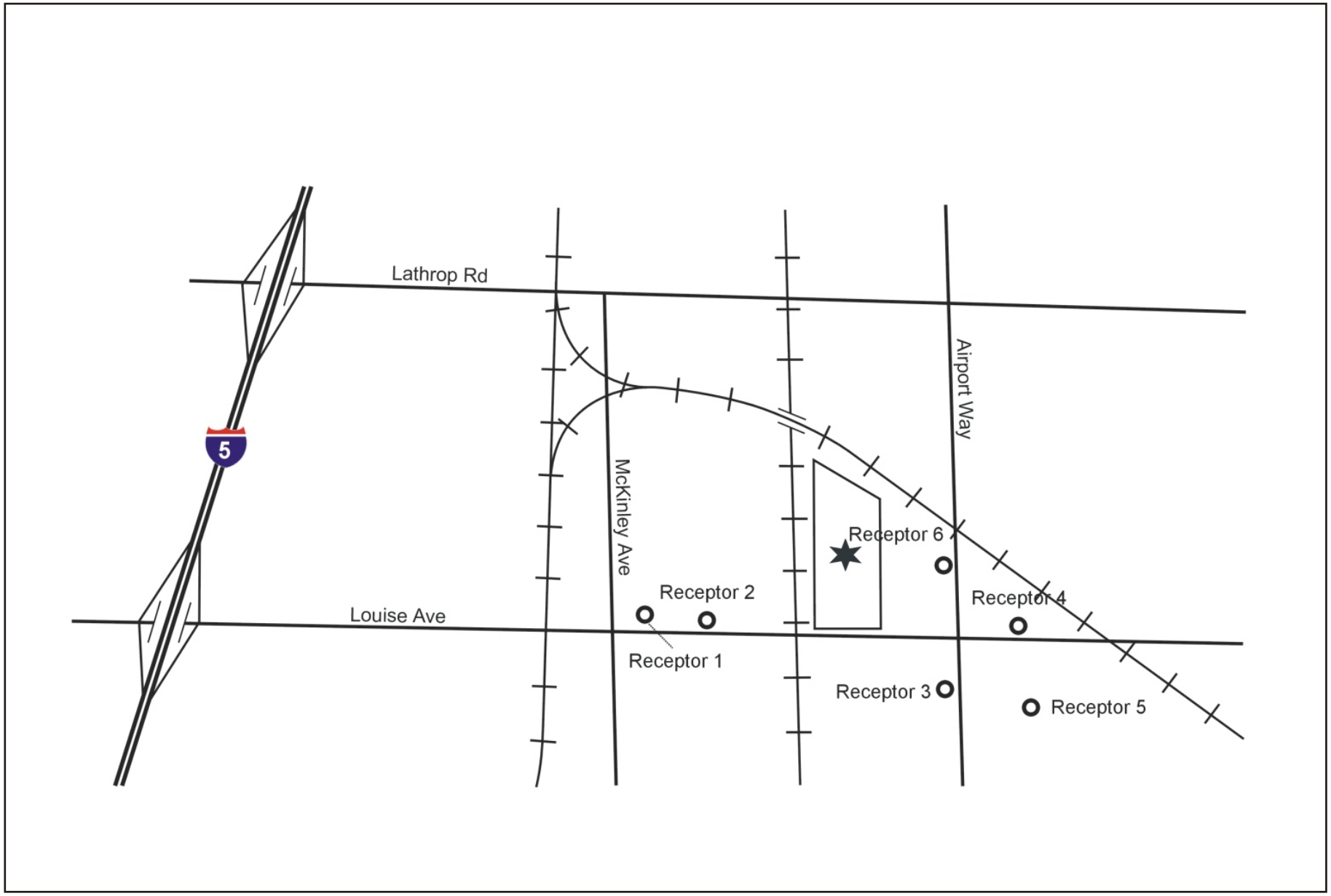
- Residence at 2075 Louise (Receptor 1);
- Educational offices between Louise and Airport Way (Receptor 2);
- Residence at 891 Airport Way (Receptor 3);
- Residence at 3399 Louise (Receptor 4);
- Residence at end of cul-de-sac north of Geneva Way (Receptor 5); and
- Residence at 15887 Airport Way (Receptor 6)

Results of the noise analysis along the existing street and highway system in the project area are reflected in Table 4.4-4.

Table 4.4-4: Noise Impacts for Existing and Existing With Project

Receptor	Existing Ldn
1. Residence at 2075 Louise	67.5
2. Office Located on Louise	71.7
3. Residence at 891 Airport Way	71.3
4. Residence at 3399 Louise	66.7
5. Residence on cul-de-sac north of Geneva Way	57.5
6. Residence at 15887 Airport Way	65.7
Source VRPA Technologies, May 2004.	

Results of the analysis indicate that Receptors 2 and 3 along the project corridor are currently above the Noise Abatement Criteria in the Activity Category B (see Table 4.4-3). Moreover, in accordance with the City of Manteca General Plan Update 2023 policy N-P-1, the site is considered a noise impacted area.



Source: VRPA Technologies, Inc.

NORTH NOT TO SCALE

Michael Brandman Associates

24820001 • 12/2003 | receptor locaitons.cdr

Exhibit **4.4-1**
Receptor Locations

4.4.2 - Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have a significant noise related impact if project related activities result in:

- Exposing persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or other applicable standards of other agencies;
- Expose persons to or generation of excessive groundbourne vibration or groundbourne noise levels; or
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (4 dBA or greater); or
- A substantial temporary increase or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.4-A: Implementation of the AIDP is not consistent with the relevant noise goal and policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

A noise assessment has been prepared for the AIDP which concluded that there is no feasible noise mitigation to reduce cumulative noise impacts to levels that are considered less than significant. The AIDP will result in exposing persons to or generation of noise levels in excess of standards established in the City of Manteca General Plan Update 2023. Moreover, the noise levels exceed the noise abatement criteria identified in Table 4.4-3. Thus, the AIDP is not considered consistent with the relevant noise policies of the City of Manteca General Plan Update 2023.

Mitigation Measures

There is no feasible mitigation.

Level of Significance After Mitigation

The AIDP is considered to have a significant and unavoidable impact on relevant noise goal and policies of the City of Manteca General Plan Update 2023.

Impact 4.4-B: The AIDP will result in short-term noise impacts during construction-related activities. (Less than Significant After Mitigation)

Construction noise impacts are considered short-term impacts since they occur only during periods of project construction. Earthmoving, materials handling, stationary equipment, and impact equipment and vehicles will generate noise during clearing, excavation, grading, and construction operations associated with the AIDP.

Actual noise levels generated by equipment will vary hourly, daily, and weekly since the numbers and types of equipment will vary. Possible noise generators include diesel powered motor graders, tractors, forklifts, loaders, rollers, asphalt pavers, generators, flatbed trucks, and delivery trucks.

Mitigation Measures

Project Mitigation Measures

4.4-B-1: All construction shall comply with standard City conditions regarding allowable times of construction, properly operating mufflers, location of staging areas away from sensitive uses where feasible, notification of nearby residents of pile driving, etc. These include the following:

- Construction activities shall be limited 7 AM to 7 PM (Monday through Friday), 9 AM to 5 PM (Saturday), and no construction activities on Sunday or holidays for any construction within 500 feet of existing residences;
- All internal combustion engines for construction equipment shall be properly muffled and maintained;
- Notification of nearby residents (within 500 feet) when pile driving is expected;
- A name, address, and phone number of a contact person that will handle noise complaints, shall be posted at the site;
- Installation of portable acoustical barriers around pile driving equipment; and
- Unnecessary idling of internal combustion engines shall be prohibited.

Level of Significance After Mitigation

Compliance with the recommended project related mitigation measures will reduce short-term construction impacts to levels that are considered less than significant.

Impact 4.4-C: The AIDP will generate additional daily trips within the project area, which may result in traffic-related noise levels that exceed established standards. (Less than Significant Impact)

Currently, the noise levels in the AIDP area exceed the standards set forth in the City of Manteca General Plan Update 2023 and the established noise abatement criteria. Project-related noise impacts were analyzed using the Sound32 model. As identified in Table 4.4-5, when project-related noise is added to the existing noise environment, the maximum noise increase is 2.3 dBA. A significant impact is considered to occur when a project results in an increase of 4 dBA or more; thus, the AIDP is not considered to result in a significant increase in noise levels above existing conditions.

Table 4.4-5: Project-Related Noise Impacts

Receptor	Existing	Existing with Project	Difference
1. Residence at 2075 Louise	67.5	69.7	2
2. Office Located on Louise	71.7	73.7	2
3. Residence at 891 Airport Way	71.3	73.5	2.2
4. Residence at 3399 Louise	66.7	68.9	2.2
5. Residence on cul-de-sac north of Geneva Way	57.5	59.8	2.3
6. Residence at 15887 Airport Way	65.7	67.8	2.1
Source: VRPA Technologies, May 2004.			

Mitigation Measures

The AIDP will not result in increasing the noise levels of the project area by what is considered significant (4 dBA or greater); thus, no mitigation measures are required.

Level of Significance After Mitigation

The AIDP will result in less than significant noise impacts.

4.5 - Hydrology and Water Quality

The information presented in this section is based, in part, on the hydraulic capacity evaluation prepared for the San Joaquin Irrigation District's French Camp Outlet Canal and the City of Manteca's Storm Drainage Master Plan. Both documents are available for review at the City of Manteca Community Development Department.

4.5.1 - Environmental Setting

Relevant Goals and Policies

The City of Manteca General Plan Update 2023 contains the following Public Facilities Element Major Drainage goal and policies, which are applicable to the AIDP:

Goal

PF-9: Maintain an adequate level of service in the City of Manteca (City) drainage system to accommodate runoff from existing and projected development and to prevent property damage due to flooding.

Guiding Policies

PF-P-25: The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of storm water from each development.

PF-P-26: Storm drainage systems within new development areas shall include open drainage corridors where feasible to supplement or replace an underground piped drainage system. The drainage systems would provide for short-term storm water detention, storm water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the storm water management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to rather than backing the open space corridor.

The Manteca General Plan Update 2023 contains the following Resource Conservation Element Water Quality goal and policies, which are applicable to the AIDP:

Goal

RC-7: To protect water quality in the San Joaquin River and in the area's groundwater basin.

Guiding Policies

RC-P-3: The City shall protect the quantity of Manteca's groundwater.

RC-P-10: Minimize sedimentation and loss of topsoil from erosion.

RC-P-11: Minimize pollution of waterways and other surface water bodies from urban runoff.

RC-P-12: Protect the quality of Manteca's groundwater.

Implementing Policies

RC-I-20: The City shall not approve new industrial or commercial development that has a significant potential for adversely affecting water quality in the San Joaquin River in the area's groundwater basin.

RC-I-24: Utilize cost-effective urban runoff controls, including Best Management Practices (BMPs), to limit pollutants from entering water courses.

RC-I-25: Comply with the Regional Water Quality Control Board's regulations and standards to maintain and improve groundwater quality in the City.

Hydrology

The natural drainage of the region is affected by periods of intense precipitation, seasonal snowmelt from the Sierra Nevada Mountain Range, and urbanization. In particular, urbanization results in an increase in impervious surfaces, which do not allow for infiltration of water into the soil, resulting in increased volumes and velocities of runoff.

The City's level of service for drainage is to provide 10-year storm drainage protection for all development and to provide 100-year storm drainage protection for all structures. All storm water is to flow to retention basins in order to assist in controlling both quality and quantity of storm water runoff discharge to the main drainage system, and ultimately the San Joaquin River.

Two open drainage facilities are within proximity to the project site: the French Camp Outlet Channel (FCOC) to the west and Drain 4, which discharges into the FCOC, to the north. The South San Joaquin Irrigation District (SSJID) owns both of these facilities. Through an extension of a previous agreement with SSJID, the City uses the SSJID facilities for storm water drainage. The City and the SSJID are in the process of negotiating a new agreement that will consider properties that are not covered under previous agreements.

The FCOC is the terminal drainage canal for the SSJID. Excess irrigation water and storm water from the SSJID laterals and drains are conveyed by the canal from south of Highway 120 to French Camp Road. The City of Manteca discharges approximately 421 cubic feet per second (cfs) of storm water runoff into the FCOC for a 10-year design storm event.

The capacity of the FCOC and its tributary drains is the limiting factor that sets the metered flow rates. Currently, it has been concluded that the FCOC has limited capacity due to its relatively small culverts in comparison to the canal itself. However, the location and discharge along the outlet conduits and channels is not a factor affecting the hydraulic capacity requirements of the system. Therefore, regardless of position along the channel, each tributary subarea along the system is provided the same of level of service.

Flooding

The primary flood hazard within the City is the San Joaquin River and its tributaries. However, according to Federal Insurance Rate Maps, the project site is not located in a 100-year or 500-year floodplain.

Water Quality

Surface Water Quality. Water quality is affected by both point and non-point pollution sources. Point pollution sources include industrial uses and treatment plants and non-point pollution sources include runoff from construction sites, landscaping, agricultural sites, and paved areas such as roadways, driveways, and parking lots.

The Federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), states that discharge of pollutants into waters of the United States from any point source is unlawful unless the discharge is in compliance with the National Pollution Discharge Elimination System (NPDES) permit. Section 402(p) of the CWA establishes the framework for regulating municipal and industrial (point sources) storm water discharges under the NPDES program. Regionally, the California Regional Water Quality Control Board (RWQCB) administers the NPDES program through the 9 sub-regional RWQCBs. Locally, the Central Valley RWQCB is responsible for determining the City's compliance with the water quality requirements of the CWA.

Non-point pollution sources are also regulated by the RWQCB through General Construction Activity Storm Water NPDES permits, which are issued for storm water discharges. Construction activities that are subject to this general permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation that result in soil disturbances. Storm water pollution prevention plans are required for the issuance of a construction NPDES permit and typically include both structural and non-structural BMPs to reduce water quality impacts.

Groundwater Quality. Important water resources within the City and the surrounding area include the San Joaquin River and its tributaries and a major groundwater basin. Beneficial uses supported by the San Joaquin River include agricultural water supply, industrial process water, warm freshwater habitat for aquatic resources, habitat for fish spawning, migration routes for anadromous or other fish species, water supply, and vegetative habitat for the maintenance of wildlife and recreation. Groundwater supplies the potable water for the project site. Chlorinated volatile organics and arsenic have been detected in water stored in City wells. In addition, the City is experiencing problems associated with saltwater intrusion. According to the City, the only issue of concern is the infiltration of naturally occurring arsenic, which was detected at levels ranging 10 parts/billion to 20 parts/billion. These levels are within the EPA standards of safe drinking water[1] and the City's wells produce groundwater that meet or exceed the State Department of Health Service's recommended drinking water quality standards.

4.5.2 - Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have an impact on hydrology and water quality if it will:

- Substantially increase the rate or amount of surface water runoff in a manner that will expose people or structures to onsite or offsite flooding or result in peak runoff rates from the site that will exceed existing or planned capacities of downstream flood control systems; or
- Substantially alter the existing drainage patterns of the site or area, including alteration of the course of a stream or river; or
- Violate water quality standards or waste discharge requirements for the receiving drainages.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.5-A: Implementation of the AIDP is consistent with the relevant hydrology and water quality goals and policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

[1] Personal communication, Joe Wells, July 2003.

Project design includes five on-site detention basins to retain runoff. As part of the project, the applicant will seek approval from the City and the SSJID to discharge into the FCOC and Drain 4. As part of this approval, it will be required that storm water from the project site be held onsite until capacity is available, after which it is discharged into the FCOC. Positive control of on-site discharges and downstream monitoring will be required. To protect water quality, the project will comply with the City's Storm Water Management Program, RWQCB regulations and standards, and incorporate BMPs, which further ensures the project's compliance with the City of Manteca General Plan Update 2023.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The AIDP is consistent with the relevant hydrology and water quality goals and policies of the City of Manteca General Plan Update 2023. Therefore, no significant impacts would occur.

Impact 4.5-B: Implementation of the AIDP is not anticipated to significantly alter sub-regional or local hydrologic conditions. (Less than Significant Impact)

According to the City of Manteca Public Works Department,[2] the SSJID and the City are currently negotiating a new agreement that will not allow the City to exceed the capacity of the FCOC. In order to meet this new requirement, the City is preparing a new Storm Drain Master Plan (scheduled completion date 2004) and a dynamic hydraulic model of the storm drain system. The City has also recently installed a system that will allow the City to automatically control discharges from the storm water basins into the SSJID facilities. Information obtained from the hydraulic modeling is anticipated to provide the City with direction on how to most efficiently control discharges. Additionally, the AIDP will be required to comply with the City's Storm Water Management Program and the City's new storm water ordinance, which is anticipated to be adopted in 2004.

The AIDP will not divert storm water discharges to other watersheds or other storm water facilities that have not historically received storm water runoff from the project area. Therefore, no significant impacts to local or sub-regional hydrologic conditions are expected to occur with the implementation of the AIDP.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The AIDP will have a less than significant impact upon local and sub-regional hydrology.

Impact 4.5-C: The location of the AIDP is not within the boundaries of a 100-year or 500-year flood event. (Less than Significant Impact)

According to the City of Manteca General Plan Update 2023, the AIDP is not located within an area that is subject to either a 100-year or 500-year flood event. Moreover, the event of dam failure is considered low and the area of inundation due to dam failure roughly coincides with the boundaries of the 100-year flood plain, of which the closest reach is located more than two miles south of the project site.

[2] Personal communication with Don Milam, June 2, 2003.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
The AIDP will not result in significant flood hazard impacts.

Impact 4.5-D: Implementation of the AIDP will result in storm water runoff and have the potential to effect water quality. (Less than Significant Impact)

Short-Term Construction Impacts
The project site is currently roughly graded; however, additional grading will be required to prepare the project site for development. During grading and construction activities there will be the potential for surface water to carry sediments and small quantities of pollutants into the storm water system. Soil erosion may occur along project boundaries during construction areas where temporary soil storage is required. Small quantities of pollutants have the potential to enter the storm drainage system, thereby potentially degrading water quality. More specifically, runoff will carry higher quantities of potential pollutants, including fertilizers from landscape management and petroleum hydrocarbons and heavy metals from construction vehicles.

Commercial operations that result in an area disturbance of more than one acre shall comply with the NPDES, requiring development to incorporate BMP to control erosion and siltation and contaminated runoff from construction sites. Typical BMPs that are included within NPDES permit requirements include:

- Use of sand bags and temporary desiltation basin during project grading and construction during the rainy season (November through April) to prevent discharge of sediment-laden runoff into storm water facilities;
- Installation of landscaping as soon as possible after completion of grading to reduce sediment transport during storms;
- Hydroseeding of graded building pads if they are not built upon before the onset of the rainy season;
- Incorporation of structural BMPs (e.g., grease traps, debris, screens, continuous deflection separators, oil/water separators, drain inlet inserts) into the project design to provide detention and filtering of contaminants in urban runoff from the developed site prior to discharge to storm water facilities; and
- Stenciling of catch basins and other publicly visible flood control facilities with the phrase, “Don’t Dump - Pollutes Our Waters.”

The City has submitted a Notice of Intent and a Storm Water Management Program under the State General NPDES permit and the City will be adopting a new storm water ordinance in the spring of 2004. This ordinance will include provisions to address both erosion/sediment control and construction site materials and wastes for sites disturbing one acre or more. The ordinance will also allow for compensatory actions to ensure compliance and site stabilization.

Long-Term Operational Impacts
Currently, the City of Manteca does not operate any storm water facilities in the project area; however, as noted the FCOC and SSJID Drain 4, which discharges into the FCOC are adjacent to the project site. Presently, the FCOC is at capacity during storm events. Currently, storm waters flow unimpeded across the site, thus transporting storm waters and contaminants into the SSJID facilities, regardless of contamination or capacity. The AIDP will result in increasing the amount of storm water runoff by transforming pervious surfaces to impervious surfaces. Moreover, storm water will transport non-point source surface water contaminants, such as accumulated particulate matter (dust),

residuals from automobile and truck use (hydrocarbons, heavy metal from brake and tire wear), and organic matter from rooftops, roadways, landscaped areas, parking lots, and other exposed surfaces into the storm drain system. However, as part of the project, the applicant will seek approval from the City and the SSJID to discharge into the FCOC and Drain 4. As part of this approval, it will be required that storm water from the project site be held onsite until capacity is available, after which it is discharged into the FCOC. Positive control of on-site discharges and downstream monitoring will be required, thus the project will not contribute runoff to the SSJID facilities during storm events when the facilities are at capacity. Furthermore, project implementation will require adherence to the City's Storm Water Management Plan - Post Construction Storm Water Management in new Development and Redevelopment Program, which stipulates measures to control storm water quality, such as the development of structural and non-structural storm water runoff strategies and the development of post-construction programs that consider water quality impacts of new developments.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Adherence to the City's Storm Water Management Plan, as required, reduces project related hydrology and water quality impacts to levels that are considered less than significant.

4.6 - Public Services, Utilities, and Energy Consumption

This section is based upon information provided by individual service and utility providers that serve or that will serve the project site.

The City of Manteca's General Plan Update 2023 establishes both a Primary and a Secondary Urban Service Boundary. These boundaries define the extent of urbanization that will be permitted in less than ten-years and between ten and twenty-year horizons. These boundaries are compatible with the Public Facilities Master Plan that identifies and establishes the funding mechanisms for specific capital improvements.

The City of Manteca General Plan Update 2023 Public Services and Facilities Element contains the following goals and policy that are applicable to all public services and utilities throughout the project area:

Goals

PF-3: Facility improvements and services required to serve development will not place an economic burden on existing residents of the City of Manteca (City). Development will pay a fair share of all costs of required public infrastructures and services.

PF-4: Public improvements and facilities will be designed to enhance rather than degrade the natural environment of the City and the surrounding area.

PF-5: The City's public services and facilities will support economic development and residential growth in the City.

Guiding Policy

PF-P-3: Make use of the public right-of-way as a tool for facilitating quality design and development.

4.6.1 - Fire Services

Environmental Setting

Relevant Policies

The following General Plan Update 2023 Public Services and Facilities Element policies are applicable to the AIDP as it relates to fire services:

Guiding Policies

PF-P-44: The City shall endeavor to maintain an overall fire insurance rating (ISO) of 4 or better.

PF-P-45: The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls.

PF-P-46: The City shall provide fire services to serve the existing and projected population.

PF-P-47: The City will establish the criteria under which fire services will be enhanced.

Fire Protection

The Manteca Fire Department (Department) provides fire protection for the City. The Department's main function is to provide public fire education, fire prevention, organized and efficient response to fires, first response to hazardous materials incidents, and basic level, first responder, medical response.

The Department responds to emergencies and calls for service from three fire stations. The Department also responds to medical emergencies. Medically-related responses account for slightly over fifty percent of all requests for services. To maintain a standard level of care, all fire personnel are trained and certified Emergency Medical Technicians.

Levels of Service

The existing goal is to maintain an average five-minute response time for all emergencies. The ISO has rated the City as a 3, on a scale of 1 to 10, with 10 being no fire protection at all and 1 being reserved for select cities. This rating evaluates not only the Department, but also the City's water system and the Department's communication and training functions.

Mutual Aid Agreement

The Department participates in several mutual aid agreements including, an Emergency Mutual Aid Agreement with all fire agencies in San Joaquin County, Hazardous Materials Response Agreement with the San Joaquin County Office of Emergency Services (OES), and an Hazardous Materials Inspection Agreement with the San Joaquin County OES.

Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have a significant impact to fire services if it will result in:

- The increased demand for fire services that exceeds established standards; or
- An increased risk to urban fire hazards; or
- An increased need for emergency preparedness above the capacity of the existing programs.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.6.1-A: Implementation of the AIDP will be consistent with the relevant fire protection policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

The AIDP is located within the Secondary Urban Services Boundary (SUSB). The project site is located within the SUSB primarily because the project is not within the current boundary of the Public Facilities Implementation Plan (PFIP). It is anticipated that the Primary Urban Services Boundary (PUSB) will be expanded to include the AIDP area when the PFIP is updated in the near future; however, depending on the timing of the PFIP update, this project may require an amendment to the PFIP to include the AIDP within the boundaries of the PUSB. Additionally, the AIDP is consistent with the growth projections of the City and, thus, it is consistent with the City's policy to provide police services to the existing and projected population. Presently, the City has an ISO rating of 3, since the City has determined that services may be extended to the project site without overburdening the present facilities and systems, it is anticipated that project implementation will not result in a down grade of the City's ISO rating. Moreover, the AIDP is subject to the City of Manteca Building Code, the Uniform Building Code, and various federal, state, and local laws and ordinances that regulate industrial development. Compliance with the various laws, as required, will assure that the project is consistent with the policies of the General Plan, as they relate to fire safety and prevention.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation
The AIDP is considered to have a less than significant impact as it relates to the relevant fire protection policies of the Manteca General Plan Update 2023.

Impact 4.6.1-B: The AIDP may potentially impact fire protection services. (Less than Significant Impact After Mitigation)

The project site is presently located outside of an area that can be serviced by the Department in five minutes or less. The AIDP will be required to contribute to the fire facility fee. Currently, the Department is trying to establish a fire station within the proposed Villa Ticino residential project, which is south of the site. This facility could serve the AIDP. If the station is not located within the Villa Ticino development, another location would be chosen, which could service both developments.

The fire flow of the project is projected to be 3,500 gallons per minute (gpm); however, additional water will be needed to provide water for fire protection systems. Project implementation will require water storage and/or water pumps to provide for the adequate water supply for fire safety and protection.

Mitigation Measures
4.6.1-B-1: The AIDP shall pay a fair share fire facility fee for the construction, staffing, and operation of a new fire station that will service the project site and surrounding area.

4.6.1-B-2: The AIDP shall provide for water storage per the design criteria dictated by the City of Manteca Public Works Department.

Level of Significance After Mitigation
Implementation of mitigation measures 4.6.1-B-1 and 4.6.1-B-2 will reduce project-related fire service impacts to levels considered less than significant.

4.6.2 - Police Services

Environmental Setting

Relevant Policies

The following General Plan Update 2023 Public Services and Facilities Element policies are applicable to the AIDP:

Guiding Policies
PF-P-41: The City shall endeavor through adequate staffing and patrol arrangements to maintain the minimum feasible response times for police calls.

PF-P-42: The City shall provide police services to the existing and projected population.

PF-P-43: The City will establish the criteria for determining the circumstances under which police services will be enhanced.

Police Protection

The Manteca Police Department (Department) is a full service municipal law enforcement agency with specialized assignments and recognized specialties. The Department has 68 sworn officers and has an active volunteer staff consisting of Police Explorers, Reserve Officers, and senior citizens.

Response Statistics

The City has established a ratio of 1.2 officers per 1,000 persons. Presently, the Department responds to 95 percent of priority one calls within five minutes and all priority one calls within twelve minutes.

Project Impacts and Mitigation Measures

Thresholds of Significance

- Increases in development, population, size of events, or response times would require expanding the existing staff and equipment levels to maintain an adequate level of protection for the area; or
- Causes a substantial amount of police emergencies that cannot be adequately served by available Police Department personnel or equipment.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.6.2-A: Implementation of the AIDP will be consistent with relevant police protection policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

The AIDP is consistent with the City of Manteca General Plan Update 2023 in that it does not require additional police resources to operate. Additionally, the AIDP is consistent with the growth projections of the City; thus, it is consistent with the City's policy to provide police services to the existing and projected population. Moreover, the purpose of the project is anticipated to be included within the PUSB during the update of the PFIP. However, depending on the timing of the PFIP update, the AIDP project may require an amendment to the PFIP to include the project site within the PFIP.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The AIDP is considered to have a less than significant impact as it relates to relevant police protection policies of the Manteca General Plan Update 2023.

Impact 4.6.2-B: The intensification of land uses within the project area will result in an increased demand for police services. (Less than Significant Impact)

The AIDP will result in an increased demand for police services within the project area; primarily vehicular accidents and traffic violations are anticipated to increase incrementally with the increase in traffic within the project area. As identified in Section 4.2, Transportation and Circulation of this DEIR, a traffic signal will be required at the project access point at the intersection of Louise Avenue and the project driveway. According to the Manteca Police Department, their existing resources will be adequate to service the project.[1]

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The Department can serve the AIDP without resulting in a deficiency in their current service capabilities; thus, the project is considered to have a less than significant impact upon police services.

[1] Personal communication, Captain Dave Bricker, May 2003.

4.6.3 - Water Services

Environmental Setting

Relevant Goal and Policies

The following General Plan Update 2023 Public Services and Facilities Element Water Supply and Distribution goal and policies are applicable to the AIDP:

Goal

PF-7: Maintain an adequate level of service in the City's water system to meet the needs of existing and projected development.

Guiding Policies

PF-P-12: The City shall assess a water development fee on all new commercial, residential, and industrial development sufficient to fund system-wide capacity improvements. The water development fee will be periodically reviewed and revised as necessary.

PF-P-13: Ensure that all new development provides for and funds a fair share of the costs for adequate water distribution, including line extensions, easements, and plant expansions.

PF-P-17: The City of Manteca shall consider incremental increases in the demands on groundwater supply and water quality when reviewing development applications.

Implementing Policies

PF-I-3: The City shall require, as a condition of project approval, dedication of land and easements or payment of appropriate fees and exactions, to help offset municipal costs of the expansion of water treatment facilities and delivery systems.

PF-I-4: The City shall retain a water conservation ordinance requiring the installation of low-flush toilets, low-flow showerheads, and similar features in all new development.

PF-I-7: The City will encourage the use of recycled water for landscape irrigation, as feasible, within the parameters of State and County Health Code standards.

Water Resources

Currently, the City of Manteca operates a system of wells from which the City receives all of its domestic water supply. Individual operating capacities of the wells range from 380 gallons per minute (gpm) to 2,300 gpm. The groundwater basin's safe yield is 1.0 acre-foot[2] per acre a year, however, the City is extracting groundwater at a rate of 2 to 2.4 acre-feet per acre a year. To reduce its dependence on groundwater, the City is participating in the South County Surface Water Supply Project (SCSWSP), a wastewater treatment plant and pipeline project that will transport up to 44,000 acre-feet of treated water a year to the cities of Tracy, Lathrop, Escalon, and Manteca, beginning in 2005. The City of Manteca's water allotment is 12,494 acre-feet by the year 2011 and 18,500 acre-feet by 2025.[3] It is anticipated that when operational, the SCSWSP will provide approximately fifty-two percent of the City's water supply.

Transmission and Distribution

Water facilities in the City of Manteca consist primarily of water wells and transmission mains and the City maintains one surface storage reservoir, a 30,000 gallon elevated tank. Transmission lines within the project area include twelve-inch pipelines that terminate at the Union Pacific Railroad and at the northern boundary of the proposed Villa Ticino development. The project site is located in an

[2] One acre-foot is approximately enough water to supply a five person household for one year.

[3] When inflows to Melones Lake are less than 600,000 acre-feet a year, water deliveries to the surface water project will be reduced and partner cities will be required to conserve and rely upon groundwater resources.

area that will need to develop new sources of supply, in the form of well(s), to provide for the water demands.

Level of Service

The City of Manteca's target level of service (LOS) for water is to supply an average of 200 gallons per day per person at pressures no less than 40 pounds per square inch (average conditions) and 20 pounds per square inch (emergency and peak demand conditions).

Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have a significant impact upon water supply if:

- Water supplies are not available to meet the demand of the project; or
- The project will require the construction of new facilities or the expansion of existing facilities, which would cause significant environmental effects; or
- The project cannot be served by the existing provider.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.6.3-A: Implementation of the AIDP will be consistent with the relevant water service goal and policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

Consistent with the relevant goal and policies of the General Plan, the project applicant will pay the water development fee, as applicable. The Public Facilities Implementation Plan (PFIP) addresses the specific demand calculations and provides for infrastructure improvements to meet future water needs in accordance with the land uses identified on the General Plan Land Use Plan. Since the project is consistent with the land uses envisioned in the General Plan, the water demand and facilities required to serve this project have been accounted for in the PFIP and the appropriate funding mechanisms, such as the water development fee, have been calculated. Approximately ten percent of the project site will be landscaped; thus, the project will not result in generating a large demand for water for irrigation purposes. As feasible, the project will use recycled water for irrigation and will incorporate appropriate water conservation measures (e.g., low-flush toilets and low-flow fixtures).

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The AIDP is considered to have a less than significant impact as it relates to the relevant water supply and transmission goal and policies of the Manteca General Plan Update 2023.

Impact 4.6.3-B: Implementation of the AIDP project will result in an increase demand for water service and supplies. (Less than Significant Impact After Mitigation)

According to the City of Manteca's General Plan Update 2023 Background Report, "Generally water facilities to serve demand created by new growth can be expanded relatively easily and in a cost effective manner by constructing transmission pipelines and wells." The AIDP will require the extension and/or upgrade of existing transmission and distribution systems. According to the City of Manteca Public Works Department, the existing 12-inch main in Louise Avenue must be extended

from its current termination at the Union Pacific Rail Road to the project site and the existing 12-inch main in Airport Way, which currently terminates at the northern boundary of Villa Ticino, must be extended north to Louise Avenue.

The AIDP will generate a demand for water services. According to the City's Public Works Department, the project is estimated to have a maximum day irrigation demand of 125-150 gpm and a maximum day municipal demand of 375 gpm. Additionally, the project will have a fire flow demand of 3,500 gpm and an additional demand for fire protection systems, such as sprinklers. Presently, the City is experiencing a demand that is greater than water supply. However, the City participates in the SCSWSP, which is anticipated to deliver 9,400 acre-feet of water to the City in the year 2005 and 24,500 acre-feet per year by the year 2025. According to the City's Public Works Department, the AIDP impact will not impact the City's water service.[4]

Moreover, the PFIP addresses the specific calculation and provides for infrastructure improvements to meet future water needs in accordance with the land uses identified on the General Plan Land Use Plan. Since the project is consistent with the land uses envisioned in the General Plan and since the project is within the PSB, it is expected that with the project related expansion and/or upgrades of transmission and distribution facilities that the site will operate within the parameters of the City's LOS standards.

Mitigation Measure

4.6.3-B-1: The project applicant shall be required to pay a water development fee to assist in the funding of system-wide capacity improvements and offset municipal costs of the expansion of water treatment facilities and delivery systems.

Level of Significance After Mitigation

With the incorporation of mitigation measure 4.6.3-B-1, the AIDP is considered to have less than significant water supply impacts.

4.6.4 - Solid Waste

Environmental Setting

Relevant Goals and Policies

The following General Plan Update 2023 Public Services and Facilities Element goal and policies are applicable to the AIDP:

Goal

PF-11: Provide for the implementation and enforcement of the provisions for the Source Reduction and Recycling Element, as mandated by the State.

Guiding Policies

PF-P-31: The City will implement and enforce the provisions of it Source Recycling and Reduction Element.

PF-P-32: The City shall support the continued use of the Lovelace Transfer Station on Lovelace Road, between Union road and Airport Way, for the processing and shipping of solid waste materials.

In addition, the City is required to comply with the Integrated Waste Management Act of 1989 (AB 939), which in general requires that the City implement source reduction, recycling, and composting of environmentally safe transportable and disposable wastes. Under the Act, the City of Manteca is

[4] Personal communication with Keith Conarroe, June 2003.

required to prepare an Integrated Waste Management Plan, which includes a Source Reduction and Recycling Element and a Hazardous Waste Element

Solid Waste Management

The City of Manteca's Solid Waste Division collects solid waste and recyclable materials, which are hauled to the Forward Landfill. Green Waste is also delivered to the privately operated Forward Landfill. According to the Manteca General Plan, update 2023, this landfill has a remaining capacity of 1,608,752 cubic yards and the anticipated closure date is 2023. Currently, the landfill accepts 866 tons of solid waste per day.

Impact 4.6.4-A: Implementation of the AIDP will be consistent with the relevant solid waste policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

The AIDP will result in an increase in the generation of solid waste and an increase in waste that will be placed in landfills. Solid waste generated by the AIDP will be disposed of at the Forward Landfill, which is not consistent with the General Plan, however, it is in accordance with the City's contract; thus, it is not considered a significant impact. As required, the AIDP will be implemented in accordance with AB 939 and the City's Integrated Waste Management Plan.

Mitigation Measures

No mitigation measures required.

Level of Significance After Mitigation

The AIDP is considered to have a less than significant impact as it relates to relevant solid waste goal and policies of the Manteca General Plan Update 2023.

Impact 4.6.4-B: Implementation of the AIDP will result in the generation of solid waste throughout the lifetime of the project. (Less than Significant Impact)

The City of Manteca Solid Waste Division and the County of San Joaquin Public Works Solid Waste Division do not maintain solid waste generation rates for industrial land uses. However, according to the City of Manteca Solid Waste Division[5], the AIDP will not result in a significant solid waste impact.

Mitigation Measures

No mitigation measures required.

Level of Significance After Mitigation

The AIDP is not considered to have a less than significant solid waste impact.

4.6.5 - Wastewater

Environmental Setting

Relevant Goal and Policies

The following General Plan Update 2023 Public Services and Facilities Element goal and policies are applicable to the AIDP:

[5] Personal communication with Rexie LeStrange, City of Manteca Solid Waste Division, May 30, 2003.

Goal

PF-8: Maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and projected development.

Guiding Policies

PF-P-18: Ensure wastewater collection and treatment for all development in the City and the safe disposal of wastes.

PF-P-19: The City will maintain capacity to process combined residential, commercial, and industrial flow.

PF-P-20: The City shall develop new sewage treatment and trunk line capacity as necessary to serve new development.

PF-P-24: Ensure that all new development provides for and funds a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.

Implementation Policies

PF-I-9: The City will require sewage generators within its service area to connect to the City's system, except those areas where on-site treatment and disposal are deemed appropriate.

PF-I-10: The City will encourage and permit an industrial pretreatment program for business parks and other industrial uses in accordance with state and federal requirements.

PF-I-12: The City will promote reduced wastewater system demand through efficient water use by:

- Requiring water conserving design and equipment in new construction;
- Encouraging retrofitting with water conserving devices;
- Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible; and
- Maintaining a City-wide map of all sewer collection system components and monitoring the condition of the system on a regular basis.

Wastewater Service

The City of Manteca (City) Wastewater Quality Control Facility (WQCF) operations consist of a 6.95 million gallon per day (mgd) bio-filter activated sludge plant and a gravity flow system consisting of 140 miles of collection lines and one major lift station. Currently, the WQCF serves commercial and residential customers in the City of Manteca (5.93 mgd) and the City of Lathrop (1.02 mgd). The WQCF is undergoing phase improvements that are scheduled to be completed in December 2005. These improvements will increase the treatment capacity of the WQCF by 10 mgd. Under the WQCF's current configuration, it can be expanded to ultimately treat 25 mgd.

Currently, the City maintains no sewer facilities within the vicinity of the site; however, there are privately owned sewer force mains within the project area. According to the City's Public Works Department, there are conceptual plans to install a large diameter gravity sewer pipeline (the North Trunk) from the WQCF to the northern and eastern areas of Manteca. One of the proposed alignments of the North Trunk is in the vicinity of the AIDP, along Louise Avenue, several hundred feet before its intersection with Airport Way. However, this segment of the North Trunk, if constructed, is not anticipated to occur for at least five years. At this time, the capacity of the proposed pipelines are sized to provide sewer service to the AIDP.

Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP will have a significant impact upon wastewater services if:

- Wastewater flows generated by the project cannot be accommodated by the local wastewater treatment system; or
- Wastewater distribution lines are not capable of conveying the sewage generated by the project to the wastewater treatment plant.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.6.5-A: Implementation of the AIDP will be consistent with the relevant wastewater service policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

Currently, the City does not maintain sewer services within the project area. However, to maintain an adequate level of service in the City's sewage collection and disposal system, the AIDP applicant will be required to pay a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions. Moreover, since the site is not currently served by the existing wastewater system, there will be the opportunity to implement on-site treatment options and integrate conservation design techniques, such as the availability of recycled water for landscape irrigation, in addition to pretreatment programs. Therefore, implementation of the AIDP would be consistent with the relevant wastewater service policies of the General Plan.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

The AIDP is considered consistent with the relevant wastewater service goal and policies of the Manteca General Plan Update 2023. Therefore, no significant consistency impacts will occur.

Impact 4.6.5-B: The AIDP will result in an increase in the generation of wastewater and will require the extension of wastewater transmission and distribution facilities to service the site. (Less than Significant Impact After Mitigation).

The WQCF is undergoing phase improvements that are scheduled to be completed in December 2005. These improvements will increase the treatment capacity of the WQCF by 10 mgd and it can be expanded to ultimately treat 25 mgd. Since the development of the project site is consistent with the City's planned growth, it is anticipated that it can be served by the WQCF. Currently, there are no wastewater facilities that service the site. However, the AIDP applicant will be required to pay a fair share of the costs for adequate sewer distribution, including line extensions, easements, and plant expansions.

Mitigation Measures

4.6.5-B-1: Prior to the issuance of building permits, the project applicant shall provide verification to the City that there will be adequate wastewater service installed prior to occupancy of the project to serve the AIDP.

Level of Significance After Mitigation
With the implementation of the mitigation measure above, the AIDP is considered to have a less than significant impact.

4.6.6 - Energy Resources

Environmental Setting

Relevant Goal and Policies

The following Manteca General Plan Update 2023 Public Facilities and Services Element goal and policies are applicable to the AIDP:

Goal

PF-10: The City shall ensure adequate, reliable electric service is available to all users in the City.

Guiding Policy

PF-P-29: Ensure that adequate, reliable electric service is available to all users in the City.

Implementation Policies

PF-I-15: The City will support energy conservation measures and innovative uses of solar energy, heat recovery, and co-generation in all structural and industrial processes.

PF-I-16: The City will confer with utility companies regarding major development plans and cooperate with planning extension of utilities.

PF-I-17: The City will require the undergrounding of utility lines in new development and as areas are redeveloped, except where infeasible for operational reasons.

Energy Facilities and Service

Pacific Gas and Electric (PG&E) is the principle provider of electricity in the City of Manteca. Under deregulation, other companies may also provide electricity, however, PG&E owns and operates gas distribution lines that are located within the project area.

Project Impacts and Mitigation Measures

Thresholds of Significance

The AIDP is considered to have a significant impact upon energy resources if:

- Electric/natural gas suppliers are not available to meet the demand of the project; or
- The project will require the construction of new electrical/natural gas facilities or the expansion of facilities that will lead to significant environmental effects; or
- The project cannot be serviced by the existing provider.

Impact Analysis

The impact analysis section is organized by impact. It identifies and analyzes each impact, lists mitigation measure(s), if applicable, and describes the level of impact after mitigation.

Impact 4.6.6-A: Implementation of the AIDP will be consistent with the relevant energy resources goal and policies of the Manteca General Plan Update 2023. (Less than Significant Impact)

The AIDP will require upgrades and extensions of the existing electrical and natural gas transmission and distribution systems. To ensure consistency with the relevant energy resources goal and policies, the City of Manteca will coordinate with PG&E to provide for the installation of such improvements.

Moreover, the AIDP will be in compliance with the California Code of Regulations Title 24, Part 6, Article 2, as required, which will ensure consistency with the General Plan.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
The AIDP is consistent with the energy resources goal and policies of the Manteca General Plan Update 2023; therefore, no significant impacts will occur.

Impact 4.6.6-B: The AIDP will create a demand for additional energy resources and require upgrades and extensions of transmission and distribution systems. (Less than Significant After Mitigation)

Development of the AIDP will result in the consumption of energy. As indicated by PG&E, the extension of distribution and transmission lines is a necessary consequence of development.[6] PG&E will base design requirements for facilities on the plans submitted by developers and applicants during design review.

As previously noted, PG&E owns and operates electrical and natural gas distribution lines within the project area. The California Public Utilities Commission maintains specific clearance requirements between utility facilities and construction activities and structures. Additionally, project development may require the relocation of existing PG&E facilities.

Mitigation Measures

4.6.6-B-1: Prior to the approval of development plans, the applicant shall perform an ALTA Land Tile Survey for the purpose of identifying easements that traverse across the project site.

4.6.6-B-2: Development plans shall provide for unrestricted utility access and prevent easement encroachments that impair maintenance and operation of PG&E facilities.

4.6.6-B-3: The project applicant shall be responsible for costs associated with the relocation of any existing PG&E facilities that are relocated to accommodate project development.

Level of Significance After Mitigation
Implementation of the recommended mitigation measures will reduce project related energy resources impacts to less than significant.

[6] Personal communication with Bob Jones, PG&E, July 2003.

SECTION 5:
OTHER CEQA CONSIDERATIONS

5.1 - Significant Unavoidable Impacts

According to CEQA Guidelines § 15126, an EIR must disclose the significant unavoidable impacts that will result from a project. Moreover, these guidelines state that an EIR should explain the implications of such impacts and the reasons why the project is being proposed, notwithstanding such impacts. Implementation of the Assieh Industrial Development project (AIDP) will result in the alteration of the physical environment. Section 4, Environmental Setting, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation, and Section 5.4, Cumulative Impacts of this DEIR provide a description of the potential environmental impacts of the AIDP, as well as measures to reduce the environmental impacts to the maximum extent feasible. After implementation of the AIDP, as well as the project related mitigation measures, it has been determined that the following impact cannot be feasibly mitigated to a level that is considered to be less than significant:

Noise. Noise levels within the project area currently exceed the established noise abatement criteria and the standards set forth in the City of Manteca General Plan Update 2023. The AIDP will contribute to the noise levels in the project area, and thus it will contribute to a cumulative noise impact. While noise barriers should be considered to attenuate noise impacts when noise levels are expected to exceed the noise abatement criteria, noise barriers are not feasible because: 1) a reduction of 5 dBA will not be achieved with the barriers; 2) noise barriers cannot interrupt the line of sight between the noise source and the receiver; and 3) the barriers would not be cost effective because the protection is for a limited number of receivers Therefore, there are no feasible mitigation measures and the AIDP is not consistent with the General Plan and will have a cumulative significant and unavoidable noise impact.

5.2 - Significant Irreversible Changes

The environmental effects of the AIDP are discussed in Sections 4 and 5.4 of this DEIR and are summarized in Table 2-1 of Section 2, Executive Summary. Implementation of the AIDP will require the long-term commitment of natural resources as described below.

Approval and implementation of the actions related to the implementation of the AIDP will result in an irretrievable commitment of non-renewable resources such as energy supplies. The energy resource demands will be used for construction, heating and cooling of buildings, transportation of people and goods, as well as lighting and other energy associated needs.

Non-renewable resources will be committed primarily in the form of fossil fuels, and will include fuel, oil, natural gas, and gasoline used by vehicles and equipment associated with the construction of the AIDP. The consumption of other non-renewable resources or slowly renewable resources will result from the development of the AIDP. Those resources include, but are not limited to, lumber and other forest products, sand and gravel, photochemical construction materials, steel, copper, lead, and water. Since alternative energy sources such as solar and wind energy are not currently in widespread use, it is unlikely that any real savings in non-renewable energy supplies (i.e., oil and gas) will be realized in the immediate future.

5.3 - Growth Inducing Impacts

There are two types of growth inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and

facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines § 15126.2[d]).

Direct growth inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area as the project. Also included in this category are projects that remove physical obstacles to population growth such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area. Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth are those, which may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

The project will result in approximately 1,400,00 square feet of industrial land uses, thus creating new employment opportunities within the AIDP area. This may indirectly induce growth within the region as prospective employees relocate to the project area. Yet, this in-migration is not considered substantial and is not considered significant.

5.4 - Cumulative Impacts

Section 15130 of the CEQA Guidelines requires the consideration of cumulative impacts within an EIR. Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment, which results from the projects when added to other closely related projects. In identifying projects, which may contribute to cumulative impacts, the CEQA Guidelines allow the use of either a specific list of past, present, and reasonably anticipated future projects, providing related or cumulative impacts, including those that are outside of the control of the lead agency. The CEQA Guidelines also allow a summary of projections contained in an adopted General Plan or related planning document, which is designed to evaluate regional or area-wide conditions. The following is an evaluation of the impacts generated from the AIDP when considered in conjunction with projections based on buildout of the City's General Plan. The cumulative impact discussion is organized by each of the environmental issues evaluated in Sections 4.1 through 4.6 of this DEIR.

5.4.1 - Cumulative Impact Analysis

Land Use

As with the AIDP evaluated in this DEIR, each of the related projects will be subject to environmental review to determine consistency with the Manteca General Plan Update 2023, City of Manteca Zoning Ordinance, and other regional plans. Thus, the AIDP project is anticipated to have a less than significant cumulative land use impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative land use impacts will occur under the AIDP.

Transportation and Circulation

Forecasts for year 2025 were provided by the San Joaquin Council of Governments (SJCOG) from their 2025 Regional Transportation Program (RTP) model. SJCOG provided plots of the 2025 RTP model illustrating the bi-directional daily traffic volumes on each segment of the roadways in the

study area. After review of the SJCOG forecasts, it was determined that the SJCOG model underestimated traffic volumes at some of the freeway interchanges where the greatest amount of future traffic growth is anticipated in the future. The location of greatest deficiency was noted to occur at the I-5/Louise Avenue intersections. In Table 5-1, significant deficiencies that occur are indicated in **bold**.

To reconcile the forecast, KHA obtained the same traffic projections that were used for the Villa Ticino West study. The Villa Ticino West project used the Manteca General Plan Traffic Model which is an enhanced version of the SJCOG model. In comparing the two models' 2025 forecasts, it was noted that near the AIDP site, the forecasts were very similar, but varied farther away from the project site. As a result, it was ultimately determined to use the same forecasts and cumulative turning movement volumes as in the Villa Ticino West project. To the extent that data was available, cumulative volumes associated with the Villa Ticino West project were used directly from the report. In some instances the report did not include all the same intersections as in the AIDP traffic study; therefore, KHA developed turning movement volumes at the remaining (missing) study intersections near the freeways.

Forecast model link volumes were used to develop turning movement volumes at each missing study intersection. The following steps were taken to develop turning movement volumes from the link volumes provided.

1. Development of peak hour approach volumes. The daily volumes from the Manteca General Plan Traffic Model were used to calculate the expected AM and PM peak hour volumes on the approaches to the missing intersections. Existing count data was used to determine the percent of daily traffic that was accounted for by AM and PM peak hour traffic. It was determined that the AM and PM peak hours accounted for 6 percent and 7 percent of the total daily traffic, respectively. These percentages were applied to the forecast daily traffic volumes to calculate the expected AM and PM peak hour volume on the approaches to each intersection.

2. Development of peak hour turning movement volumes. The peak hour approach volumes calculated were used to develop expected AM and PM peak hour turning movement volumes at each intersection. An iterative process was used to convert the approach volume to turning movement volume. The iterative process included using the use of variables such as the percent peak hour traffic of daily traffic, the expected directional distribution of traffic, and the entering and exiting volumes of each intersection. This process produced AM and PM peak hour turning movement volumes at each intersection.

Exhibit 5-1 illustrates the cumulative turning movement volumes at the study intersections.

Roadway improvements

- Construction of the remaining portion of Louise Avenue to a four-lane arterial in the project area.
- Construction of the remaining portion of Airport Way to a six-lane arterial between the intersections of Lathrop Road and Yosemite Avenue, changing to a four-lane arterial between the intersections of Yosemite Avenue and the SR-120 eastbound ramps.
- Construction of Lathrop Road to a four-lane arterial in the project area.
- Construction of Yosemite Avenue to a four-lane arterial in the project area. A portion of Yosemite Avenue in the project area currently is a four-lane cross-section.

Traffic Control Improvements:
As noted earlier, based on analysis of the study intersections and a preliminary signal warrant analysis that included only Peak Hour Volume Warrant #11, the following intersections were assumed as being signalized between the near-term and long-term conditions:

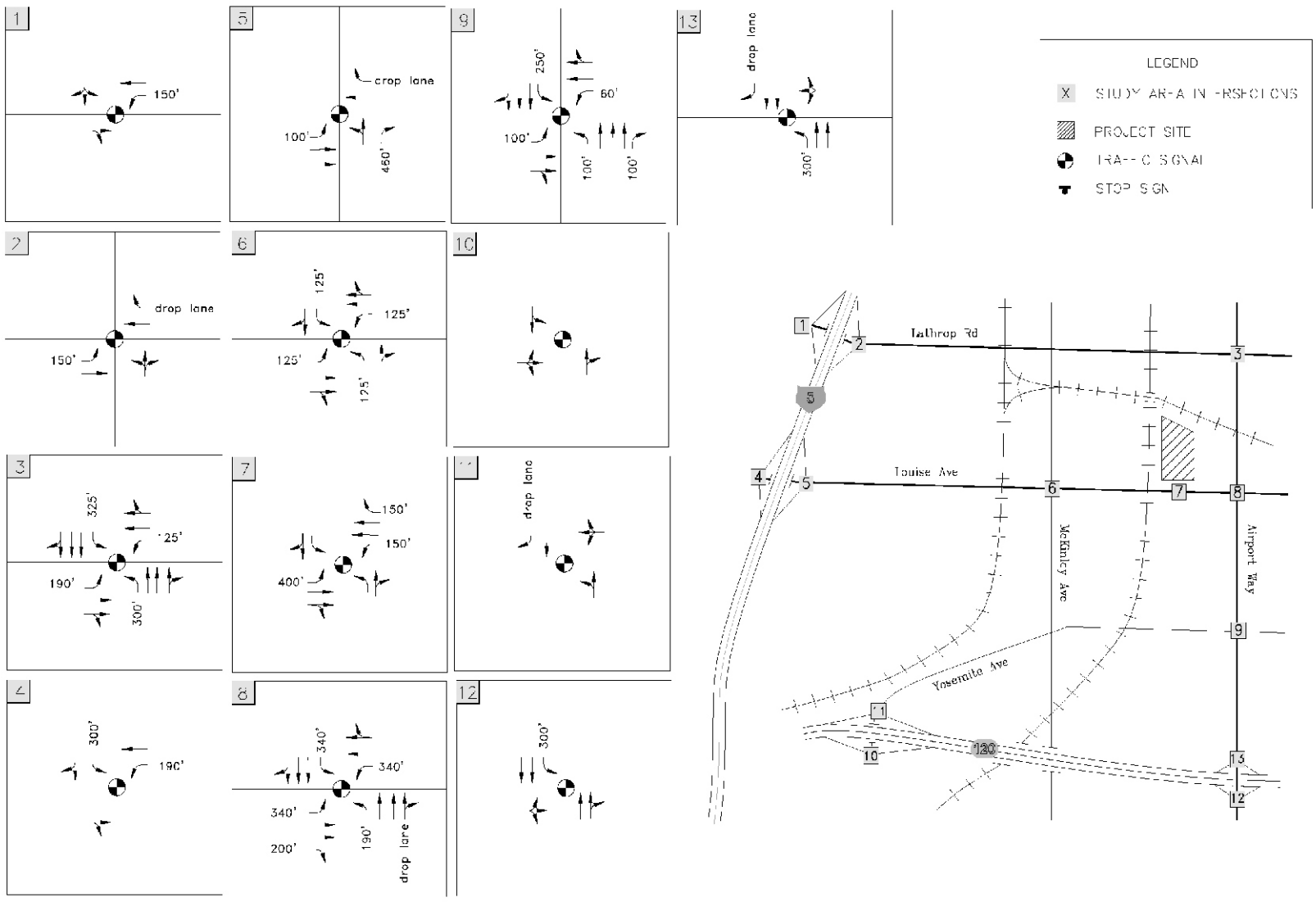
- Lathrop Road/I-5 SB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 WB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 EB ramps. (Warrant #11 met under cumulative conditions)

Even though Peak Hour Volume Warrant is satisfied in the long term, it is recommended that traffic be monitored and that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.

Trips associated with the AIDP were added to the cumulative forecast. Exhibit 5-2 illustrates the cumulative plus project traffic volumes at the study intersections. Exhibit 5-3 illustrates long-term cumulative and project traffic volumes

Table 5-1: Cumulative Conditions Level of Service Summary

Peak Period		Existing		Cumulative		Cumulative + Improvement		Cumulative + Project	
		AM	PM	AM	PM	AM	PM	AM	PM
Signalized Intersections									
1	I-5 SB Ramps / Lathrop Road	—	—	C	D	C	D	C	D
2	I-5 NB Ramps / Lathrop Road	—	—	B	**E**	A	C	A	C
3	Airport Way / Lathrop Road	B	C	C	C	C	C	C	C
4	I-5 SB Ramps / Louise Avenue	B	C	**F**	**F**	C	D	D	E
5	I-5 NB Ramps / Louise Avenue	A	A	**F**	**F**	C	D	C	D
6	McKinley Avenue / Louise Avenue	C	B	C	D	C	D	D	D
7	Project Driveway / Louise Avenue	—	—	A	A	A	A	C	C
8	Airport Way / Louise Avenue	—	—	B	C	B	C	C	C
9	Airport Way / Yosemite Avenue	B	C	C	D	C	D	C	D
10	Yosemite Ave/SR-120 EB Ramps	—	—	**F**	**F**	B	D	B	D
11	Yosemite Ave/SR-120 WB Ramps	—	—	B	D	B	D	B	D
12	Airport Way / SR-120 EB Ramps	—	—	B	**E**	B	C	B	D
13	Airport Way / SR-120 WB Ramps	—	—	A	B	A	B	A	B

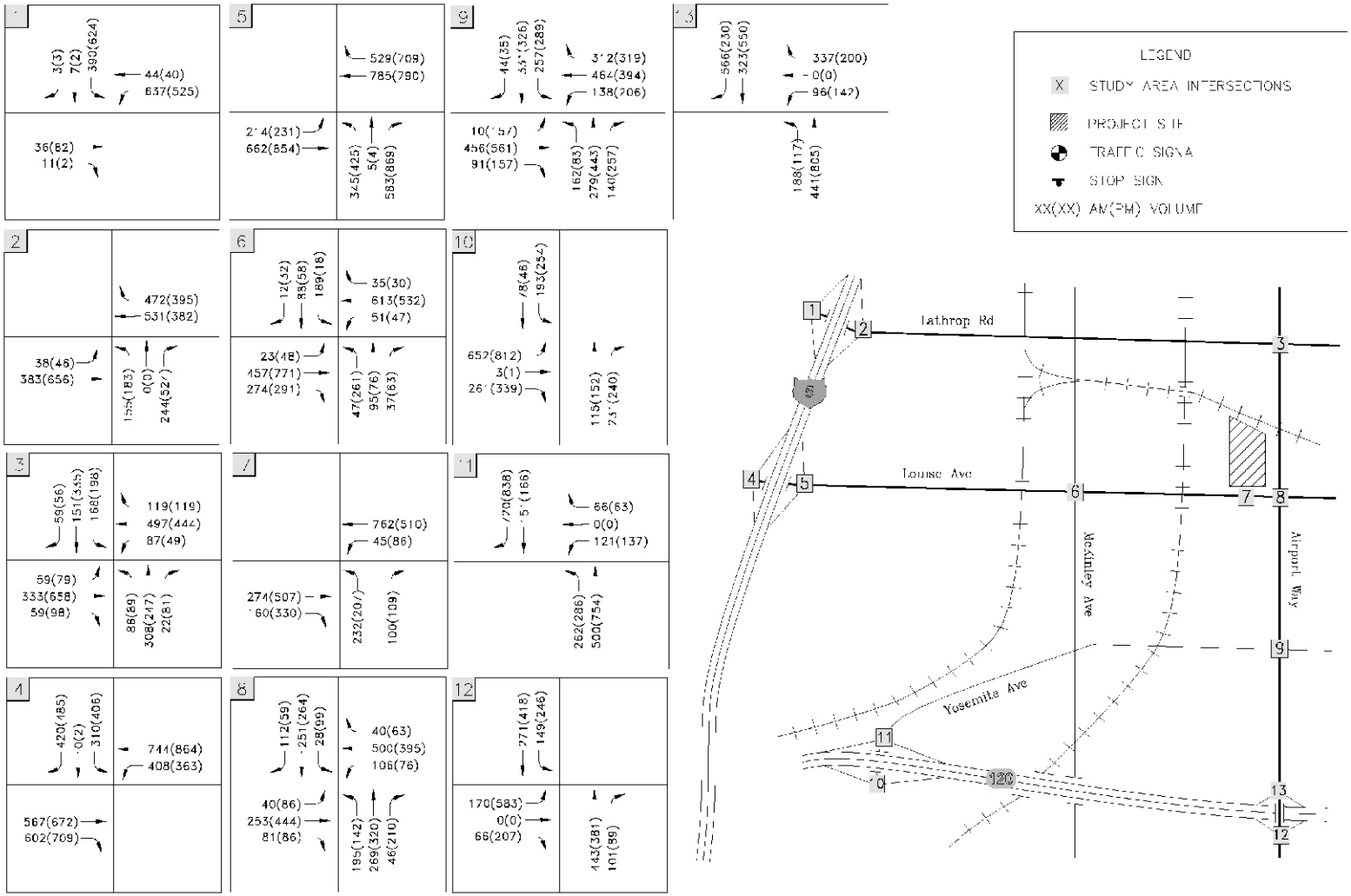


Source: Kimley-Horn and Associates, Inc.

NOT TO SCALE

Exhibit **5-1**

Long-Term Lane Geometry and Traffic control

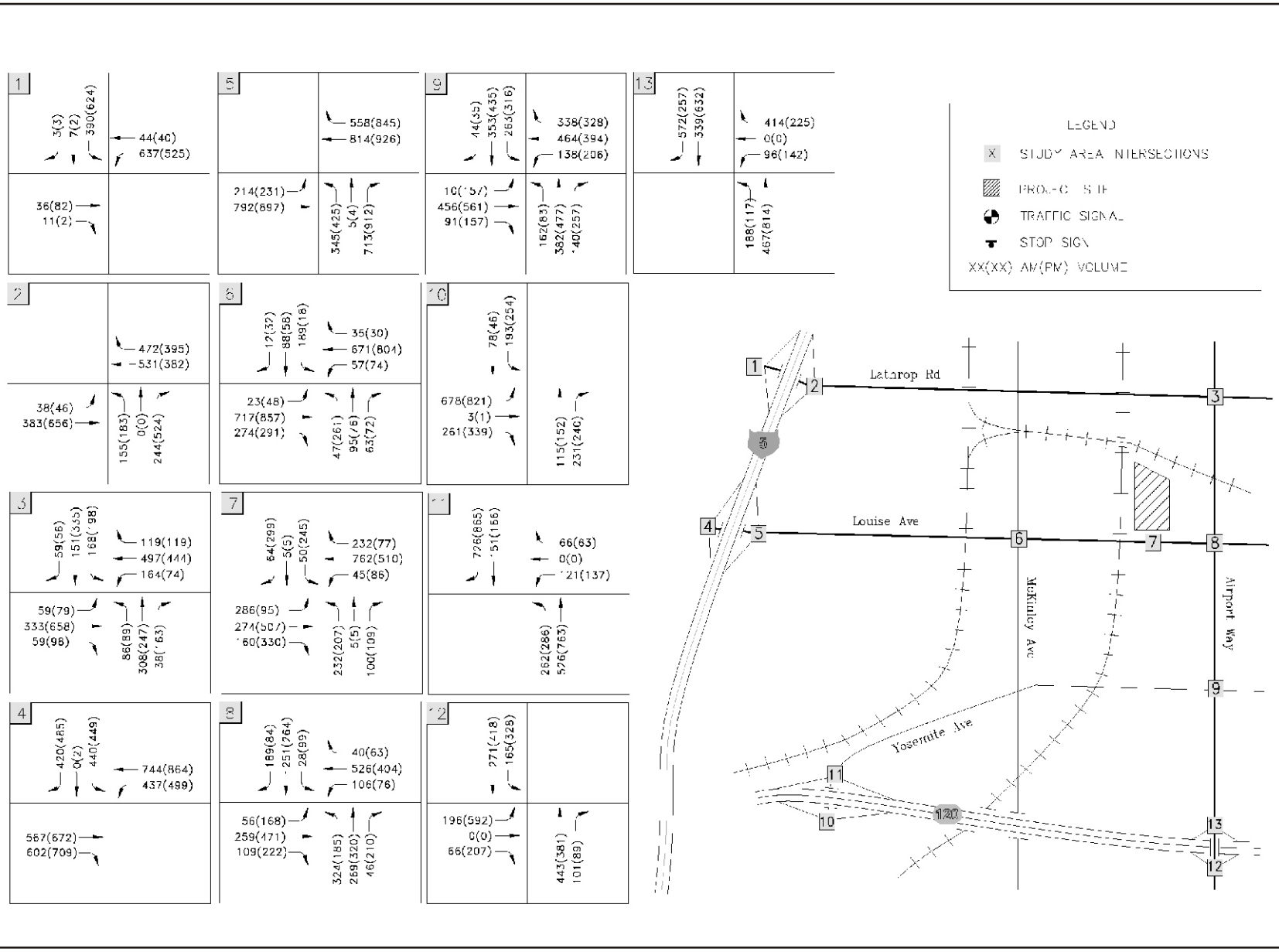


Source: Kimley-Horn and Associates, Inc., 2004.

NORTH NOT TO SCALE

Exhibit **5-2**

Long-Term Cumulative 2025 Traffic Volumes



Source: Kimley-Horn and Associates, Inc., 2004.

NOT TO SCALE

Michael Brandman Associates

Exhibit **5-3**

Long-Term Cumulative and Project Traffic Volumes

Table 5-1 (Cont.): Cumulative Conditions Level of Service Summary

Peak Period		Existing		Cumulative		Cumulative + Improvement		Cumulative + Project	
		AM	PM	AM	PM	AM	PM	AM	PM
Two-Way Stop Controlled Intersections									
1	I-5 SB Ramps / Lathrop Road								
	Southbound	**F**	**F**	—	—	—	—	—	—
	Westbound Left	A	A	—	—	—	—	—	—
2	I-5 NB Ramps / Lathrop Road								
	Northbound	B	**E**	—	—	—	—	—	—
	Eastbound Left	A	A	—	—	—	—	—	—
7	Project Driveway / Louise Avenue								
	Southbound	—	—	—	—	—	—	—	—
10	Yosemite Avenue / SR-120 EB Ramps								
	Eastbound	A	B	—	—	—	—	—	—
	Southbound Through-Shared-Left	A	A	—	—	—	—	—	—
11	Yosemite Avenue / SR-120 WB Ramps								
	Westbound	A	A	—	—	—	—	—	—
	Northbound Through-Shared-Left	A	A	—	—	—	—	—	—
12	Airport Way / SR-120 EB Ramps								
	Eastbound	C	**F**	—	—	—	—	—	—
	Southbound Left	A	A	—	—	—	—	—	—
13	Airport Way / SR-120 WB Ramps								
	Westbound	C	**E**	—	—	—	—	—	—
	Northbound Left	A	A	—	—	—	—	—	—
All-Way Stop Controlled Intersections									
8	Airport Way / Louise Avenue	**E**	**F**	—	—	—	—	—	—
Source: Kimley-Horn and Associates, Inc., May 2004.									

Cumulative Conditions without the Project

As shown in Table 5-1, several intersections will not meet established level of service thresholds under cumulative traffic conditions, even without the AIDP. Much of the congestion and related poor level of service is connected with significant development in Manteca and Lathrop, particularly on the west side of I-5. Therefore, it was assumed that several additional roadway improvements would occur in association with other cumulative development projects. The following briefly describes additional improvements assumed to be completed to support cumulative growth regardless of the industrial park.

- Lathrop Road/I-5 NB Ramps. Add a 300 foot northbound right turn lane to the off ramp. The change will improve the operation to LOS A in the AM and LOS C in the PM.

- Louise Avenue/SB I-5 Ramps. Add a westbound through lane, eastbound through lane, and an eastbound right lane. The change will improve the operation to LOS C in the AM and LOS D in the PM.
- Louise Avenue/NB I-5 Ramps. Add a westbound through lane and a 400 foot northbound left turn lane and restripe the approach to include a shared through-right lane and exclusive right turn lane. Making the change improves the level of service to C in the AM and D in the PM.
- Airport Way/SR-120 EB Ramps. Add a 100 foot eastbound right lane. The change will improve the operation to LOS B in the AM and LOS C in the PM.
- Yosemite Avenue/SR-120 EB Ramps. Add a 350 foot eastbound left and 100 foot eastbound right lane. Also restripe the eastbound approach to also have a shared left-through lane. Currently the ramp is striped as a shared left-through-right lane.

Cumulative Conditions with the Project

As shown in Table 5-1, future long-term operating conditions with the project are LOS D or better at all signalized study intersections. As seen in the table, only the Louise Avenue/SB I-5 Ramps intersection drops below an acceptable operation with the project, (assuming all the above projects are constructed as a result of other cumulative development). Evaluation of the intersection showed that the operation could be improved to LOS D in the AM and PM by adding a 300 foot southbound right turn lane at the intersection.

At the request of the City, eastbound queuing from the project driveway was evaluated and found to be less than 400 feet which is not expected to affect the operation of the nearby Union Pacific Railroad crossing.

Mitigation Measure

The intersection of I-5 SB Ramps / Louise Avenue is anticipated to operate at a LOS D in the AM peak hour and LOS E in the PM peak hour under the cumulative project scenario; thus, the following mitigation measure is recommended:

5-1: At the intersection of the I-5 SB Ramps / Louise Avenue, construct a 300 foot southbound right turn lane to the intersection. The ramp approach will require widening at the intersection.

Level of Significance After Mitigation

Implementation of the mitigation measure above will reduce cumulative traffic and circulation impacts to levels that are considered to be less than significant.

Air Quality

To assess the cumulative impacts of increased traffic generated by other planned developments, an analysis of future year 2025 peak hour volumes was developed. The year 2025 trip assignments were used as reported in the December 2003, Traffic Impact Analysis prepared by Kimley-Horn Associates.

Results of the year 2025 No Project and Project CO concentration analysis during the AM and PM Peak Hours are contained in Table 5-3 through 5-6. Based upon the results, CO concentration levels will meet federal and State air quality standards for the cumulative conditions.

Table 5-2: Local Roadway Air Quality Segment Analysis AM Cumulative No-Project (1 hour and 8 hour CO Concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	Description	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	4.03	3.21	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.2	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	4.9/4.4	3.8/3.4	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	4.25	3.35	No/No	No/No
Source: VRPA Technologies, May 2004.									

Table 5-3: Local Roadway Air Quality Segment Analysis PM Cumulative No Project (1 hour and 8 hour CO concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	Description	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	8.01	5.53	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.3	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	5.1/4.5	4.1/3.6	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	4.3	3.45	No/No	No/No
Source: VRPA Technologies, May 2004.									

Table 5-4: Cumulative Plus Project Local Roadway Air Quality Segment Analysis AM (1 hour and 8 hour CO concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	Description	Hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	4.03	3.21	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	6.6/6.7	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	6.0	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	5.0	3.3	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	5.6/5.0	4.1/3.6	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	5.8	3.45	No/No	No/No
Source: VRPA Technologies, May 2004.									

Table 5-5: Cumulative Plus Project Local Roadway Air Quality Segment Analysis PM (1 hour and 8 hour CO concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor (R1 and R2)		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	Description	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
Background Levels (ppm)		35.0	9.0	20.0	9.0	4.03	3.21	No/No	No/No
1	Louise Ave - (McKinley/Airport Way)	35.0	9.0	20.0	9.0	8.2/8.5	3.2/3.3	No/No	No/No
2	Louise Ave - (East of Airport Way)	35.0	9.0	20.0	9.0	7.0	3.2	No/No	No/No
3	Airport Way - (North of Louise)	35.0	9.0	20.0	9.0	5.3	3.3	No/No	No/No
4	Airport Way - (South of Louise)	35.0	9.0	20.0	9.0	6.4/5.4	4.3/3.7	No/No	No/No
Averages/Summary		35.0	9.0	20.0	9.0	6.8	3.5	No/No	No/No
Source: VRPA Technologies, May 2004.									

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative air quality impacts will occur under the AIDP.

Noise

Table 5-6, shows the cumulative noise conditions within the AIDP area. As identified in Table 5-6, the project is anticipated to contribute no more than 0.6 dBA to the cumulative noise environment.

Moreover, a comparison of the existing conditions (see Section 4.4 of this DEIR) wit the cumulative conditions indicates that the noise impacts range from 1.8 dBA to 3.8 dBA. A substantial increase in noise level is generally defined as 4 dBA; therefore, the project will not result in a significant adverse noise impact. Moreover, the residential homes located within the project area are planned for removal as development occurs in the AIDP area. Therefore, the AIDP is not considered to have a significant cumulative noise impact.

Table 5-6: Cumulative Noise Conditions

Receptor	Cumulative without Project (Ldn Predicted)	Cumulative with Project (Ldn Predicted)	Difference
1. Residence at 2075 Louise	73.3	73.5	0.2
2. Office Located on Louise	76.8	77.4	0.6
3. Residence at 891 Airport Way	68.6	69.2	0.6
4. Residence at 3399 Louise	72.3	72.6	0.3
5. Residence on cul-de-sac north of Geneva Way	64.5	65.1	0.6
6. Residence at 15887 Airport Way	71.2	71.8	0.6
Source: VRPA Technologies, May 2004.			

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
No significant cumulative noise impacts will occur under the AIDP.

Hydrology and Water Quality
Project implementation in conjunction with other projects in the surrounding area will result in development intensification within the cumulative project area. As with the AIDP, cumulative projects will be required seek approval from the City and the South San Joaquin Irrigation District (SSJID) to discharge into the French Camp Open Channel (FCOC) and retain storm water runoff until there is sufficient capacity within the FCOC. Moreover, the AIDP will improve the quality of storm water runoff by incorporating best management practices to treat storm water from impervious surfaces.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
No significant cumulative water quality impacts will occur under the AIDP.

Public Services and Utilities

Fire Services
The AIDP in conjunction with other related projects will result in an increased demand for fire services. As with the AIDP, projects located within the cumulative impact area will be required to contribute to the fire facility fee. Currently the Department is trying to establish a fire station within the Villa Ticino West residential project, which is south of the site. This facility could serve the AIDP. If a station is not located within the Villa Ticino West development, another location would

be chosen, which could serve the AIDP as well as surrounding developments. Therefore, the AIDP will result in a less than significant cumulative fire services impact.

Police Services

Collectively, the AIDP in conjunction with the cumulative projects will result in development intensification within the project area. Traffic related accidents tend to increase as development increases. Cumulatively, the projects identified in Section 5.4, will result in a greater demand for police services. However, development considered within the cumulative impact analysis is consistent with the General Plan and thus such development has been considered in Citywide planning programs. Moreover, the Manteca Police Department has indicated that it can serve the AIDP with the existing facilities, staff, and equipment. Therefore, the AIDP will result in a less than significant cumulative police services impact.

Water Services

As with the AIDP, future projects considered within this cumulative analysis will be required to pay a water development fee. According to the City of Manteca's General Plan Update 2023 Background Report, "Generally water facilities to serve demand created by new growth can be expanded relatively easily and in a cost effective manner by constructing transmission pipelines and wells." Cumulative projects will require the extension and/or upgrade of existing transmission and distribution systems; however, the cumulative projects are consistent with the land use designations outlined in the General Plan, and thus the provision of water services created by such development was considered in the context of serving new growth as envisioned by the City. Additionally, the City participates in the South County Surface Water Supply Project, which is anticipated to deliver 9,400 acre-feet of water to the City in the year 2005 and 24,500 acre-feet per year by the year 2025. Moreover, according to the City's Public Works Department, the AIDP impact will not impact the City's water service.[1] Therefore, the AIDP will result in a less than significant water services impact.

Solid Waste Services

Solid waste generation will increase incrementally with development. However, cumulative development will have to comply with the City policies in regard to the source reduction and recycling during both construction and operational phases. Therefore, while solid waste generation may incrementally increase, there is more opportunity to divert and recycle refuse, resulting in a less than significant cumulative solid waste impact.

Wastewater Services

The AIDP in conjunction with other cumulatively related projects will increase the demand for wastewater services. Currently, the City does not maintain any wastewater transmission or distribution systems within the project area. However, the City does plan to expand wastewater service to the project area, but not within the next five years. The City's Wastewater Quality Control Facility (WQCF) is undergoing phase improvements that are scheduled to be completed in December 2005. These improvements will increase the treatment capacity of the WQCF by 10 mgd. Under the WQCF's current configuration, it can be expanded to ultimately treat 25 mgd. Similar to the AIDP, prior to the City's extension of wastewater services to the project area, cumulative projects will be required to provide verification of the installation of adequate wastewater services to serve such projects. Thus, the AIDP is not considered to have a significant cumulative wastewater impact.

Energy Resources

Like the AIDP, the development of the projects considered within this cumulative analysis will require the expansion of distribution and transmission lines and related facilities. However, according to PG&E, the expansions of distribution and transmission lines and related facilities are necessary consequences of growth and development. PG&E assesses design requirements for facilities on the

[1] Personal communication with Keith Conarroe, June 2003.

plans submitted by developers and applicants as development progresses. Individual developers will be responsible for the costs associated with any relocation of existing PG&E facilities. If required, the AIDP proponent will pay for any relocations of PG&E facilities as a consequence of project development. Thus, the AIDP is considered to have a less than significant cumulative energy resources impact.

Solid Waste Services

Solid waste generation will increase incrementally with development. However, cumulative development will have to comply with the City policies in regard to the source reduction and recycling during both construction and operational phases. Therefore, while solid waste generation may incrementally increase, there is more opportunity to divert and recycle refuse, resulting in a less than significant cumulative solid waste impact.

Wastewater Services

The AIDP in conjunction with other cumulatively related projects will increase the demand for wastewater services. Currently, the City does not maintain any wastewater transmission or distribution systems within the project area. However, the City does plan to expand wastewater service to the project area, but not within the next five years. The City's Wastewater Quality Control Facility (WQCF) is undergoing phase improvements that are scheduled to be completed in December 2005. These improvements will increase the treatment capacity of the WQCF by 10 mgd. Under the WQCF's current configuration, it can be expanded to ultimately treat 25 mgd. Similar to the AIDP, prior to the City's extension of wastewater services to the project area, cumulative projects will be required to provide verification of the installation of adequate wastewater services to serve such projects. Thus, the AIDP is not considered to have a significant cumulative wastewater impact.

Energy Resources

Like the AIDP, the development of the projects considered within this cumulative analysis will require the expansion of distribution and transmission lines and related facilities. However, according to PG&E, the expansions of distribution and transmission lines and related facilities are necessary consequences of growth and development. PG&E assesses design requirements for facilities on the plans submitted by developers and applicants as development progresses. Individual developers will be responsible for the costs associated with any relocation of existing PG&E facilities. If required, the AIDP proponent will pay for any relocations of PG&E facilities as a consequence of project development. Thus, the AIDP is considered to have a less than significant cumulative energy resources impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No significant cumulative public services and utilities impacts will occur under the AIDP.

5.4.2 - Conclusion

With the exception of cumulative noise impacts, the AIDP is not anticipated to contribute to significant cumulative impacts that cannot be feasibly mitigated to levels that are considered less than significant.

SECTION 6:
ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the CEQA Guidelines, as amended, mandates that an EIR include a comparative evaluation of the AIDP with Alternatives to the project, including a No Project Alternative. This section focuses on Alternatives, as identified in § 15126(d)(2) of the CEQA Guidelines, to the AIDP that are capable of avoiding or substantially lessening any significant adverse impact associated with the AIDP—even if these Alternatives would to some degree impede the attainment of project objectives or be more costly. The Alternatives may result in new impacts that do not result from the AIDP. CEQA requires that this analysis explain why the Alternatives and related mitigation measures would not be preferable to the AIDP.

Case law suggests that discussion of Alternatives need not be exhaustive and that Alternatives be subject to reasonable construction. CEQA Guidelines § 15126(d)(3) states that impacts resulting from the Alternatives may be discussed "in less detail than the significant effects of the project as proposed."

The project alternatives evaluated in this section are:

- No Project/No Development Alternative
- Reduced Density Alternative

An Environmentally Superior Alternative will be selected from among the two alternatives. An Alternative that is environmentally superior will result in the fewest or least significant environmental impacts and will achieve the project objectives of the planning effort.

As stated in Section 3, Project Description, of this DEIR, the project objectives are:

- Provide new employment opportunities for the community and its residences.
- Assist in balancing the disproportionate jobs-to-housing ratio in the community.
- Increase the disproportionate economic revenue base (related to jobs and housing) of the community.
- Alleviate the number of commuter trips outside of the community.

The analysis of the Alternatives assumes that all applicable mitigation measures associated with the project will be implemented with the appropriate Alternatives. However, applicable mitigation measures may be scaled to reduce or avoid a potential impact of the Alternative under consideration and may not precisely match those identified for the AIDP.

6.1 - No Project/No Development Alternative

Under the No Project/No Development Alternative (No Project Alternative), the entire project site would remain unchanged and no new development would occur onsite. The 1,400,000 square feet of industrial warehouse development would not occur under this scenario. The AIDP area would continue to exist as vacant undeveloped land.

6.1.1 - Impact Analysis

Land Use and Planning

As identified in Section 4.1, Land Use, of this DEIR, that while allowed under the General Plan designation, implementation of the AIDP will result in the placement of industrial land uses adjacent

to future residential land uses, specifically the proposed Villa Ticino development located south of the project site. However, with the appropriate site design review, as identified in Section 4.1, the project's land use compatibility impacts will be reduced to less than significant. Similarly, the No Project Alternative would not result in land use incompatibilities, since the site would remain vacant and undeveloped under this Alternative. However, implementation of the No Project Alternative is inconsistent with the goals and policies of the Manteca General Plan Update 2023, which promotes industrial sector employment development and encourages the provision of land uses that expand employment. Therefore, since the AIDP can mitigate its land use compatibility impacts and the AIDP is consistent with the goals and policies of the General Plan, the AIDP is considered to have fewer land use and planning impacts in relation to the No Project Alternative.

Transportation and Circulation

The No Project Alternative would not result in generation of any additional traffic within the project area. As identified in Section 4.2, Transportation and Circulation, of this DEIR, the AIDP will not result in any significant traffic impacts and with the incorporation of the recommended mitigation measures, project and cumulative related impacts will be reduced to less than significant levels. However, since the No Project Alternative would not result in any traffic generation, this Alternative is considered to have less transportation and circulation impacts in relation to the AIDP.

Air Quality

No new short-term construction or long-term operational air quality emissions would occur as a result of the No Project Alternative. As identified in Section 4.3, Air Quality, of this DEIR, the AIDP is not considered to result in any significant air quality impacts with the implementation of the recommended mitigation measures. However, since this Alternative would not result in any new development that would create increased air emissions, the No Project Alternative is considered to have less air quality impacts in relation to the AIDP.

Noise

The No Project Alternative would not result in any short-term construction or long-term operational phase noise impacts associated with the AIDP. As identified in Section 4.4, Noise, of this DEIR, the AIDP's cumulative noise impacts cannot be mitigated to a level that is considered less than significant. Since this Alternative would not result in any new development that would create increased traffic-related or other noise sources, the No Project Alternative is considered to have less noise impact in relation to the AIDP.

Hydrology and Water Quality

Implementation of the No Project Alternative would not result in any development on the project site. Therefore, no changes to existing hydrology and water quality conditions would occur. As a result, no impacts would occur under this Alternative. As identified in Section 4.5, Hydrology and Water Quality, of this DEIR, the AIDP is considered to have less than significant hydrology and water quality impacts. Yet, the No Project Alternative would not result in the development of impermeable surfaces, thus, the No Project Alternative is considered to have less hydrology and water quality impacts in relation to the AIDP.

Public Services, Utilities and Energy Consumption

The No Project Alternative would not require extension and/or upgrades of utilities to the site. Moreover, the No Project Alternative would not result in generating a greater demand for public services and utilities. As noted in Section 4.6, Public Services, Utilities and Energy Consumption, of this DEIR, the AIDP is considered to have less than significant public services and utilities impacts. However, the No Project Alternative would not result in an increase in demand for these utilities or services; thus, the No Project Alternative is considered to have less public services and utilities impact in relation to the AIDP.

6.1.2 - Conclusions

The No Project Alternative would result in fewer transportation and circulation, air quality, noise, hydrology and water quality, and public services and utilities impacts when compared to the AIDP. Under the No Project Alternative, the site would remain in its present state: vacant and undeveloped, which would not result in accomplishing the objectives of the AIDP.

6.2 - Reduced Density Alternative

This Alternative is an overall reduction in development within the AIDP area. While similar to the AIDP, the Reduced Density Alternative results in exactly one-half of the square footage of the same land uses proposed under the project. Specifically, the Reduced Density Alternative would result in 700,000 square feet of industrial warehouse development.

6.2.1 - Impact Analysis

Land Use and Planning

The Reduced Density Alternative is consistent with the goals and policies of the Manteca General Plan Update 2023. The reduction in development intensity assumed for this Alternative would result in the same physical land use impacts to onsite and surrounding land uses, but at a lesser scale, and the same conclusions with respect to consistency with the City's General Plan and other related planning programs. This Alternative would result in similar land uses and planning impacts as that of the AIDP.

Transportation and Circulation

It is estimated that the Reduced Density Alternative would generate fifty percent less daily vehicle trips than the AIDP. As identified in Section 4.2, Transportation and Circulation, of this DEIR, all project and cumulative-related transportation and circulation impacts can be reduced to levels that are considered less than significant. However, the Reduced Density Alternative would result in generating less traffic than the AIDP. Therefore, the Reduced Density Alternative is considered to have less transportation and circulation impacts in relation to the AIDP.

Air Quality

Vehicle emissions are the primary source of air pollutants. Therefore, air emissions would be incrementally reduced with the reduction in construction and long-term vehicle trips under the Reduced Density Alternative. Although the Reduced Density Alternative would generate less air emissions than the AIDP, air quality impacts associated with the AIDP can be mitigated to levels that are considered less than significant. However, since the Reduced Density Alternative would generate less air quality emissions, this Alternative is considered to have less air quality impacts in relation to the AIDP.

Noise

The Reduced Density Alternative would have fewer long-term vehicular noise impacts than the AIDP. Construction related noise would also be less because of the reduced intensity of development. Although the Reduced Density Alternative would generate less noise than the AIDP, noise levels associated with the AIDP cannot be mitigated to levels that are considered less than significant. Regardless, since the Reduced Density Alternative would generate less noise, this Alternative is considered to have fewer noise impacts in relation to the AIDP.

Hydrology and Water Quality

Similar to the AIDP, implementation of the Reduced Density Alternative would result in introducing impermeable surfaces into the project area and storm water runoff and non-point source pollutants would be generated. As with the AIDP, the Reduced Density Alternative would be required to comply with the City's Storm Water Management Program. However, since the Reduced Density Alternative would result in less construction and ultimately less impermeable surfaces, this

Alternative would result in less hydrology and water quality impacts. Therefore, this Alternative is considered to have less hydrology and water quality impacts in relation to the AIDP.

Public Services and Utilities

Similar to the AIDP, this Alternative would require upgrades and/or extensions of public services and utilities. In comparison to the AIDP, the Reduced Density Alternative would result in an incremental decrease in the demand for public services and utilities. However, as identified in Section 4.6, Public Services, Utilities and Energy Consumption, of this DEIR, the project's public services and utilities impacts will be mitigated to a level that is considered less than significant. Yet, since the Reduced Density Alternative would not generate as great of a demand for public services and utilities, this Alternative is considered to have less public service and utilities impacts in relation to the AIDP.

6.2.2 - Conclusions

The Reduced Density Alternative would result in less transportation and circulation, air quality, noise, hydrology and water quality, and public services and utility systems, impacts. Under this Alternative, the site would be developed with 700,000 square feet of industrial warehouse land uses. This Alternative would obtain some but not all of the project objectives. More specifically, the Reduced Density Alternative would not, to the maximum extent feasible, accomplish the objective of the AIDP.

6.3 - Environmentally Superior Alternative

The Environmentally Superior Alternative is selected among the preceding Alternatives and the AIDP. An Alternative that is environmentally superior will result in the fewest or least significant impacts and will feasibly attain most of the objectives of the planning effort. Based on the evaluation of the Alternatives in this section, the No Project/No Development Alternative would result in fewer significant impacts than the AIDP. CEQA states that if the Environmentally Superior Alternative is the No Project Alternative, the DEIR shall also identify an Environmentally Superior Alternative from other Alternatives. The Reduced Density Alternative is thus the environmentally superior Alternative. However, while this Alternative is determined to be environmentally superior to the AIDP, in relation to transportation and circulation, air quality, noise, hydrology and water quality, and public services, utilities and energy consumption, it would not obtain some of the key objectives of the AIDP. Specifically, by reducing the scale of the project, the Reduced Density Alternative would not accomplish, to the maximum extent feasible, new employee opportunities, balance the City's economic revenue base and jobs-to-housing ratio, or the number of commuter trips.

SECTION 7:
ORGANIZATIONS AND PERSONS CONSULTED

7.1 - Public Agencies

Manteca Public Works Department..... Phil Govea
Keith Canarroe
Joe Wells
Don Milam

Manteca Solid Waste Division..... Rexie LeStrange

Manteca Police Department .....Dave Bricker

Manteca Fire Department..... George Quaresma

San Joaquin County Solid Waste Division.....Jaime Perez

7.2 - Private Organizations

Pacific Gas and Electric.....Bob Jones

SECTION 8:
REPORT PREPARATION PERSONNEL

8.1 - City of Manteca

Community Development Department..... Ben Cantu
Kathy Wold

8.2 - Michael Brandman Associates

Principal-In-Charge/Project Manager ..... Jason M. Brandman
Assistant Project Manager..... Kara Palm
Editor..... Sandra Tomlin
Graphics..... Karlee Haggins
Word Processing.....Angel Penatch
Shelly Rather
Reproduction .....José Morelos

8.3 - Technical Subconsultants

Kimley-Horn and Associates, Inc.
Traffic Impact Study .....Jim West, P.E.

VRPA Technologies
Air and Noise Analysis.....Amy Clark Fischer

SECTION 9: REFERENCES

California, State of. 1999. *California Public Resources Code, Division 13, Sections 21000-21178.1. The California Environmental Quality Act.*

California, State of, Governor's Office of Planning and research and Office of Administrative Law. 1999. *Title 14, California Code of Regulations, Chapter 3, Guidelines for the Implementation of the California Environmental Quality Act.*

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Manteca, City of. 2003 (April). *City of Manteca General Plan 2023 Background Report.*

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Wade Associates. 2003 (June). *Manteca General Plan 2023 Draft Environmental Impact Report.*

A-2: Draft EIR Appendices

APPENDIX A:
IS/NOP AND RESPONSES

INITIAL STUDY

(Completed by Community Development Staff)

A. BACKGROUND:

1. Project Proponent: R.B. Welty & Associates
2. Proponent Phone Number: (209) 526-1515
3. Proponent Address: 521 13th Street, Modesto, CA
4. Property Owner: Assieh Development Corporation
5. Owner Phone Number: (408) 453-2477
6. Owner Address: 855 Service Street, Suite B , San Jose, CA 95112
7. Project Title: Assieh Industrial Project
8. Project Location: 2403 Louise Avenue
9. Questionnaire Submittal Date: July 30, 2001
10. Assessor Parcel No.: 195-500-02
11. Staff Contact Person: Benjamin Cantu
12. Staff Contact Phone Number: (209) 239-8424
13. General Plan Designation: Heavy Industrial
14. Zoning Designation: Heavy Industrial (M-2)

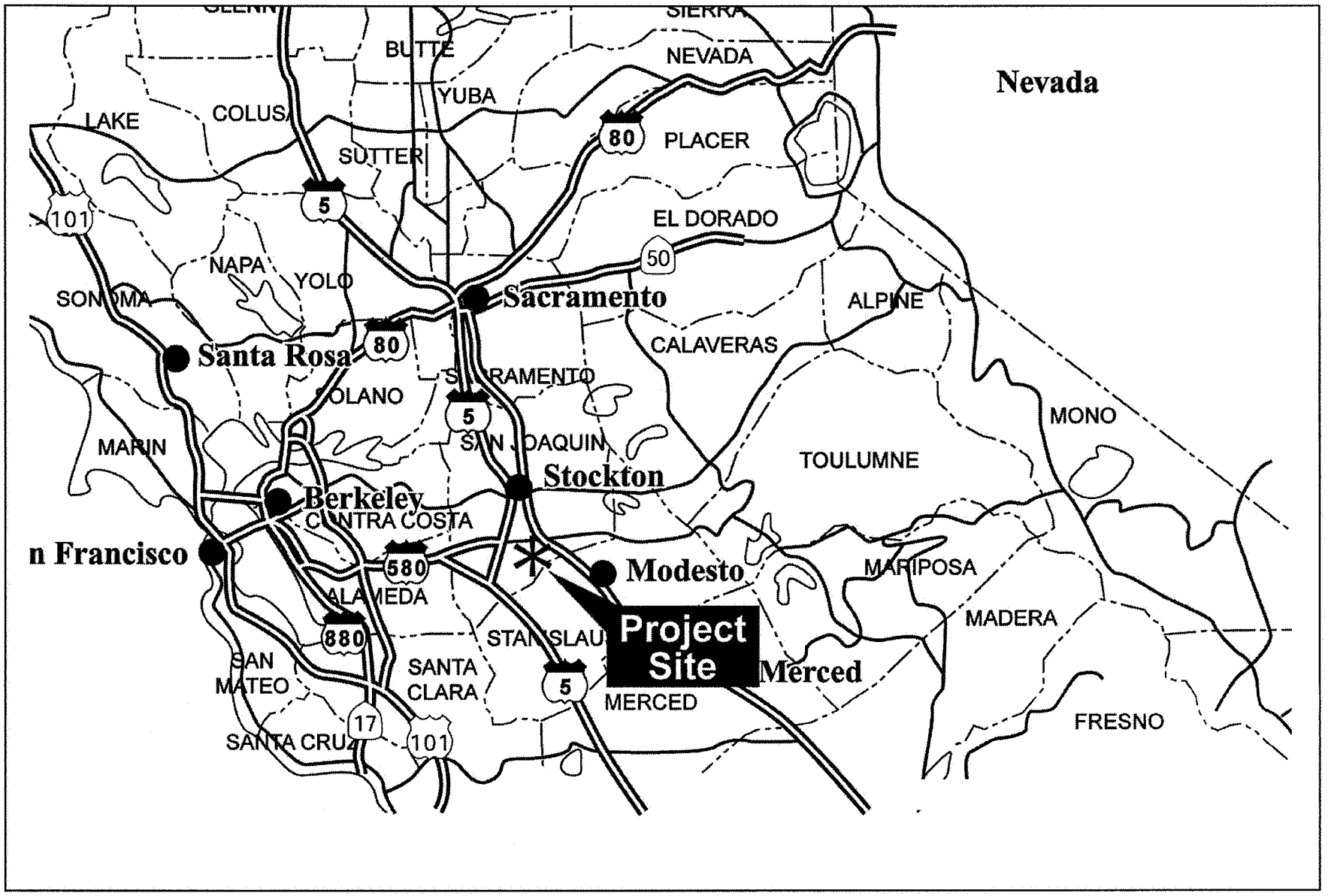
B. DESCRIPTION OF PROJECT: The proposed project entails the development of an 80-acre Industrial Park, consisting of six industrial warehouse structures, to be constructed in two phases. The first phase will result in the construction of approximately 521,730 square feet of warehouse structures and associated ancillary features and the second phase will result in the development of approximately 882,950 square feet of warehouse structures and associated ancillary features. In all, the proposed project will result in approximately 1,400,000 square feet of development. Project improvements will include paved surface area, drive and access ways for 124 truck trailer parking spaces, 942 standard automobile parking spaces, 420 compact automobile parking spaces, and 38 accessible parking spaces. Ancillary features include three retention ponds and trash enclosures. Additionally, at least five percent of the project site will be landscaped and an earthen berm is to be constructed along Louise Avenue.

As proposed, the project will have a singular vehicular access at Louise Avenue.

C. PROJECT SETTING: The proposed project is located in the City of Manteca, San Joaquin County, California (see Exhibit 1 and 2).The project is located along the northern side of Louise Avenue approximately one-half mile west of Airport Way in western Manteca, near the City's border with Lathrop (see Exhibits 3a and 3b). Surrounding land uses include pasture lands to the north, residentially zoned lands that are supporting agricultural use to the south, Manteca Unified School District administrative offices and a school farm to the east, and industrially zoned lands that are supporting agricultural uses to the west. Immediately to the west of the project site is the French Camp Drain. Union Pacific Railroad lines are located immediately to the north, and west of the site.

D. OTHER PUBLIC AGENCIES APPROVAL: (List public agencies whose approval is required (e.g., permits, financing approval, or participation agreement, etc.)

N/A



NORTH

30 15 0 30

APPROXIMATE SCALE IN FEET

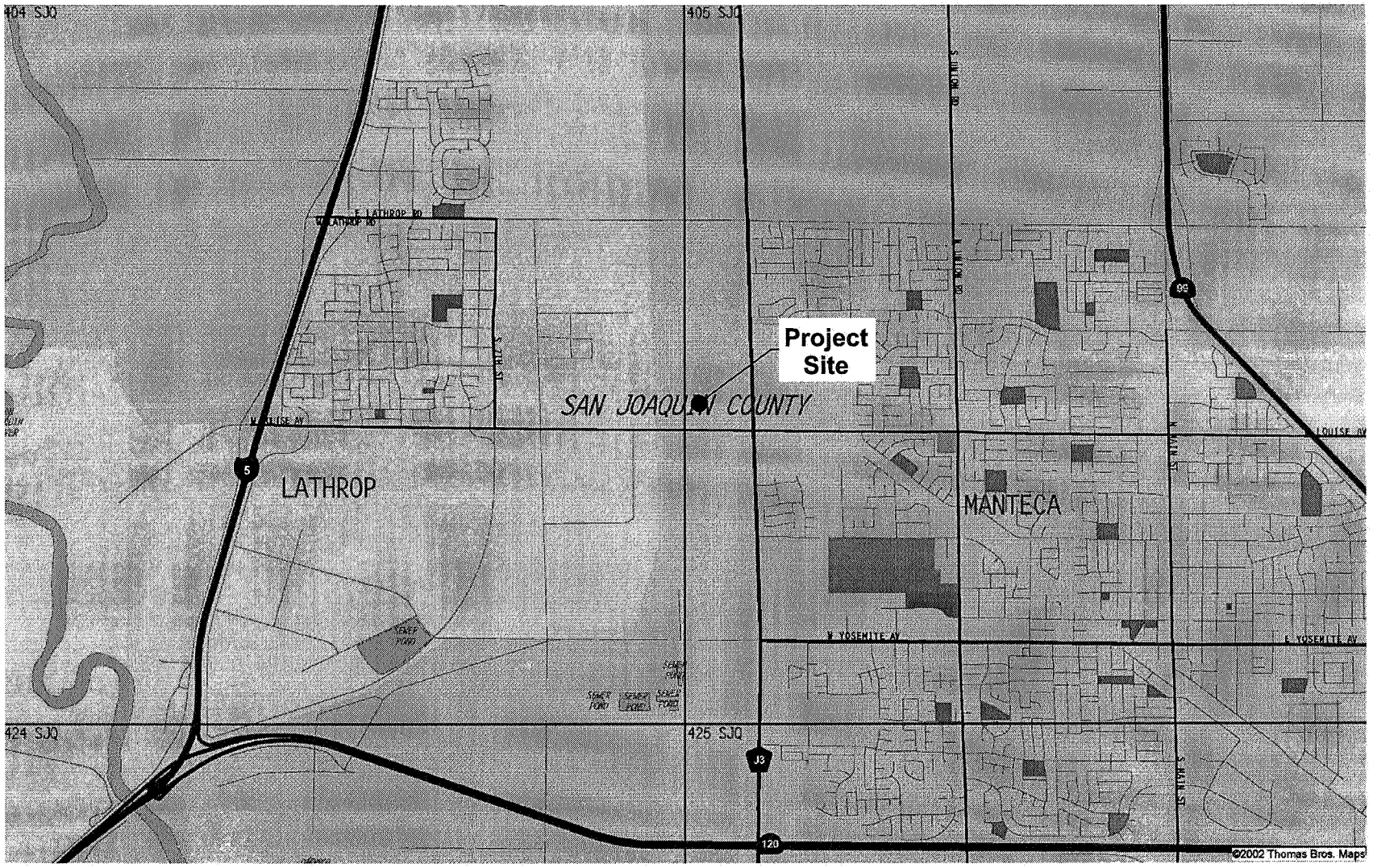
Michael Brandman Associates

24820001 • 04/2003

Exhibit **1**

Regional Location Map

ASSIEH INDUSTRIAL DEVELOPMENT - IS/NOP



Source: 2003 Thomas Bros. Map, Digital Edition.

NORTH

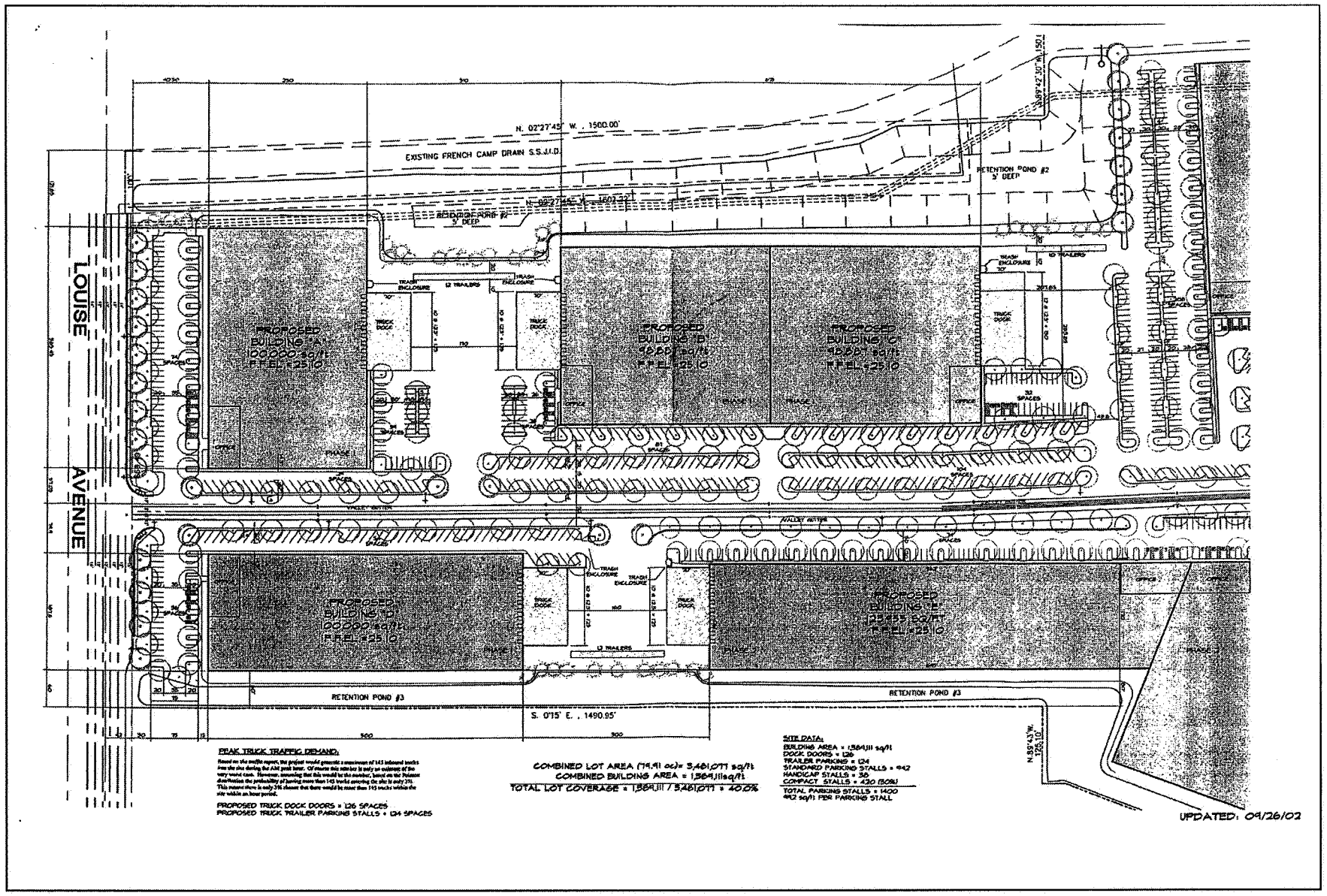
Michael Brandman Associates

24820001 • 04/2003

Exhibit **2**

Local Vicinity Map

ASSIEH INDUSTRIAL DEVELOPMENT - IS/NOP



Source: R.B. Welty & Associates, Inc. 2002.

NORTH

18 9 0 18

APPROXIMATE SCALE IN FEET

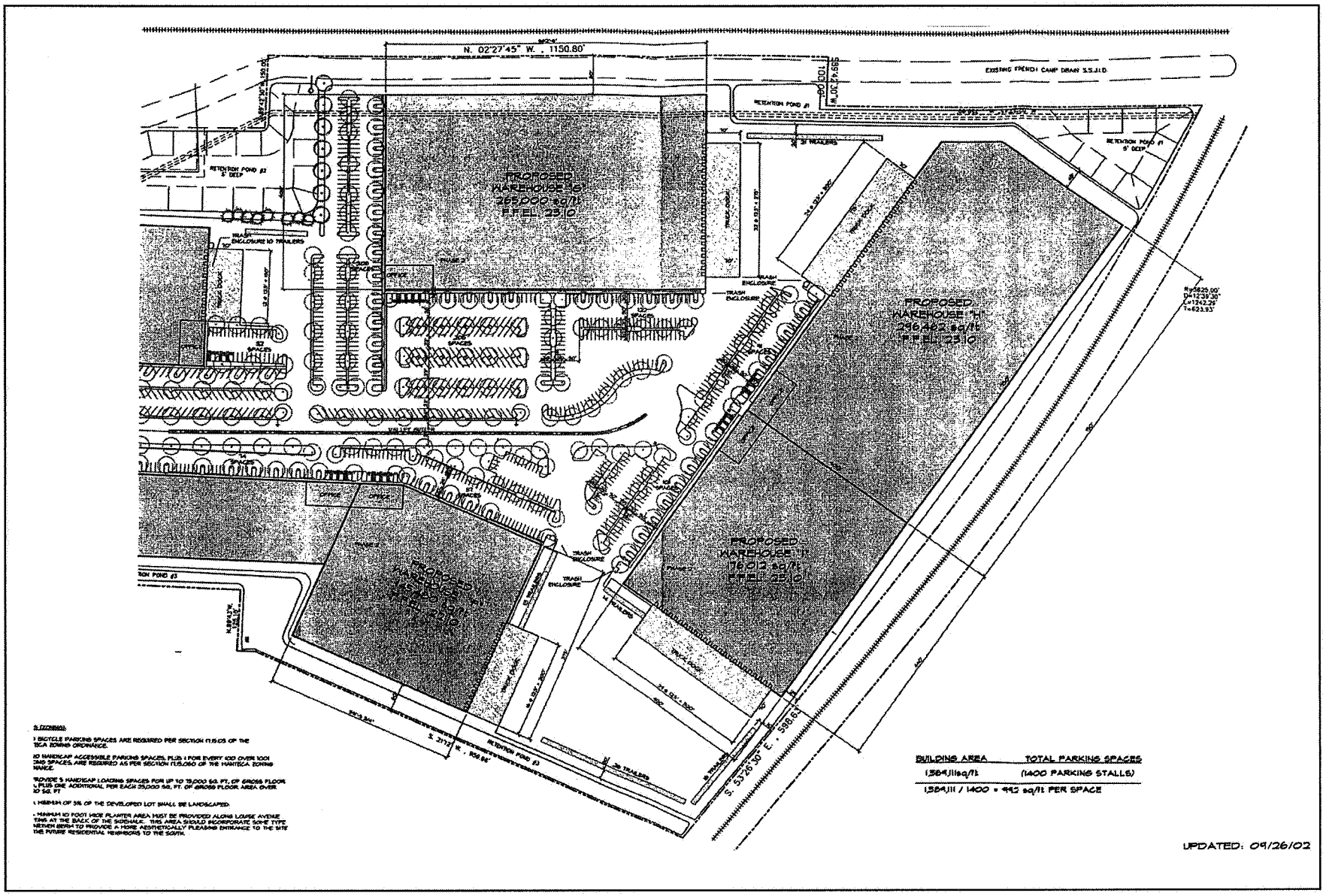
Exhibit **3A**

Site Plan

Michael Brandman Associates

24820001 • 04/2003

ASSIEH INDUSTRIAL DEVELOPMENT - IS/NOP



Source: R.B. Welty & Associates, Inc. 2002.

NORTH

32 18 0 32

SCALE IN FEET

Exhibit **3B**

Site Plan

Michael Brandman Associates

24820001 • 04/2003

ASSIEH INDUSTRIAL DEVELOPMENT - IS/NOP

E. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: (The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality	☒ Land Use/Planning
☐ Mineral Resources	☒ Noise	☐ Population/Housing
☒ Public Services	☐ Recreation	☒ Transportation/Traffic
☒ Utility/Service Systems	☒ Mandatory Findings of Significance	

F. DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. PROJECT PROPONENT ACKNOWLEDGEMENT OF MITIGATION MEASURES MUST BE SIGNED BEFORE PUBLIC REVIEW PERIOD BEGINS.

☒ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Project Proponent Acknowledgement Of Mitigation Measures:

As project proponent, or legal representative thereof, I hereby acknowledge those mitigation measures identified within this document, and agree to comply with and implement the mitigation measures in order to clearly avoid or mitigate significant impacts identified or incorporated by reference by this Initial Study and Mitigated Negative Declaration.

Signature of Project Proponent	Date
Print Name of Project Proponent	Phone Number
Chairman, Environmental Review Committee (Signature)	Date 5/9/03
Printed Name: Jason M. Bradman For Ben Cardo, Advance Planning Manager	For

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

G. EVALUATION OF ENVIRONMENTAL IMPACTS: (Describe mitigation measures and explain how they reduce the identified impact to a less than significant level and/or cross-reference an earlier analysis. Any potentially significant impact identified in the Initial Environmental Study and for which mitigation is not incorporated will necessitate the preparation of an EIR.)

1. Aesthetics. *Would the project:*

a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage a scenic resource, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?			X	

As stated in the *Background Report General Plan Update* 2023, "Typical of the Central Valley, the Manteca area is virtually flat," further, "With the exception of views from highway overpasses that provide brief panoramic views, the entire cityscape and landscape are viewed from the ground level perspective." The proposed project is not located in a visually sensitive area. The project site itself has been rough graded and no vegetation exists onsite. The project site is unimproved and there are no structures onsite with the exception of electrical transmission poles. Project implementation will nominally alter the existing visual environment but it will not degrade the visual character of the project site and surrounding area. Project design includes that a minimum of five percent of the site will be landscaped and signage will be in accordance with Chapter 17.17 of the City of Manteca zoning ordinance. The proposed project will introduce new sources of light and glare; however, the project will be required to adhere to the standards set forth in Chapter 17.19 of the City's Zoning code, that ensures that onsite glare is minimized. Therefore, no significant aesthetic impacts would occur from project implementation.

2. Agriculture Resources. *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:*

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

According to the City of Manteca *Background Document General Plan Update 2023*, there are no designated agricultural soils or lands protected under the Williamson Act within the project area. The project site is zoned as Heavy Industrial. Presently, the site is vacant; however, in the recent past the project site has been utilized as a magnesium processing facility, fertilizer production facility, and a composting recycling facility; thus the project will not convert farmland to non-agricultural land uses. Therefore, no significant impacts from development will occur on agricultural resources.

3. Air Quality. *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:*

a. Conflict with or obstruct implementation of the applicable air quality plan?	X			
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
d. Expose sensitive receptors to substantial pollutant concentrations?				X
e. Create objectionable odors affecting a substantial number of people?				X

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

San Joaquin County is currently in a non-attainment for Ozone and PM10. In the short-term, project related construction activities will generate emissions from the movement of soil, use of heavy equipment, bulk materials handling, asphalt paving, demolition of any onsite structures, and other related activities. In the long-term, the proposed project will introduce truck and vehicle trips into the project area. If vehicles idle for a significant period of time, this could result in generating elevated levels of CO or CO hotspots. The San Joaquin Valley Air Pollution Control District performed a cursory analysis of long-term traffic impacts, which indicated that the project will exceed significance thresholds for NOx and ROG. An air quality assessment will be performed in conjunction with the preparation of the EIR. This assessment will be summarized in the EIR and, as appropriate, mitigation measures will be recommended.

4. Biological Resources. *Would the project:*

a. 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 by the California Department of Fish and Game or US Fish and Wildlife Service?				X
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c. 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?				X
d. 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?				X
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f. Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

According to the *Background Report General Plan Update 2023*, the project site is not considered to be located in an area that contains sensitive biological resources. The site has been previously graded and has been previously utilized for industrial uses, including a Department of Defense magnesium processing facility, fertilizer production facility, and compost recycling facility. As indicated previously, the project site has been rough graded and no vegetation exists onsite There are no wetlands onsite and project implementation will not result in interfering with the movement of wildlife. The project will not conflict with any local, regional or state habitat conservation plans. Therefore, implementation of the proposed will not significantly impact biological resources.

5. Cultural Resources. *Would the project:*

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				X
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d. Disturb any human remains, including those interred outside of formal cemeteries?				X

As indicated previously, prior uses of the project site include a magnesium processing facility, fertilizer production facility, and a composting recycling facility. If cultural resources were located onsite it is likely that past uses would have unearthed any unknown cultural resources. The City of Manteca General Plan does not identify any known prehistoric or historic archeological site, historic building or object, unique ethnic values, or a known religious or scared use on the project site. Therefore, impacts to cultural resources are not expected to occur.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
6. Geology and Soils. *Would the project:*				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
2. Strong seismic ground shaking?			X	
3. Seismic-related ground failure, including liquefaction?				X
4. Landslides?				X
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

The project site is not located within an Alquist Priolo Fault Zone. There are no known faults located within or adjacent to the project area; however, the project area may experience ground shaking as a result of activity on other faults within the region. Area terrain is flat; thus, no landslides are anticipated. The probability of liquefaction taking place is considered relatively small due to the site's distance to major faults. According to the Soil Conservation Service Soil Survey of San Joaquin County (1988) of subsidence is not considered a concern within the project area. According to the *Background Report General Plan Update* 2023, the project site is not located in an area with expansive soils. While, the potential of erosion to occur in association with high winds is considered to be moderate to high during the spring, summer, and fall, conformance with Best Management Practices as required, will reduce erosion impacts to less than significant. The proposed project does not involve the use of septic tanks or alternative wastewater disposal systems.

The proposed project will be subject to a Building Plan review and required to adhere to the Uniform Building Code, which stipulates building structural material and reinforcement and the California Health and Safety Code Section 19100, which requires buildings to be designed to reduce stresses produced by natural forces.

7. Hazards and Hazardous Materials. *Would the project:*				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e. For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where residences are intermixed with wildlands?				X

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

The proposed project would be used for warehouse and distribution of goods and is not expected to result in the use and/or transport of hazardous materials to and from the site. The Department of Health Services (DHS) conducted a sampling inspection of abandoned magnesium piles at the project site in 1988. The determination of DHS was that the samples collected did not meet the criteria used to identify hazardous wastes. Enviro Soil Tech Consultants conducted a site visit in November 2001. The site visit included an inspection of the property and the two-onsite structures. The inspection did not reveal any abnormal conditions or any indication of underground or above ground storage tanks. Enviro Soil Tech also consulted state and local regulatory lists. The project site was not listed in any agency files. The project would not interfere with adopted emergency response or evacuation plans and will be in compliance with the California Vehicle Code 31303. The project site is not located within an airport vicinity plan, near a private airstrip, or within proximity to wildlands. Therefore, implementation of the proposed project is not expected to result in hazards and hazardous materials impacts.

8. Hydrology and Water Quality. *Would the project:*

a. Violate any water quality standards or waste discharge requirements?				X
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?		X		
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on-or off-site?		X		
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?		X		
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X
i. Expose people or structures to a significance risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X

Important water resources within and adjacent to the City of Manteca include the San Joaquin River and its tributaries and a major groundwater basin, which supplies the potable water for the City. The proposed project will introduce impervious surfaces into the project area, which will alter onsite hydrology. Project design includes five detention ponds, which will detain water before being discharged, through controlled outlets into the French Camp Drain. Additionally, the introduction of impervious surfaces into the project area will alter groundwater recharge. The proposed industrial land uses may result in the transport of surface water contaminants such as particulate matter, residuals, such as hydrocarbons from automobiles and trucks, and organic matter from roof tops, roadways, landscaped areas, parking lots, and other exposed areas into the storm drain system. The proposed project is not located within a 100-year flood hazard area. The EIR will further examine the potential for project related hydrology and water quality impacts. As applicable, mitigation measures will be recommended.

9. Land Use and Planning. *Would the project:*

a. Physically divide an established community?				X
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X		
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact

Presently, the project site is vacant, thus the proposed project will introduce industrial land uses to the project area. The General Plan land use designation for the project site is Heavy Industrial and zoned as Heavy Industrial M-2. The project site is surrounded by pasture lands to the north, residentially zoned lands to the south (a portion of which is the proposed 1,384 unit Villa Ticino development), school district administrative offices and a school farm to the east, and the French Camp Drain and the Union Pacific Railroad lines to the west. There is the potential for the industrial land uses to conflict with the existing and future land uses within the project area. The EIR will further address potential project related land use impacts and as applicable, mitigation measures will be recommended.

10. ***Mineral Resources.*** *Would the project:*

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

According to the Manteca General Plan, the site is not designated as an area that is considered to contain significant mineral resources. Project implementation will not result in the loss of minerals of local, regional, or state-wide importance. Therefore, no mineral resource impacts are expected to occur from project development.

11. **Noise**. *Would the project result in:*

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e. For a project located within an airport land use plan or, where such a plan has been adopted, within two miles or a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

The proposed project will result in contributing to the ambient noise environment in both the short-term and long-term. In the short-term typical construction activities such as the operation of bulldozers, front loaders, scrapers, pumps, generators, compressors, etc., will elevate noise levels on the project site and the surrounding areas. In the long-term, project related automobile and truck traffic will contribute to the ambient noise environment, especially if trucks idle for substantial periods of time. A noise assessment will be prepared, which will be summarized in the EIR. As applicable, mitigation measures will be recommended.

12. **Population and Housing.** *Would the project:*

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

While project implementation will require extensions to connect to current infrastructure (water, gas, electricity, etc.) no new significant infrastructure will be required, which will result in accommodating growth beyond the project site. With the exception of access drives and onsite circulation, no new roadways will be required to service the site. The project site is currently vacant; thus, project implementation will not result in displacing housing or populations. Therefore, implementation of the proposed project would not result in significant impacts to population and housing.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
13. Public Services. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
1. Fire protection?		X		
2. Police protection?		X		
3. Schools?				X
4. Parks?				X
5. Other public facilities?				X

The proposed project will introduce both automobile and truck traffic into the project area. With the increase in traffic, it is anticipated that there will be an increase in traffic related accidents, which will require the services of the police and/or fire department. Due to the type of project (non-residential), development of the site is not expected to impact schools, parks, or other pertinent public facilities. The EIR will address the potential for project related public service impacts and, as applicable, mitigation measures will be recommended.

14. Recreation.				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X

The proposed project will not reduce the amount of available parkland nor will it generate a demand for additional parkland. The proposed project is not anticipated to have any recreational impacts.

15. Transportation/Traffic. *Would the project:*				
a. Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		X		
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?		X		
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e. Result in inadequate emergency access?				X
f. Result in inadequate parking capacity?				X
g. Conflict with adopted polices, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

A traffic impact analysis was prepared for the proposed project in April 2002, which will be supplemented and updated for the EIR. It is anticipated that the proposed project will result in a total of 8,625 daily vehicle trips, which will impact project area intersections. As designed, the proposed project will not result in a substantial increase in traffic related hazards, automobile traffic. The EIR will address the project related traffic and circulation impacts and as applicable mitigation measures will be recommended.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
16. Utilities and Service Systems. *Would the project:*				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c. Require or result in the construction of new storm water drainage facilities, the construction of which could cause significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulation related to solid waste?				X

The proposed project may require upgrades and/or extensions of services. According to the *Background Report General Plan Update 2023*, the outlying areas (those areas not located between Lathrop Road to the north, Highway 120 to the south, Highway 99 to the east, and Airport Way to the west) will need to have water transmission lines extended from the existing grid. Additionally, undeveloped areas will require trunk sewers prior to development. Project design includes five detention ponds, which will detain water before being discharged, through controlled outlets into the French Camp Drain. The EIR will address the potential for project related utility and service system impacts (e.g., consumption of water, generation of wastewater and solid waste, etc.). As applicable, mitigation measures will be recommended.

17. Mandatory Findings of Significance				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

The project is not likely to degrade the quality of the environment or reduce the habitat or population of fish or wildlife species; threaten a plant or animal community; reduce the number or restrict the range of a rare or endangered plant or animal; eliminate important examples of the major period of California history or prehistory; to have impacts that are individually limited but cumulatively considerable; or directly or indirectly cause substantial adverse effects on human beings.

H. INCORPORATIONS BY REFERENCE

Not Applicable.

I. REFERENCES

1. Manteca, City of. 2003 (Feb.). *City of Manteca General Plan Update 2023.*
2. Manteca, City of. 2003 (April) *City of Manteca General Plan 2023 Background Report.*
3. Manteca, City of. 1992 (April), and as amended. *Manteca Zoning Ordinance Title 17.*
4. Farhad and Associates. 2002 (April). *Traffic Impact Analysis for Assieh Industrial Park.*
5. Enviro Soil Tech Consultants. 2001 (Nov.) *Site Environmental Clearance Letter.*
6. Manteca, City of. 2001 (July) Assieh site Development Environmental Questionnaire.

J. INITIAL STUDY PREPARATION

1. Benjamin J. Cantu, Jr., Advance Planning Manager

MANTECA POLICE DEPARTMENT

MEMORANDUM

To: Kyle Kollar, Community Development Director

From: Charlie Halford, Chief of Police

Date: May 14, 2003

Re: Assieh Industrial Project EIR

The Police Department has several concerns the proposed project.

A. The proposed project is anticipated to generate 8,624 daily vehicle trips, all of which will have to ingress and egress through a single entrance. There should be a second point of ingress and egress in the event of an event that would restrict or prohibit the use of the entrance.

B. A Traffic Signal should be required at the intersection of Louise Avenue and the entrance.

C. The vast majority of the traffic will be truck traffic. There will be a significant increase of truck traffic on Airport Way to the SR 120 Bypass, Airport to Lathrop to SR 99, and Louise Avenue to I5. This in turn will impact all of the intersections on those streets.

D. The project at one time envisioned this being gated. If that is the case, provisions for emergency access need to be included.



SOUTH SAN JOAQUIN IRRIGATION DISTRICT

May 29, 2003

Kyle Kollar
City of Manteca
Community Development Dept.
1001 W. Center Street
Manteca, CA 95337

Re: Assich Industrial project (Notice of preparation for the EIR)

Dear Mr. Kollar:

The South San Joaquin Irrigation District owns, operates, and maintains a drainage facilities known as the FCOC, located adjacent to the west boundary of the property described in the above referenced notice. This drain consists of a large open canal that is used for District operations and permitted storm drainage discharges by the City of Manteca and others.

Upon review of the information supplied, there is some cause for concern for the District relative to the proposed project as it relates to potential discharge of drainage into the FCOC. According to the information provided, the development would rely heavily upon drainage into the FCOC. The previous and proposed use of the property poses some substantial water quality issues that will need to be mitigated.

Additionally, the drainage canal has a limited capacity. This was identified in a recent hydraulic study that emphasized the need to make major improvement to the canal to accommodate any proposed additional inflows. Flows that are currently entering the facility are permitted under an extension of an expired agreement between the City of Manteca and the District. The two agencies are in the process of negotiating a new agreement that would consider including properties such as this that are not covered under the existing agreement and have not been covered under any previous agreements.

In order to enable staff to better evaluate any potential impacts relating to this project, more information relative to water quantity and quality will need to be provided. Further the environmental impact report will need to address those concerns and provide specific information concerning mitigation of those concerns. The District will also need to be included as an approving agency for any plans that will involve discharge of drain water into District facilities.

P. O. Box 747, Ripon, CA 95366-0747 • Phone 209/823-3101 • FAX 209/823-8406

If there are further questions please feel free to contact me at (209) 249-4617.

Sincerely,

Sam Bologna
Engineering Department Supervisor

cc : Mike Gilton

City of Lathrop
Community Development
Planning Division
(209) 858-2860, Extension 327
(209) 858-5259 Facsimile

June 3, 2003

Kyle Kollar
Community Development Director
City of Manteca
1001 W. Center Street
Manteca, CA 95337

Subject: Notice of Preparation-EIR of a Draft Environmental Impact Report Assich Project

Dear Mr. Kollar:

At its meeting of June 3, 2003, the City Council of the City of Lathrop reviewed the referenced NOP and directed staff to submit this letter in response.

The City of Lathrop is concerned about the potential impact this project will have on the City of Lathrop. We respectfully request that you address all impacts that might occur to the City of Lathrop in the EIR. Most prominently, we are concerned about the traffic impacts and ground-water impacts from the project due to the proximity to existing City of Lathrop wells.

Issues associated with storm water runoff from the project site to the City of Lathrop need to be addressed in the EIR. The quality of storm water runoff from the developed project site is expected to decline resulting from non-point source urban pollutants, which will contribute to incremental degradation of both the surface and groundwater quality. The City of Lathrop has several groundwater wells in the project's vicinity for its municipal supply that may be adversely affected by the project unless the City of Manteca implements the requirements for erosion, water and air pollution control laws and regulations in effect at the time of construction, such as but not limited to the National Pollution Discharge elimination System best management practice requirements.

The traffic impact to Louise Avenue in the City of Lathrop is of particular concern. The residents of Lathrop pay for street maintenance on Louise Avenue caused by traffic generated in Manteca. There is a significant additional impact that the proposed truck traffic will generate on to Louise Avenue. This project anticipates 8,625 additional daily vehicle trips that will substantially impact traffic on Louise Avenue. The City of Lathrop is concerned with the impacts on Louise Avenue. The City of Lathrop requests that a traffic study be prepared to appropriately address all traffic related impacts, including intersections and regional issues and impacts to the City of Lathrop circulation system. The NOP indicates that you are using the previous prepared traffic study that will be supplemented and updated.

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The City of Lathrop Public Works Department determined that the previous Traffic Impact Analysis needed the following mitigations to be included:

- The project needs to provide its fair share of intersection improvements at Louise and McKinley Avenues for the degrading of the AM LOS from A to B.
- The project needs to provide mitigation for impacts at Interstate-5 and Louise Avenue.
- The project needs to pay for its fair share of the construction of the Louise Avenue at Airport Way intersection.
- The City of Lathrop needs to be compensated through Traffic Impact fees for placing 450-peak hour truck trips on Lathrop's streets.

It is anticipated that much of the traffic data is outdated with the continued residential development in and around Airport Way that has occurred since the traffic study was prepared. In addition the City of Lathrop has approved Mossdale Landing and River Islands Urban Design Concepts and with these additional developments the traffic impact should be changed to Potentially Significant Impact for #15 Transportation/Traffic items a. & b in the NOP. This may require reconstruction of the I-5 at Louise Avenue interchange. The intersection of Louise and McKinley Avenues continues to be degraded and truck traffic may use McKinley Avenue to Lathrop Road for Interstate-5 access. Truck traffic will definitely use Louise Avenue to Interstate-5 since no 4-ton truck traffic is permitted on Louise Avenue in the City of Manteca. Therefore, the City of Lathrop needs to be compensated through Traffic Impact fees for placing a majority of the 8,625 vehicle daily trips onto Louise Avenue.

It appears that the proposed storm drain pond is being constructed over the City of Lathrop existing sewer force main to the Manteca plant. The City has an easement for this pipeline and it would not be prudent for us to permit a storm drain pond to be constructed over the existing sewer force main.

Please provide me with a copy of the draft and final environmental impact reports for this project when available.

Sincerely

Deanna D. Walsh
Principal Planner

cc: Pam Carder, City Manager
Ramon Batista, Assistant City Manager
Bruce Coleman, Community Development Director
Cary Keaten, Public Works Director

THOMAS R. FLINN
DIRECTOR

THOMAS M. GAU
DEPUTY DIRECTOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

BENTON ANGOVE
BUSINESS ADMINISTRATOR

Public Works
San Joaquin County
Working for YOU

P. O. BOX 1010 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201-3018
(209) 468-3000 FAX (209) 468-2999
www.co.san-joaquin.ca.us

June 4, 2003

Mr. Kyle Kollar
Community Development Director
City of Manteca
1001 West Center Street
Manteca, California 95337

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT - ASSIEH INDUSTRIAL PROJECT

Dear Mr. Kollar:

The San Joaquin County Department of Public Works has reviewed the environmental document for the above referenced project and our concerns, recommendations, and corrections are as follows:

The Public Services Division offers the following general comment:

Encroachment permits will be required for any work on County roads.

The Storm Water Management Division offers the general comments:

A State National Pollutant Discharge Elimination System Construction Permit Notice of Intent shall be filed with the State Water Resources Control Board if over one acre of total land is disturbed.

The applicant shall contact the South San Joaquin Irrigation District for their permission to discharge water into their canal.

The Traffic Engineering Division offers the following comments:

The project document's traffic study should address what, if any, traffic control (i.e. Stop signs or a traffic signal) is necessary at the project's point of access intersection with Louise Avenue.

The project document's traffic study should address what percentage of project related traffic will travel on Airport Way (in each direction) between Louise Avenue and Northgate Drive.

Mr. Kyle Kollar
NOTICE OF PREPARATION OF A DRAFT
ENVIRONMENTAL IMPACT REPORT
- ASSIEH INDUSTRIAL PROJECT

Thank you for the opportunity to be heard. Should you have questions or need additional information regarding the above comments, please contact me at 468-3085.

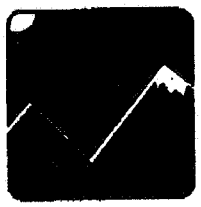
Sincerely,

Wendy Johnson

WENDY JOHNSON
Environmental Coordinator

WJ:tee
TP-3F015-E1

c: Trueman Phillips, Senior Civil Engineer
Charles Kelley, Senior Civil Engineer
Mike Selling, Associate Civil Engineer



San Joaquin Valley Air Pollution Control District

June 12, 2003

Kyle Kollar, Community Development Director
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337

SUBJECT: NOTICE OF PREPARATION FOR THE ENVIRONMENTAL IMPACT REPORT FOR ASSIEH INDUSTRIAL PROJECT.

Dear Mr. Kollar:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the proposed project and offers the following comments:

The San Joaquin Valley's air quality has been designated nonattainment by the EPA and by the Air Resources Board (ARB) for ozone and fine particulate matter (PM-10). The Federal Clean Air Act (CAA) and the California Clean Air Act require areas that are designated nonattainment to reduce emissions until standards are met.

The District recommends that the air quality section of the EIR have three main components. **Section one** should provide a description of the regulatory environment and existing air quality conditions impacting the San Joaquin Valley. **Section two** should provide estimates of existing emissions and projected pollutant emissions related to any increases in population, vehicle use, and construction activities along with an analysis of the effects of these increases. **Section three** should identify and discuss all feasible mitigation measures which, after implementation, will reduce the air quality impacts generated by this project.

Section 1: *description of the regulatory environment and existing air quality conditions of the San Joaquin Valley.*

The District has several sources of information available to assist with the existing air quality and regulatory environment section of the EIR. The District's ***Guide for Assessing and Mitigating Air Quality Impacts*** (GAMAQI) contains discussions regarding the existing air quality conditions and trends of the San Joaquin Valley Air

David L. Crow
Executive Director/Air Pollution Control Officer

Northern Region Office
4230 Kiernan Avenue, Suite 130
Modesto, CA 95356-9322
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1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
(661) 326-6900 • FAX (661) 326-6985

www.valleyair.org

Basin, including those pollutants of particular concern: ozone, PM-10, and carbon monoxide. In addition, it provides an overview of the regulatory environment governing air quality at the federal, state, and regional levels. The GAMAQI provides air monitoring data and other relevant information for PM-10 and other pollutants.

Section 2: *projected pollutant emissions generated during the construction and operational phases of the project.*

The growth-inducing and cumulative impacts analyses should take into consideration the existing and planned development both within the project area and in the surrounding areas. The District recommends the use of the URBEMIS 7G modeling program to calculate the pollutant emissions resulting from motor vehicle trips generated by this development project. Additional guidance is provided in the GAMAQI.

Additionally, the EIR should quantify emissions that are individually small but cumulatively significant sources of pollution. This includes, but is not limited to, emissions from natural gas combustion for space and water heating and emissions from gas-powered lawn and garden maintenance equipment. URBEMIS 7G may also be used to quantify these emissions.

As the projects are considered for approval the applicant and the City of Modesto should consider the toxic risk associated with diesel-fueled engines and vehicles. The California Air Resources Board has issued a report entitled **Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles** (October 2000). Appendix VII of the report provides several risk characterization scenarios, which may serve as a starting point for estimating risks from diesel engine emissions. The District will work with applicants to review appropriate methodology for estimating toxic risk.

Section 3: *mitigation measures.*

Mitigation measures must be included in the EIR that reduce the emissions of reactive organic gases (ROG), nitrogen oxides, carbon monoxide, and PM-10 to the maximum extent feasible. Site design and building construction measures that would reduce air quality impacts should be included. In addition, measures to reduce vehicle trips, miles traveled, and cold starts should be included in the project.

As a result of the Valley's nonattainment status, the District strongly recommends that the project applicant implement all feasible mitigation measures to reduce the amount of ozone precursors that will result from the buildout of this project. Please note that some of these measures may already exist as City/County development standards. The following is a list of potential mitigation measures, the list is not meant to be all inclusive, and the District encourages new innovative ideas.

- Planting of deciduous trees on the south and westerly facing sides of buildings.

- Provide low nitrogen oxide (NOx) emitting and/or high efficiency water heaters.

- Energy efficient design including automated control system for heating/air conditioning and energy efficiency beyond Title 24 requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light colored roof materials to reflect heat.

- If transit service is available to the project site, improvements should be made to encourage residents to use it. If transit service is not currently available, but is planned for the future, appropriate easements should be reserved to provide for future improvements such as bus turnouts, loading areas, and shelters.

- Sidewalks and bikepaths should be installed throughout as much of the project as possible and should be connected to any nearby open space areas, parks, schools, commercial areas, etc.

- One of the issues that will arise in conjunction with any proposed renovation/demolition of existing building in the project area is compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAPS). Specifically, the primary air pollutant of concern is asbestos. To ascertain whether this project is subject to NESHAPS, the project applicant is advised to review the enclosed *Asbestos - Compliance Assistance Bulletin*, dated December 1994. Leaf Sexton is the Northern Region's District contact for the program and is available should you need further assistance.

- Prior to the issuance of construction contracts the City should perform a review of new technology, as it relates to heavy-duty equipment, to determine what if any advances in emission reduction are available for use. It is anticipated that in the near future both NOx and PM10 control equipment will be available. The District would be available for consultation on this process.

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

- Install wheel washer for all exiting trucks, or wash off all trucks and equipment leaving the site.

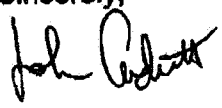
- Install wind breaks at windward sides of construction areas.

- Suspend excavation and grading activity when winds exceed 20 mph.
- Limit area subject to excavation, grading, and other construction activity at any one time.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operation are occurring. (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting t limit the visible dust emissions.)
- Use alternative fuel construction equipment.
- Minimize idling time (e.g. 10 minute maximum)
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents(provided they are not run via a portable generator set).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways (Days declared as Spare the Air Days by the District).
- Require construction equipment used at the site be equipped with catalysts/particulate traps to reduce particulate and NOx emissions. These catalysts/traps require the use of ultra-low sulfur diesel fuel (15 ppm). Currently, the California Air Resources Board has verified a limited number of these devices for installation in several diesel engine families to reduce particulate emissions. Diesel catalysts effective at reducing NOx are not currently available, but may be within a few years.
- Warehouse facilities should utilize material moving equipment that is electric or propane driven.
- Electrify truck-parking areas to allow trucks with sleeper cabs to use electric heating and cooling to eliminate the need to idle their diesel engines overnight.

- Limit engine idling at the project site. Other facilities have successfully implemented a "no idling policy" for heavy-duty trucks. These facilities require that trucks turn off engines as they park at truck loading/unloading docks. Long idling times should be minimized due to the proposed electrification sites at loading docks.

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me at (209) 557-6400.

Sincerely,



John Cadrett
Air Quality Planner
Northern Region

APCD REF # 20030263

STATE OF CALIFORNIA
GRAY DAVIS, Governor

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

June 12, 2003

File: 183-EIR
Assieh Industrial Project
SCH# 2003052069

Kyle Kollar
City of Manteca
1001 W. Center Street
Manteca, CA 95337

Dear Mr. Kollar:

This is in response to the Notice of Preparation of a draft Environmental Impact Report for the Assieh Industrial Project, SCH #2003052069, located in the City of Manteca, San Joaquin County.

The California Public Utilities Commission does have decision/permit authority over highway-rail crossing projects. Application and environmental requirements are set forth in Rule 38 and Rule 17.1, respectively, of the Commission's Rules of Practice and Procedure (California Administrative Code, Title 20).

The roadway access to the proposed development is via Louise Avenue, which crosses three Union Pacific Railroad Company tracks at-grade in the immediate vicinity of the proposed project. The Commission will be very concerned with traffic generation and distribution patterns, projected traffic volumes, accident potential at the highway-rail crossings, and proposed mitigations.

Thank you for the opportunity to comment on this matter.

Very truly yours,

AUTAR S. CHHINA, P.E.
Senior Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

ASC:vdl

cc: Philip Crimmins
Project Analyst, State Clearinghouse
Office of Planning and Research
P. O. Box 3044
Sacramento, CA 95812-3044

143790

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 (1976 E. CHARTER WAY)
STOCKTON, CA 95201
TTY: California Relay Service (800) 735-2929
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June 13, 2003

10-SJ-120-PM R03.577
Assieh Industrial Project
NOP/DEIR
SCH # 2003052069

Mr. Kyle Kollar
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95201

Dear Mr. Kollar:

Thank you for the opportunity to comment on the Assieh Industrial Project located north of Louise Avenue, one-half mile west of Airport Way. The project is 80 acres of industrial land to be converted to an industrial park, with six industrial warehouse structures of 1,400,000 square feet in total, to be constructed in two phases.

A traffic study will be required to determine cumulative impact of this project at build-out at the State Route 120/Airport Way and the Interstate 5/Louise Avenue interchanges. This analysis should include the relevant information found in *Caltrans' Guide to the Preparation of Traffic Impact Studies* and include the following:

- Trip generation, distribution and assignment. Documentation should include source and methodology of the data that is presented.

- ADT, AM and PM peak hour volumes on all significantly affected streets and highways, including freeway ramps and crossroads, and controlling intersections. Traffic volumes should be presented for existing and future conditions, the latter for a cumulative build and a no build scenario that includes all approved developments in the area. The coverage should include all traffic that would affect the facilities evaluated and should not be limited to projects under the jurisdiction of the lead agency.

- Traffic impacts should be evaluated in terms of a Level of Service (LOS) analysis that is consistent with the most recent version of the *Highway Capacity Manual* (HCM), or by a uniform methodology that is consistent with the HCM.

Caltrans will need to see site plans when available. More detailed comments may be provided thereafter.

This project will increase the ambient air pollution problem existing in San Joaquin County. Please be aware that any increase of negative air quality may well impact negatively on future transportation projects. There may also be cumulative impacts on

the air quality by additional projects located in the Manteca area that should be addressed within this California Environmental Quality Act document.

Cumulative environmental impacts from all projects in the area will need to be addressed within the document. If traffic impact studies/models require work to be done on any State Route, an Encroachment Permit may be required. Fair share money for work may include funds for environmental work and/or mitigation.

Proposed mitigation should include highway improvements and modal alternates and any proposed funding mechanisms.

We suggest that the City of Manteca continue to coordinate and consult with Caltrans to identify and address potential cumulative transportation impacts that may occur from this project and other developments near this geographical location. This will assist us in ensuring that traffic safety and quality standards are maintained for the traveling public on existing and future state transportation facilities.

If you have any questions or would like to discuss these comments in more detail, please contact Lynn O'Connor at (209) 948-7575 (email: loconnor@dot.ca.gov).

Sincerely,

Lynn O'Connor for

TOM DUMAS, Chief
Office of Intermodal Planning

c: Philip Crimmins
State Clearinghouse
P. O. Box 3044
Sacramento, CA 95812-3044

APPENDIX B:
TRAFFIC IMPACT ANALYSIS

Traffic Study for an Environmental Impact Report

ASSIEH INDUSTRIAL PARK
MANTECA, CA

26 May 2004

Prepared for:

Michael Brandman Associates, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.

TABLE OF CONTENTS

INTRODUCTION **1**
Study Methodology 1
Land Use, Site, and Study Area Boundaries 3
Existing and Proposed Site Uses 3
Existing and Proposed Uses in Vicinity of Site 3
Site Access 3
Assieh Driveway Design and Internal Circulation 5
Intersections Included in Analysis 6

EXISTING CONDITIONS **6**
Existing Roadway Network 6
Existing Lane Configurations and Traffic Control 7
Existing Traffic Turning Movement Volumes 7
Existing Pedestrian and Bicycle Facilities 10
Existing Transit Service 10

PROJECT TRIP GENERATION AND DISTRIBUTION **10**
Project Trip Generation 10
Project Trip Distribution and Assignment 11

NEAR-TERM CONDITIONS **14**
Near-Term Lane Configurations and Traffic Control 14
Near-Term Approved Development Projects 16
Near-Term Approved Development Vehicle Trips 16
Near-Term Existing Plus Approved Development 19
Near-Term Existing Plus Approved Development Plus Project 19

LONG-TERM CONDITIONS **19**
Long-Term Lane Configurations and Traffic Control 19
Long-Term Cumulative (No Project) 23
Long-Term Cumulative Plus Project 24

NEAR-TERM LOS CONDITIONS AND IMPACTS **24**
Existing Traffic Conditions 28
Near-Term Traffic Conditions without the Project 29
Near-Term Traffic Conditions with the Project 29

LONG-TERM CUMULATIVE LOS CONDITIONS AND IMPACTS **30**
Long-Term Cumulative Traffic Conditions without the Project 30
Long-Term Cumulative Traffic Conditions with the Project 31

IMPACTS AND MITIGATIONS **33**
Other Recommendation 34

LIST OF FIGURES

Figure 1 – Project Location and Study Intersections 4
Figure 2 – Existing Lane Geometry and Traffic Control 8
Figure 3 – Existing Peak Hour Turning Movement Volumes 9
Figure 4 – Project Trip Distribution 12
Figure 5 – Project Generated Traffic Volumes 13
Figure 6 – Near-Term Lane Geometry and Traffic Control 15
Figure 7 – Approved Development Generated Traffic Volumes 18
Figure 8 – Existing + Approved Development Traffic Volumes 20
Figure 9 – Existing + Approved Development + Project Traffic Volumes 21
Figure 10 – Long-Term Lane Geometry and Traffic Control 22
Figure 11 – Long-Term Cumulative 2025 Traffic Volumes 25
Figure 12 – Long-Term Cumulative + Project Traffic Volumes 26

LIST OF TABLES

Table 1 – Intersection Level of Service Definitions 2
Table 2 – Site Trip Generation 11
Table 3 – Villa Ticino West Development Trip Generation 17
Table 4 – Existing and Near-Term Level of Service Summary Table 27
Table 5 – Long-Term Level of Service Summary Table 32

INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Michael Brandman Associates, Inc. (MBA) to study the traffic impact for the proposed development of the Assieh Industrial Park in Manteca, California. This report was prepared based on discussions with, and criteria set forth by, the City of Manteca. The purpose of this study is to address the traffic and transportation impacts of the proposed development in order to assist the project sponsor and the City in project planning and to provide information relevant to this project's place in the City's General Plan.

This report focused on an area that lies in the northwest portion of the City of Manteca. The proposed Assieh Industrial Park is located west of the intersection of Airport Way and Louise Avenue, just east of the City limit. The City of Lathrop is located slightly west of the study area, with the Union Pacific Railroad serving as the boundary between the two cities.

Study Methodology

The traffic study was based on the following development conditions:

- **Existing conditions** – Based on peak hour current traffic counts, existing roadway geometry, and existing development conditions.
- **Background traffic conditions** (Existing plus approved development) – Based on existing traffic volumes and traffic added by nearby approved developments and roadway improvements anticipated to be completed before or the same time as this project.
- **Total traffic conditions** (Existing plus approved development plus project) – Based on existing traffic volumes, traffic added by nearby approved development, and traffic generated by the proposed project. Includes roadway improvements anticipated to be completed before or the same time as the project completion.
- **Cumulative long-term conditions without the project** – Based on 2025 traffic forecast data without the project. Includes roadway improvements anticipated to be completed by the year 2025.
- **Cumulative long-term conditions plus project** – Based on 2025 traffic forecast data with the project. Includes roadway improvements anticipated to be completed by the year 2025.

The traffic study was based on the following operating conditions. Operating conditions experienced by drivers are described in terms of Level of Service (LOS), which is a qualitative measure of factors such as delay, speed, travel time, freedom to maneuver, and driving comfort and convenience. Levels of service are represented by a letter scale from LOS A to LOS F, with LOS A representing the best performance and LOS F representing the poorest performance. LOS D or better is considered satisfactory operation at intersections within the City of Manteca.

Table 1 relates the operational characteristics associated with each level of service category for both signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized Average control delay per vehicle (sec/vehicle)	Unsignalized Average control delay per vehicle (sec/vehicle)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

Source: Transportation Research Board, *Highway Capacity Manual 2000*, National Research Council, 2000.

Traffic analysis was completed using *Synchro* at signalized intersections and *Highway Capacity Software* at unsignalized intersections. Both software platforms are based on the methodology of the *Highway Capacity Manual*.

Land Use, Site, and Study Area Boundaries

The project is proposed to include 1,404,680 square feet of industrial development titled the Assieh Industrial Park (Assieh) located west of the intersection of Airport Way and Louise Avenue. **Figure 1** illustrates the project location.

Existing and Proposed Site Uses

The proposed project site is generally level, similar to the surrounding terrain in the study area and is currently vacant of development. It should be noted that this report is based on the site plan dated September 26, 2002. Any future revisions to the site plan may result in a change in the assumptions of this study and thereby the study findings.

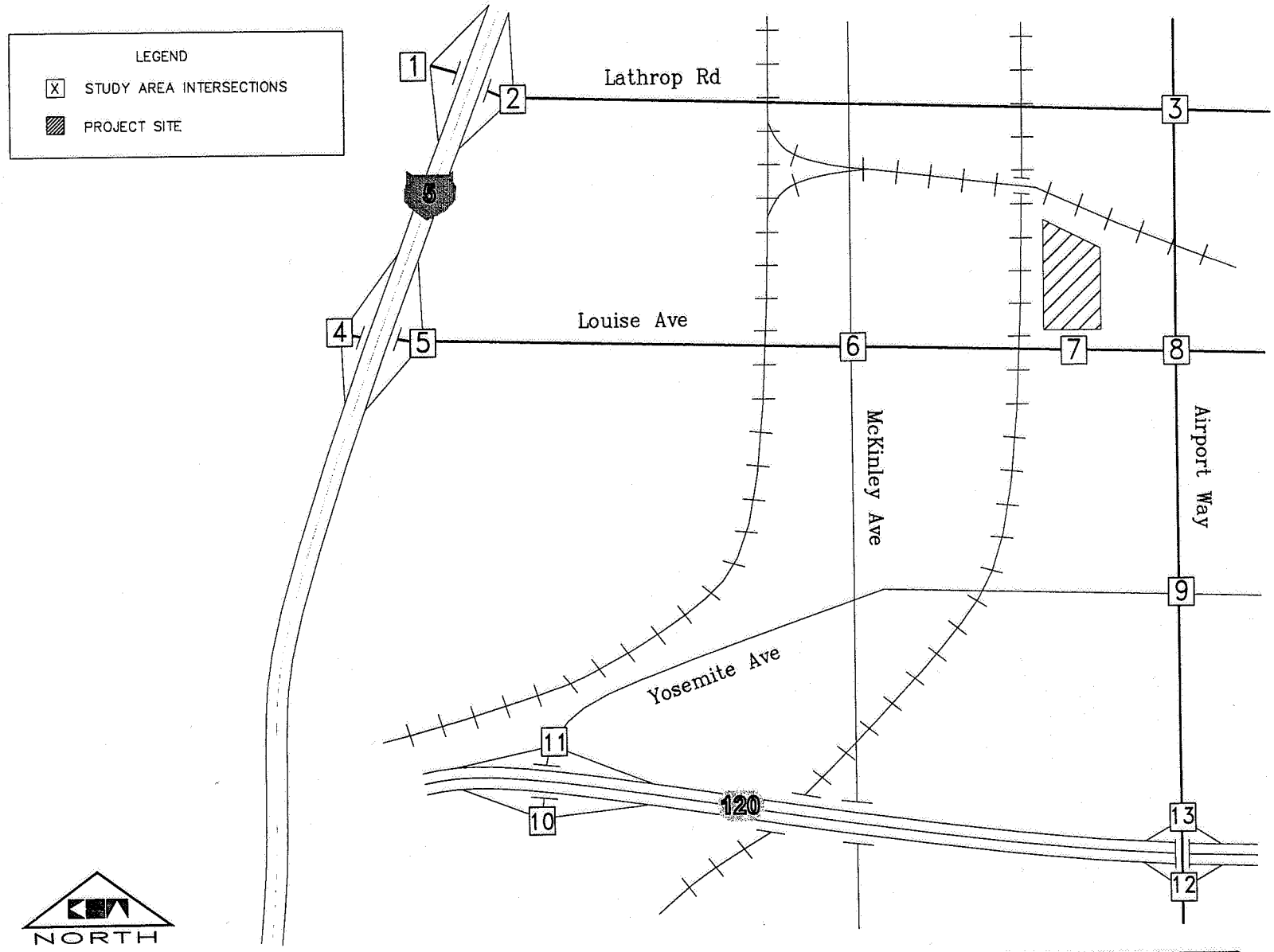
Existing and Proposed Uses in Vicinity of Site

The land area surrounding the project site is relatively vacant and used for agricultural purposes, except for some residential and other various industrial and warehousing land uses. South of the project site is the proposed Villa Ticino West development. When completed, the Villa Ticino site will consist of approximately 760 single family homes, 220 multi-family apartments, 18 acres of commercial uses, a fire station, and about 15 acres of parks and drainage basins. At the time this study was originally prepared, the Villa Ticino West project was still in the planning stages and had not submitted a traffic report to the city. (Since then, a traffic report has been prepared.) Because no traffic study was available for the Villa Ticino West project, this analysis prepared an estimate of the traffic likely to be generated by the Villa Ticino West development.

Site Access

Access to the Assieh Industrial Park is proposed from Louise Avenue. The project driveway is proposed to operate as either stop-controlled on the driveway approach or a signalized intersection. If the project driveway is selected to operate as a stop-controlled intersection, the driveway would permit only right turning vehicles in and out of the site and prohibit all other movements. This alternative is not recommended due to issues related to enforcement of the turning prohibition and intersection geometry. If the project driveway operates as a signalized intersection, the driveway will permit all turning movements entering and exiting the driveway.

The Villa Ticino West project is currently planned to include a driveway on Louise Avenue, east of the proposed driveway location for the Assieh Industrial Park. These driveways could be aligned to allow for a full movement signalized intersection. To construct this new four-legged, signalized intersection, either the Villa Ticino West project or both projects would have to modify their site plans to re-align their respective project roadways with one another. It should be noted because of the relatively narrow site frontage of the Assieh project on Louise Avenue that it is not possible to realign the Assieh access to fully align with the access for the Villa Ticino West project. Therefore, the full movement access scenario is recommended and analyzed throughout the remainder of this report.



Assieh Industrial Park – Manteca, CA

FIGURE 1

PROJECT LOCATION AND STUDY INTERSECTIONS

Kimley-Horn and Associates, Inc.

The Villa Ticino West project also includes the construction of a fire station on Louise Avenue, located between the high-density residential development and the commercial development portion of the Villa Ticino West project. At the time this report was prepared, the configuration of the fire station access to Louise Avenue and to the surrounding Villa Ticino development was unknown. However, the likely access is more than 1,100 feet from the proposed access to the Assieh project. Because of the anticipated distance and the low traffic associated with the fire station, no operational or safety conflicts are anticipated between the two. Nevertheless, it is assumed that the access will be further evaluated as part of the Villa Ticino traffic study. At that time, the City should review the entering and exiting movements of the proposed fire station to assure immediate and convenient access to/from the fire station. The fire station may require a connection to the Villa Ticino West project roadway to allow for better access to areas west of the study area and limit the need for fire engines to make a U-turn movement at the Louise Avenue/Airport Way intersection.

Assieh Driveway Design and Internal Circulation

According to the site plan, the project will construct a westbound right turn lane into the project site. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be at least 150 feet.

TJKM Transportation Consultants performed an analysis on the Assieh driveway and site internal circulation in a letter to MBA dated April 24, 2003. The pertinent contents of that letter are below.

> "Template analysis shows that passenger cars with an outer turning radius of 24 feet do not have any difficulty entering and/or exiting the main entrance along Louise Avenue and the individual parking lots for the six warehouse structures/nine warehouses buildings. Template analysis was also performed for a five-axle large semi-trailer with a wheelbase of 50-feet (WB-50). The analysis indicates that the large semi-trailer trucks with an outer path turning radius of 45 feet can access the docking ramps at all nine warehouse locations.
>
> The template analysis indicates that the trucks with a 45 to 60 feet outer path turning radius should be able to make U-turns relatively easy at the end of the proposed cul-de-sac, a 75 foot radius is provided at the cul-de-sac. Over 700 feet of queuing/stacking distance is provided between Louise Avenue and the first warehouse/docking ramp entrance and another 800 feet is provided between the first and second warehouse/docking ramp entrance. Overall more than 2,000 feet of queuing is available on-site before the public street is affected from parking, waiting or circling trucks."

Based on the TJKM evaluation, no access or on-site deficiencies are anticipated.

Intersections Included in Analysis

The proposed project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess the potential traffic related impacts associated with the project, the following intersections, illustrated in **Figure 1**, were selected by the City of Manteca for evaluation:

1. I-5 SB Ramps / Lathrop Road
2. I-5 NB Ramps / Lathrop Road
3. Airport Way / Lathrop Road
4. I-5 SB Ramps / Louise Avenue
5. I-5 NB Ramps / Louise Avenue
6. McKinley Avenue / Louise Avenue
7. Project Driveway / Louise Avenue
8. Airport Way / Louise Avenue
9. Airport Way / Yosemite Avenue
10. Yosemite Avenue / SR-120 EB Ramps
11. Yosemite Avenue / SR-120 WB Ramps
12. Airport Way / SR-120 EB Ramps
13. Airport Way / SR-120 WB Ramps

EXISTING CONDITIONS

Existing Roadway Network

Below is a description of the principal roadway facilities bordering the project.

Interstate 5 (I-5)

I-5 is a major north-south 4-lane freeway that carries between 68,000 and 101,000 vehicles per day through the study area according to the most recent Caltrans traffic volumes (*2002 Traffic Volumes on California State Highways*, Caltrans). Freeway ramps entering and exiting I-5 intersect with Lathrop Road at two unsignalized intersections and with Louise Avenue at two signalized intersections.

State Route 120 (SR-120)

SR-120 is a major east-west multilane highway that carries between 58;000 and 70,000 vehicles per day according to the most recent Caltrans traffic volumes (*2002 Traffic Volumes on California State Highways*, Caltrans). Freeway ramps entering and exiting SR-120 intersect with Yosemite Avenue at two unsignalized intersections.

Louise Avenue

Louise Avenue is an east-west roadway with one lane in each direction near the project site. Louise Avenue widens to two lanes in each direction west of Howland Road. Louise Avenue provides access to I-5, McKinley Avenue, and Airport Way in the study

area. In the existing condition, all intersections with the exception of Airport Way and Louise Avenue are signalized.

Airport Way

Airport Way is a north-south two lane roadway east of the project. South of the project, intersection along Airport Way provide access to the majority of the existing residential land use in the study area. It provides access to Lathrop Road, Louise Avenue, Yosemite Avenue, and SR-120 in the study area.

Lathrop Road

Lathrop Road is an east-west two lane roadway north of the study area. The roadway currently provides access to I-5, McKinley Avenue, and Airport Way in the study area. Lathrop Road also provides a connection through Manteca to SR-99.

Yosemite Avenue

Yosemite Avenue is an east-west roadway south of the study area. Yosemite Avenue provides access to SR-120, McKinley Avenue and Airport Way in the study area. The roadway widens from one lane in each direction to two lanes in each direction just east of McKinley Avenue.

McKinley Avenue

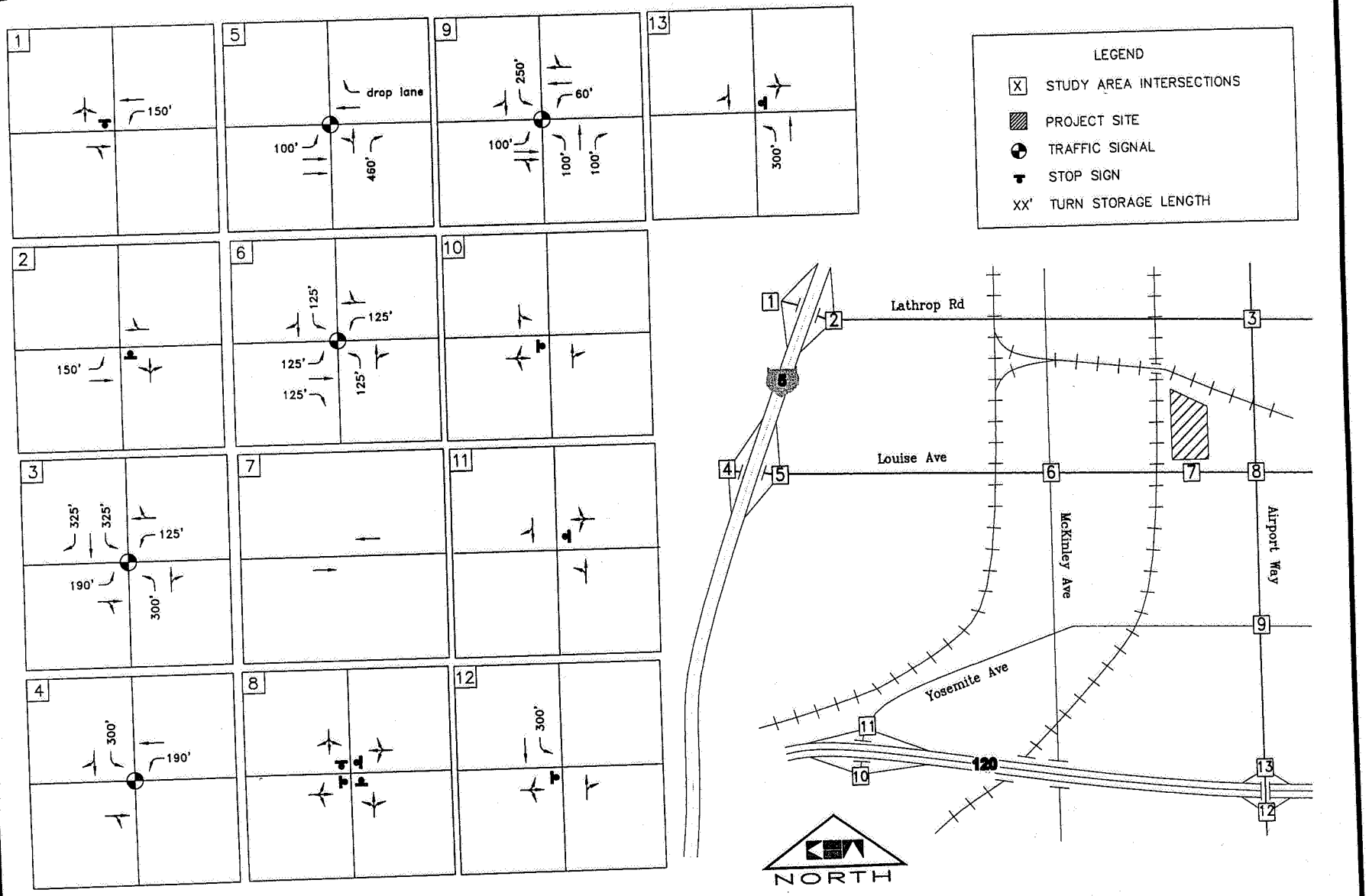
McKinley Avenue is a two lane north-south roadway west of the project site. It provides access to Lathrop Road, Louise Avenue, and Yosemite Avenue. The only study intersection on McKinley Avenue is signalized.

Existing Lane Configurations and Traffic Control

Existing intersection lane configurations and traffic control are illustrated in **Figure 2**. There are five existing traffic signals in the study area. The remaining study area intersections are stop-controlled intersections. It should be noted that numbers shown in **Figure 2** represent existing turn bay lengths for right and left turn lanes.

Existing Traffic Turning Movement Volumes

Weekday intersection turning movement volumes were collected for the thirteen existing intersections in November 2003. Existing volumes are shown in **Figure 3**. Volumes were collected during the AM and PM peak periods of the day between the hours of 7:00-9:00 AM and 4:00-6:00 PM. Traffic volume data sheets are included in the **Appendix**.

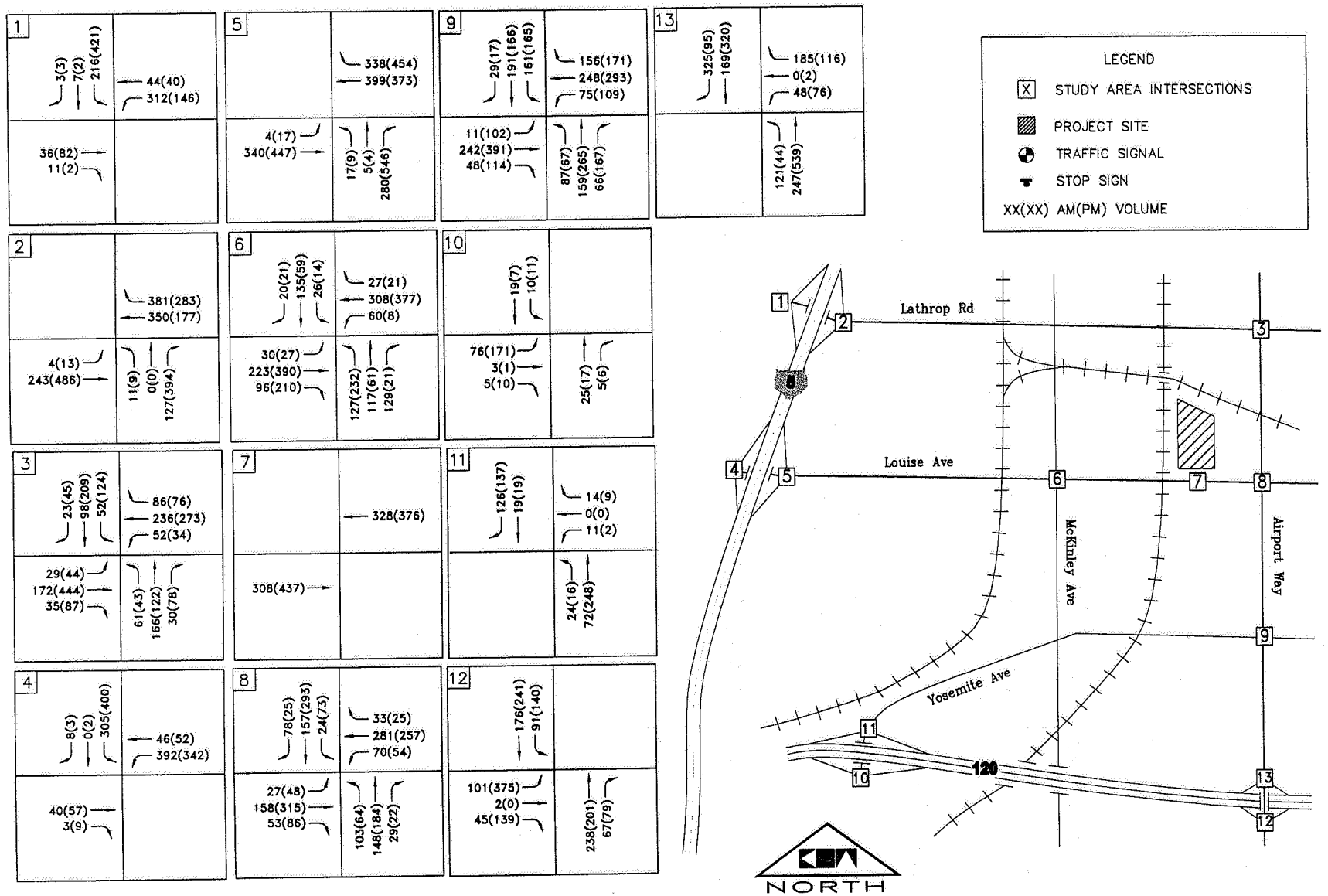


Assieh Industrial Park – Manteca, CA

EXISTING LANE GEOMETRY AND TRAFFIC CONTROL

FIGURE 2

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

FIGURE 3

EXISTING PEAK HOUR TURNING MOVEMENTS

Kimley-Horn and Associates, Inc.

As part of the traffic counts, 24-hour mechanical tube counts were collected to determine truck volumes on Louise Avenue, west of the Airport Way intersection. Truck volume data was analyzed to calculate the percentage of total traffic accounted for by trucks in the study area. Results indicate that trucks currently account for 4 percent of the total traffic in the AM peak hour and 2 percent in the PM peak hour.

Existing Pedestrian and Bicycle Facilities

There are currently no continuous pedestrian or bicycle facilities along the site frontage or near the project site along Louise Avenue or Airport Way. Pedestrians and bicyclists currently use the typically narrow shoulders of the road.

Existing Transit Service

San Joaquin Regional Transit District (SJRTD) is the transit service provider for the Lathrop/Manteca area. Currently no SJRTD service operates on Louise Avenue or Airport Way adjacent to, or within reasonable (1/4 mile) walking distance to, the site.

PROJECT TRIP GENERATION AND DISTRIBUTION

Project Trip Generation

AM, PM and daily vehicular trips for the proposed project were developed based on trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition*. This manual is a standard reference used by jurisdictions throughout the country and is based on actual trip generation studies at numerous locations in areas of various populations.

The trip generation rate for Warehousing (ITE Land Use Code 150) was based on square feet as the independent variable. Trip generation calculations are included in the **Appendix**.

Often with new development a certain amount of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not represented as new vehicle trips but are considered to be pass-by trips. Due to the nature of the warehouse land use, no pass-by trips are expected and therefore no pass-by trip reduction was applied to the project trip generation. **Table 2** summarizes the results of the trip generation analysis for the project.

As seen in **Table 2**, the industrial development is expected to generate 632 new trips in the AM and 716 new trips in the PM peak hour. Because the project is a warehouse facility it is expected to include a significant volume of truck trips. However, no information in ITE *Trip Generation* was available regarding typical truck percentages for Land Use Code 150. Therefore, it was concluded that the project was also similar to

High-Cube Warehouse (ITE Land Use Code 152) which identified truck trips as accounting for 9 to 27 percent of the peak hour traffic at the sites surveyed. Based on the ITE Data, this study assumed that roughly 18 percent of the total trips from the Assieh project would be trucks.

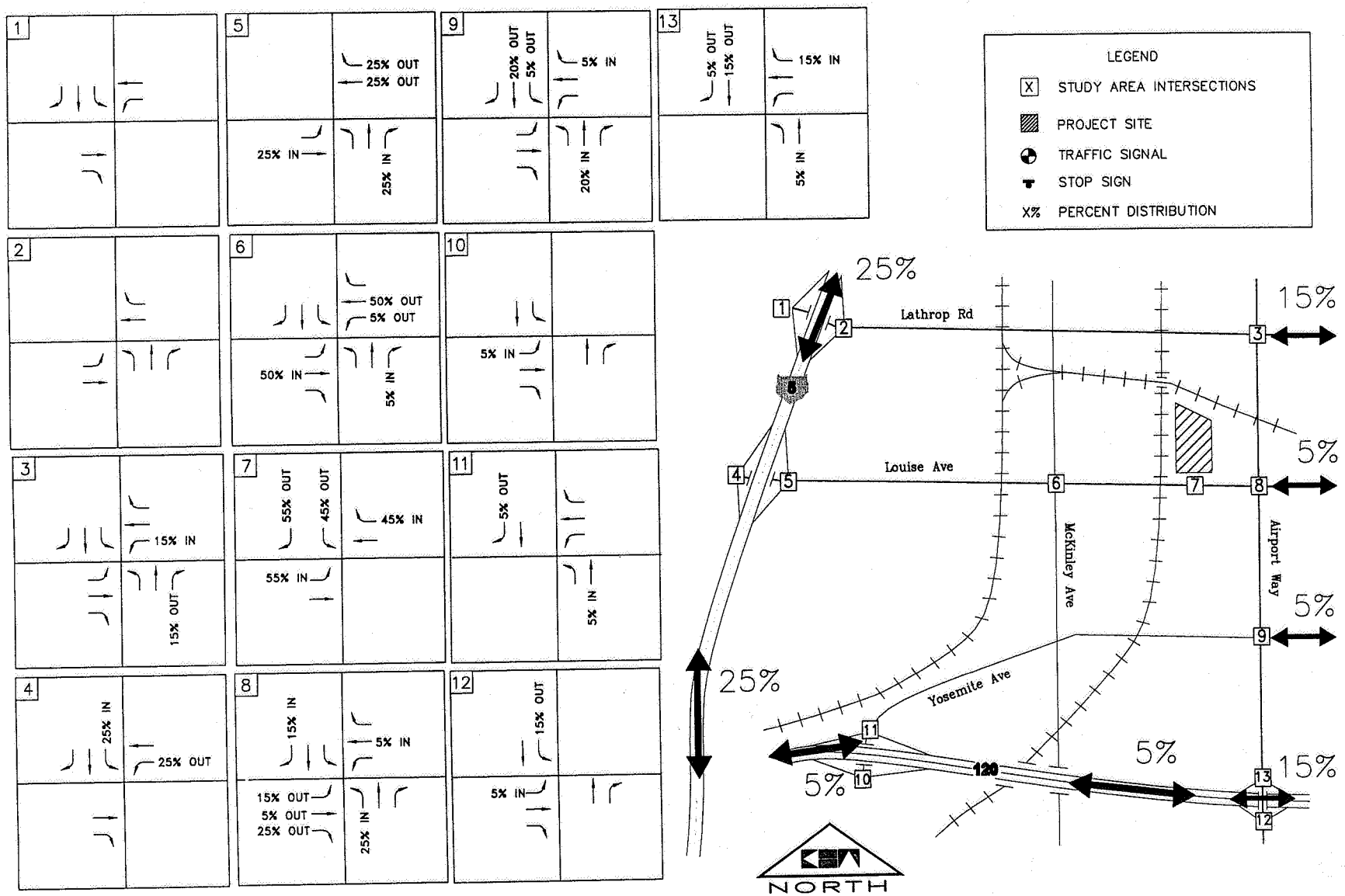
Table 2 – Site Trip Generation

LAND USE	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Warehousing	6,967	518	144	632	172	544	716

Existing truck percentages near the project site are up to 4 percent in the AM/PM. When Assieh project truck volumes are applied to the existing background traffic, truck percentages at study intersections are expected to increase from the existing levels to as much as 8 percent in the AM and PM peak hours. Although the percentage of truck traffic diminishes away from the project site, it was conservatively assumed that all study intersections would have 8 percent trucks.

Project Trip Distribution and Assignment

In preparation of the traffic distribution, Kimley-Horn reviewed the project's industrial use in proximity to the surrounding population centers. In addition, existing traffic counts were also reviewed to determine general proportion of traffic volumes at study intersections. Because of the nature of the development, employees, customers, and trucks serving the Assieh project are expected to travel from nearby locations in Manteca, Lathrop, Tracy, Stockton, and beyond. Many trips are expected to travel to/from Interstate 5 and State Route 120. These trips consist of a combination of light and heavy vehicles, many of which will be employees traveling to and from other central valley locations. Based on the geographic location of the project in relation to existing traffic patterns (as noted in turning movement counts), the likely employee and customer base for the site, major connections to principal arterials and freeways, and potential access limitations, a project traffic distribution was prepared as shown in **Figure 4**. As mentioned, the distribution was founded on several considerations but ultimately was determined based upon the professional judgment of Kimley-Horn. As shown in the distribution, nearly all the project traffic is conservatively assumed to reach freeways extending outside of the city, with as much as 50% of project traffic expected to use I-5 and a large percentage of other project traffic directed to SR-120. In reality, the actual distribution is expected to be lower outside of the city due to the fact that some project traffic will be dispersed inside Manteca's and Lathrop's city limits. **Figure 5** shows the project's trip assignment assuming a full movement intersection is created by aligning the Villa Ticino West access with the driveway for the Assieh project. It should be noted that the volumes shown in **Figure 5** are only related to the Assieh project. Movements not showing volumes are not assumed to have project traffic.

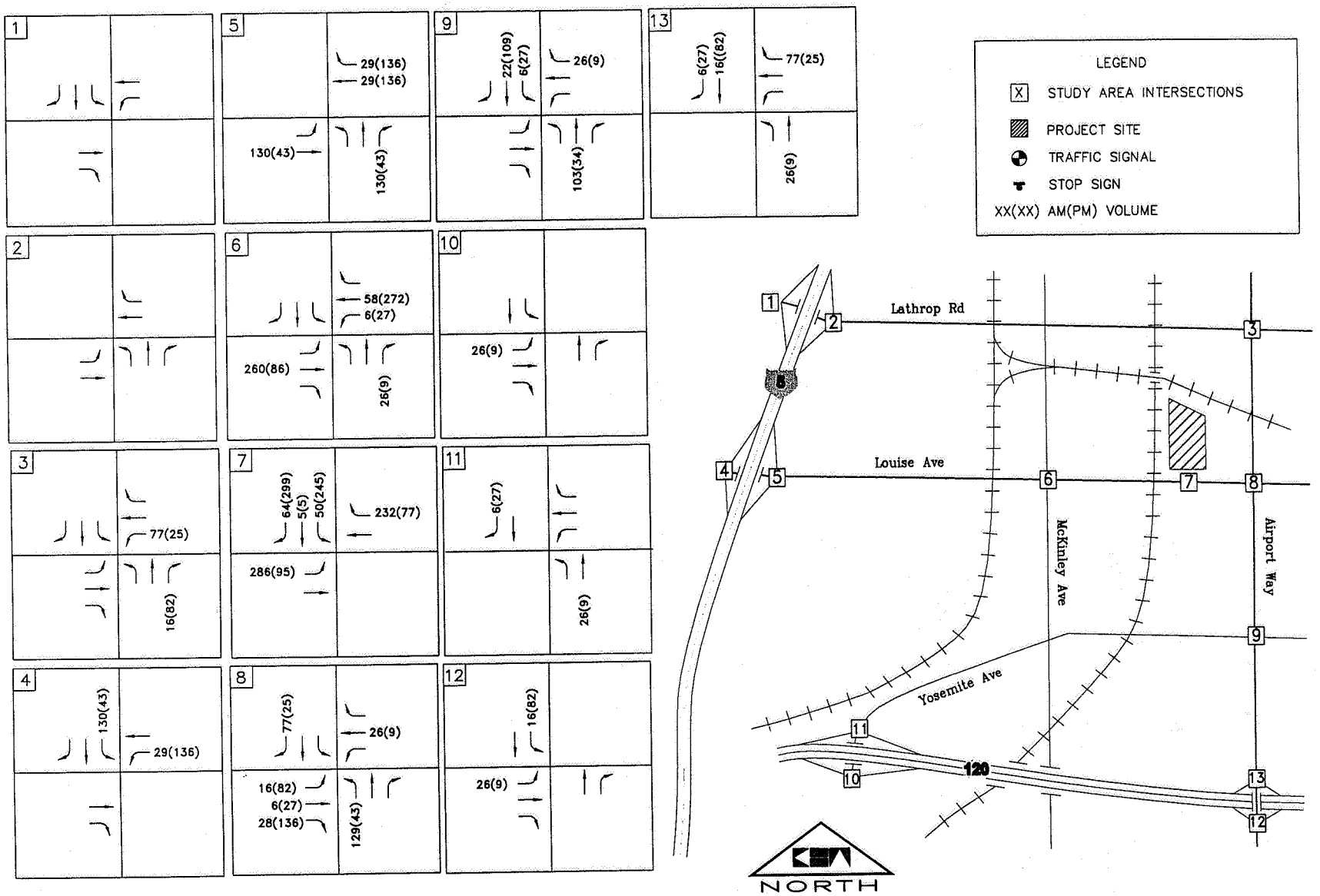


Assieh Industrial Park – Manteca, CA

PROJECT TRIP DISTRIBUTION

FIGURE 4

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

PROJECT GENERATED TRAFFIC VOLUMES

FIGURE 5

Kimley-Horn and Associates, Inc.

NEAR-TERM CONDITIONS

Near-Term Lane Configurations and Traffic Control

The Villa Ticino West roadway does not currently align with the proposed Assieh project driveway. The close offset of the two intersections will make it difficult for vehicles, especially trucks, to enter and exit the Assieh project driveway. To mitigate this poor operation, the Villa Ticino West roadway and the project driveway should be relocated to align with each other.

Some roadway improvements and construction are planned for the study area in the near-term associated with development in the area. **Figure 6** illustrates the intersection geometry and traffic control assumed in the near-term analysis to be in place at the time that the Assieh project is developed. It should be noted that numbers shown in **Figure 6** represent assumed turn bay lengths for right and left turn lanes. The following roadway and traffic control improvements are expected in the study area between the Existing condition and the Near-Term conditions. Roadway improvements are development driven and assumed to be occurring concurrently with planned developments in the Near-Term scenario.

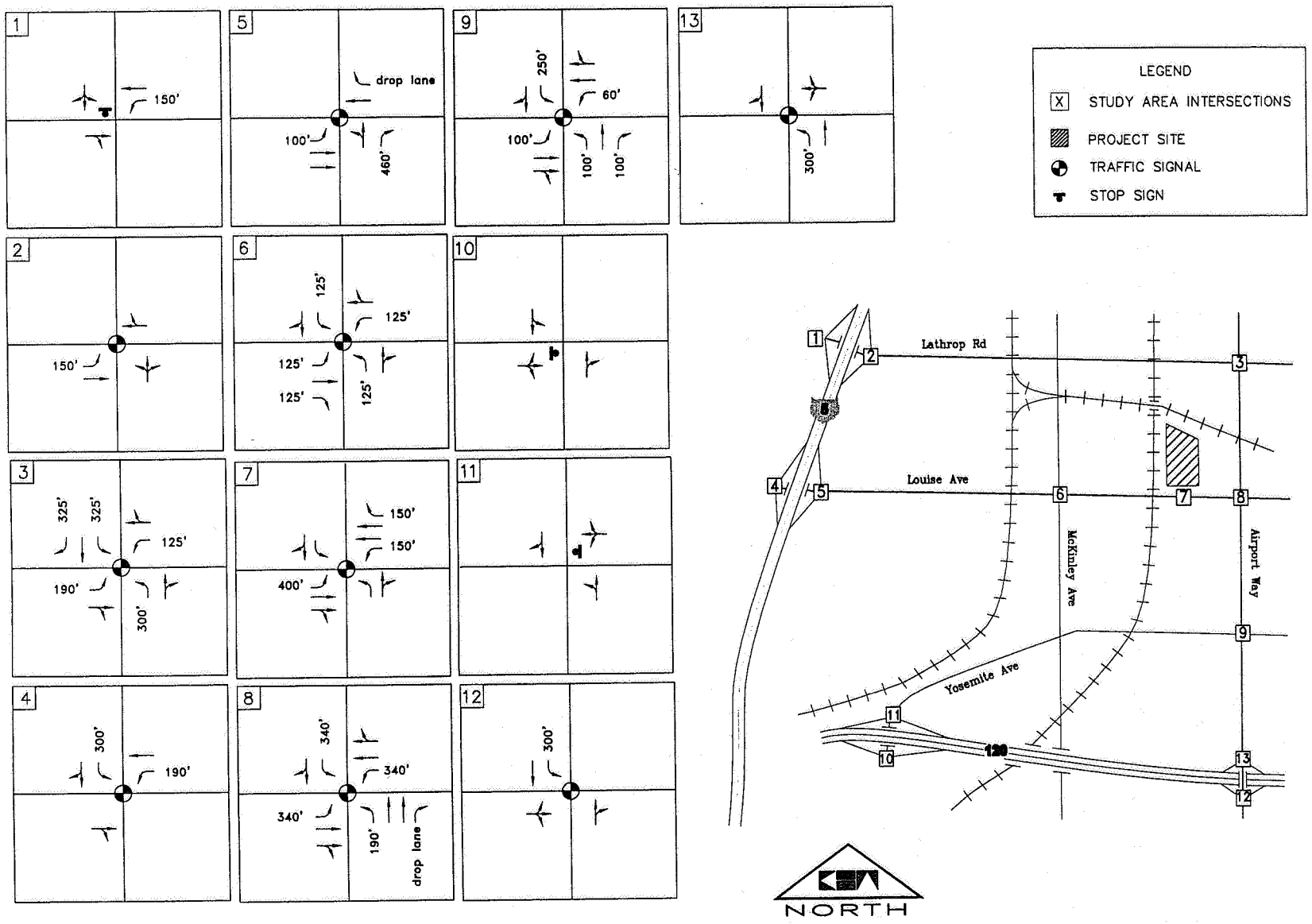
Roadway improvements:

- Construction of Louise Avenue to a four-lane arterial east of Airport Way, as per current design plans provided by the City. It was assumed the roadway improvements along the site frontage of the Assieh and Villa Ticino West projects will widen the cross section of Louise Avenue similar to the improvements on Louise Avenue east of Airport Way.
- Construction of Airport Way to a six-lane arterial from the Louise Avenue intersection to about 750 feet south.

Traffic Control Improvements: Based on preliminary analysis of the study intersections and a preliminary signal warrant analysis that included only Peak Hour Volume Warrant #11, the following intersections were assumed as being signalized between the existing and near-term conditions:

- Lathrop Road / I-5 NB Off-ramp. (Warrant #11 met under Existing conditions)
- Louise Avenue / Airport Way. (Warrant #11 met under Existing conditions)
- Airport Way / SR-120 EB Off-ramp. (Warrant #11 met under Existing conditions)
- Airport Way / SR-120 WB Off-ramp. (Warrant #11 met under Existing + Approved conditions)

Even though Peak Hour Volume Warrant is satisfied, it is recommended that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.



Assieh Industrial Park – Manteca, CA

FIGURE 6

NEAR-TERM LANE GEOMETRY AND TRAFFIC CONTROL

Kimley-Horn and Associates, Inc.

Near-Term Approved Development Projects

The Villa Ticino West residential subdivision will be located on the south side of Louise Avenue and the west side of Airport Way and will ultimately be developed before or roughly the same time as this project. Villa Ticino West will include single family dwellings, multi-family dwellings, fire station, parks, and an area of commercial development. Villa Ticino West traffic is considered in the near-term analysis of this EIR.

Near-Term Approved Development Vehicle Trips

An estimate of trips generated by the residential and commercial uses within Villa Ticino West were calculated through the use of trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition.*

As noted previously, trip generation data was not available for the Villa Ticino West project at the time this report was prepared. Therefore, this project estimated the approximate number of vehicle trips likely to be generated by the project. The trip generation rates for the single-family detached housing and multi-family housing were based on dwelling units (DU) as the independent variable.

Trips related to the retail/commercial uses were based on an assumed 0.42 floor area ratio for the 18.6 acres identified for the retail/commercial uses, per the direction of City staff. This resulted in approximately 333,000 square feet of development. The retail/commercial area was further assumed to include the following specific uses:

▪ Specialty Retail	190,000 square feet
▪ Supermarket	80,000 square feet
▪ Gasoline Station (w/ 12 Fueling Positions)	31,000 square feet
▪ High-Quality Sit-Down Restaurant	20,000 square feet
▪ Fast Food Restaurant w/ Drive Through	12,000 square feet
	333,000 square feet

Often with a new development a certain amount of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not new vehicle trips but are considered to be pass-by trips. Due to the nature of the commercial land use, pass-by trips are expected and therefore a pass-by trip reduction was applied to the project trip generation. The pass-by trip reduction was calculated based on the ITE *Trip Generation Handbook.* Trip generation calculations are included in the **Appendix**.

In addition, because of the close proximity of housing and retail/commercial in the Villa Ticino West project, many trips will be generated and attracted entirely within the development without using the major street network for circulation. Internal capture rates and reductions were calculated based on the methodology contained in the ITE

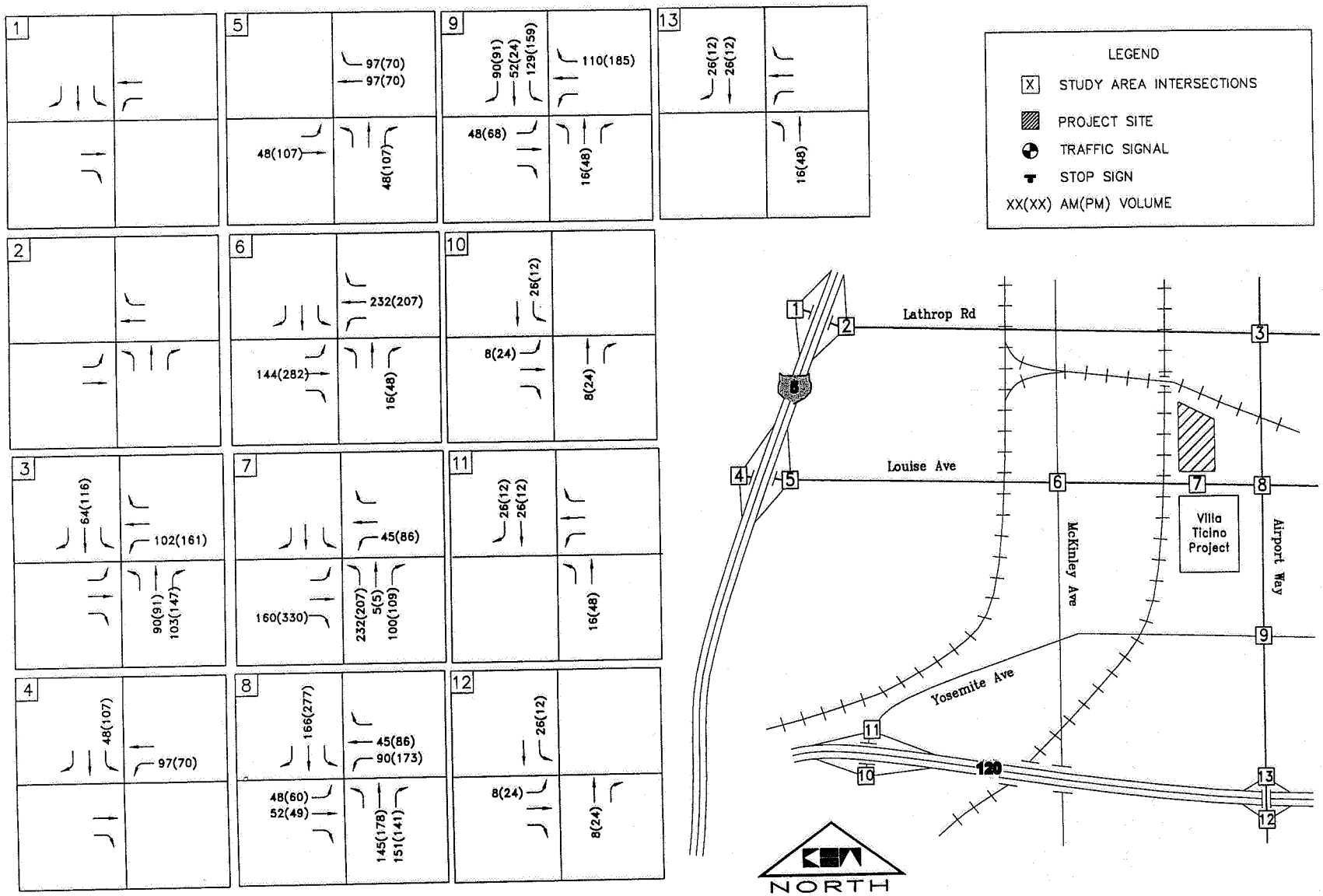
Trip Generation Handbook. Summary results of the internal capture calculations showed that approximately 22 percent of single family trips, 38 percent of multi-family trips, and 14 percent of retail/commercial trips would be contained within the Villa Ticino West development. The remaining trips are considered to be external trips and were ultimately assigned to the street network. It should be noted that internal capture information was only available for the PM peak hour.

Table 3 summarizes the results of the trip generation analysis as well as the internal capture and pass-by reductions for the Villa Ticino West development site.

Table 3 – Villa Ticino West Development Trip Generation

LAND USE	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Residential	8,732	161	521	682	583	321	904
Commercial	27,254	748	628	1,376	1,110	1,097	2,207
Subtotal	29,005	909	1,149	2,058	1,693	1,418	3,111
Residential Internal Capture Reduction	N/A	0	0	0	124	94	218
Commercial Internal Capture Reduction	N/A	0	0	0	94	124	218
Commercial Pass-by Reduction	N/A	273	245	518	332	300	632
Net New Vehicle Trips	N/A	636	904	1,540	1,143	900	2,043

As seen in **Table 3** the Villa Ticino West development is expected to generate 1,540 new trips in the AM peak hour and 2,043 new trips during the PM peak hour. **Figure 7** illustrates the Villa Ticino West development turning movement volumes at the study intersections and the approximate location of the housing/commercial project in relation to the Assieh project. It should be noted that the volumes shown in **Figure 7** are only related to the Villa Ticino project. Movements not showing volumes are not assumed to have Villa Ticino project traffic.



Assieh Industrial Park – Manteca, CA

FIGURE 7

APPROVED DEVELOPMENT GENERATED TRAFFIC VOLUMES

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Near-Term Existing Plus Approved Development

Existing traffic volumes were combined with vehicle trips expected to be generated by the nearby Villa Ticino West development. **Figure 8** illustrates the existing plus approved development turning movement volumes at the study intersections.

Near-Term Existing Plus Approved Development Plus Project

Existing traffic volumes and vehicle trips from the near-term Villa Ticino West development were combined with trips expected to be generated by the Assieh site. **Figure 9** illustrates the existing plus approved development plus project turning movement volumes at the study intersections.

LONG-TERM CONDITIONS

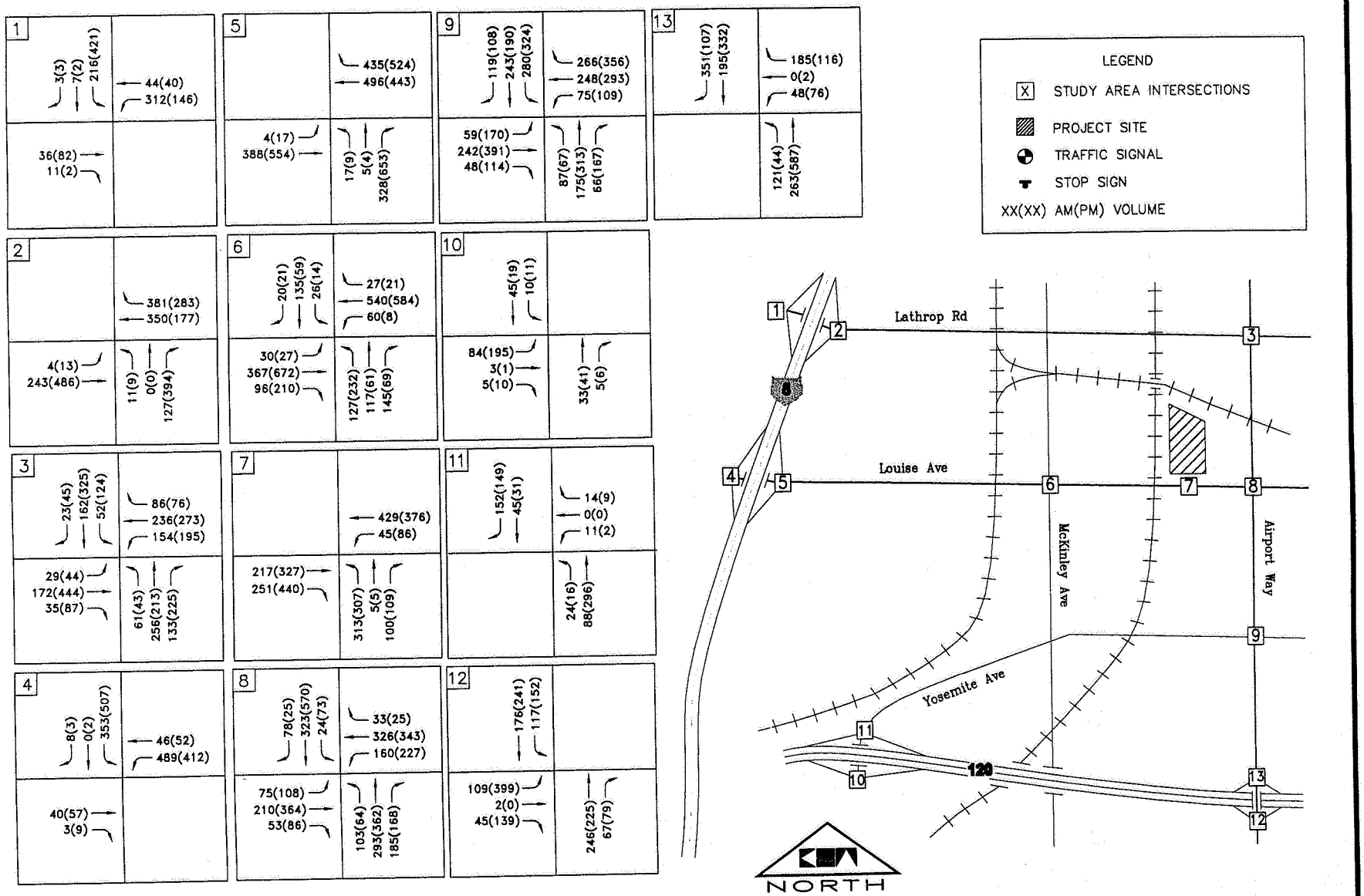
Long-Term Lane Configurations and Traffic Control

Roadway improvements are expected and planned by the City of Manteca for the study area before the year 2025. **Figure 10** illustrates the intersection geometry and traffic control assumed in the long-term analysis. The following roadway and traffic control improvements are in addition to the noted near-term improvements and are expected in the study area between the Near-Term conditions and the Long-Term conditions. Roadway improvements are development driven and assumed to be occurring concurrently with planned developments in the Near-Term and Long-Term scenarios.

Roadway improvements:

- Construction of the remaining portion of Louise Avenue to a four-lane arterial in the study area.
- Construction of the remaining portion of Airport Way to a six-lane arterial between the intersections of Lathrop Road and Yosemite Avenue, changing to a 4-lane arterial between the intersections of Yosemite Avenue and the SR-120 EB Ramps.
- Construction of Lathrop Road to a four-lane arterial in the study area.
- Construction of Yosemite Avenue to a four-lane arterial in the study area. The portion of Yosemite Avenue in the City of Manteca is currently a four-lane cross-section.

Traffic Control Improvements: As noted earlier, based on analysis of the study intersections and a preliminary signal warrant analysis that included only Peak Hour Volume Warrant #11, the following intersections were assumed as being signalized between the near-term and long-term conditions:

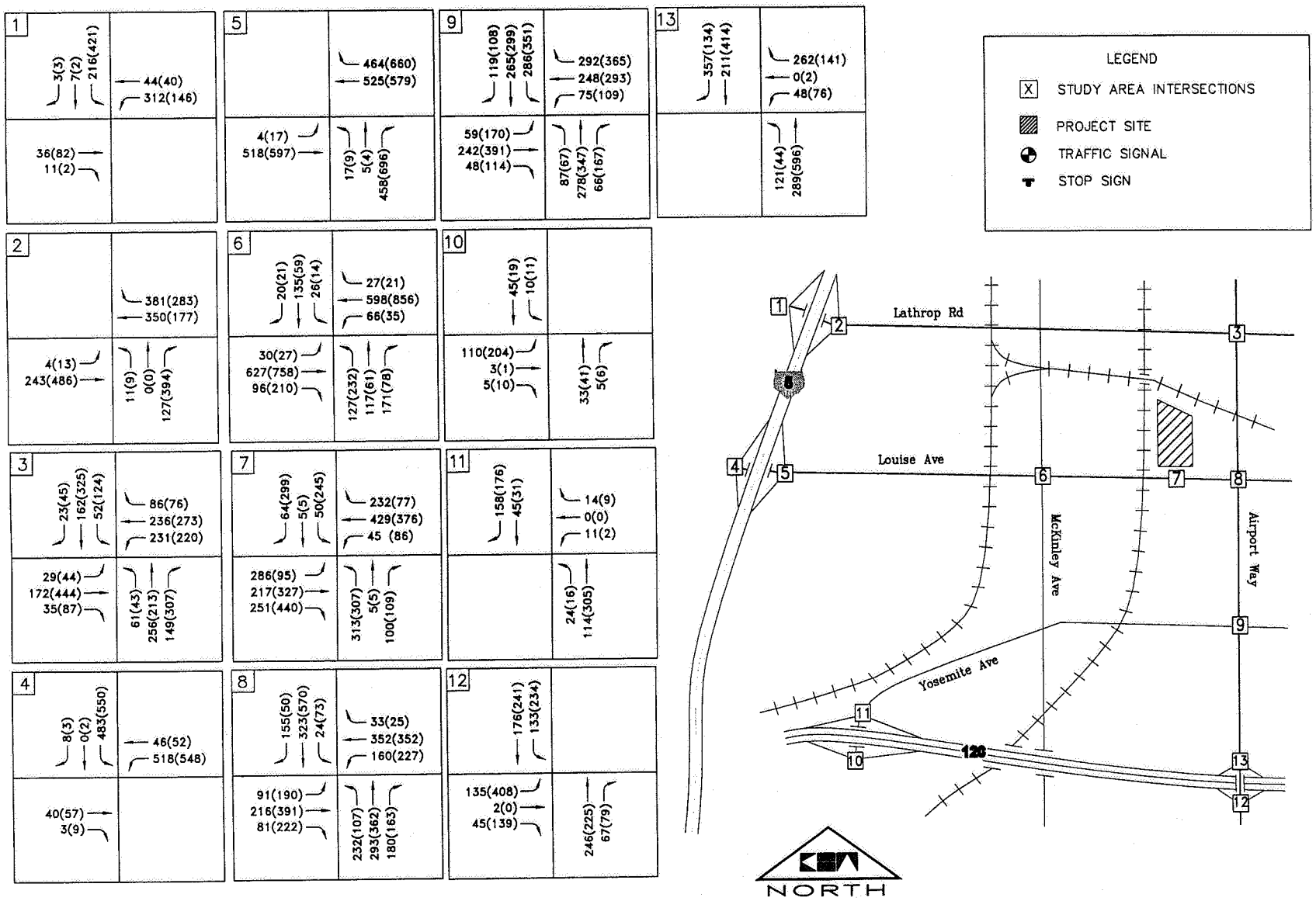


Assieh Industrial Park – Manteca, CA

FIGURE 8

EXISTING + APPROVED DEVELOPMENT TRAFFIC VOLUMES

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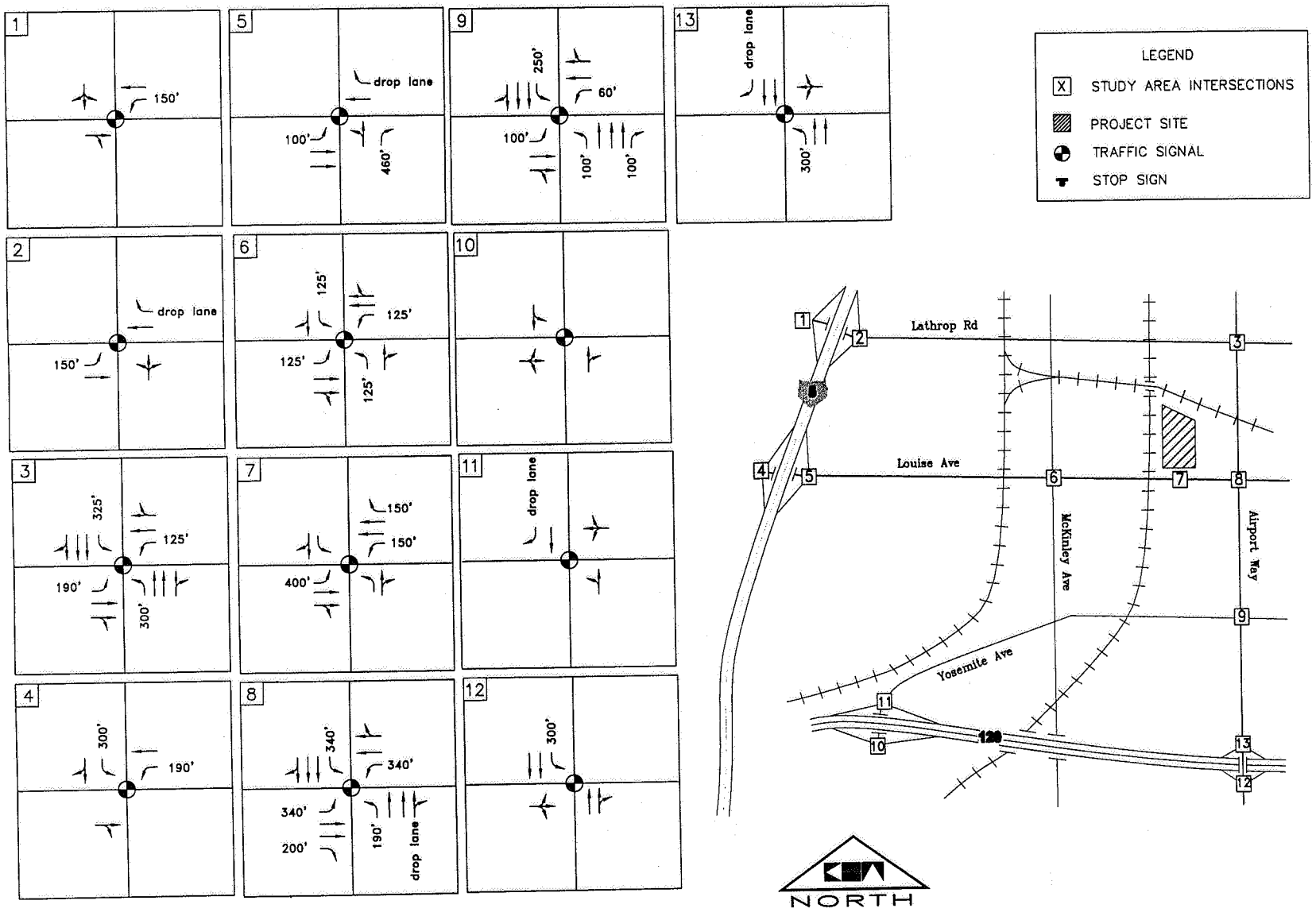


Assieh Industrial Park – Manteca, CA

FIGURE 9

EXISTING + APPROVED DEVELOPMENT + PROJECT TRAFFIC VOLUMES

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Assieh Industrial Park – Manteca, CA

FIGURE 10

LONG-TERM LANE GEOMETRY AND TRAFFIC CONTROL

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- Lathrop Road/I-5 SB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 WB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 EB ramps. (Warrant #11 met under cumulative conditions)

Even though Peak Hour Volume Warrant is satisfied in the long term, it is recommended that traffic be monitored and that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.

Long-Term Cumulative (No Project)

Forecasts for year 2025 were provided by the San Joaquin Council of Governments (SJCOG) from their 2025 Regional Transportation Program (RTP) model. SJCOG provided plots of the 2025 RTP model illustrating the bi-directional daily traffic volumes on each segment of the roadways in the study area. After review of the SJCOG forecasts it was determined that the SJCOG model underestimated traffic volumes at some of the freeway interchanges where the greatest amount of future traffic growth is anticipated in the future. The location of greatest deficiency was noted to occur at the I-5/Louise Avenue intersections.

To reconcile the forecast, Kimley-Horn obtained the same traffic projections that were used for the Villa Ticino West study. Villa Ticino West used the Manteca General Plan Traffic Model which is an enhanced version of the SJCOG model. In comparing the two models' 2025 forecasts, it was noted that near the Assieh site, the forecasts were very similar, but varied farther away from the project site. As a result, it was ultimately determined to use the same forecasts and cumulative turning movement volumes as in the Villa Ticino West project. To the extent that data was available, cumulative volumes associated with the Villa Ticino West project were used directly from the report. In some instances the report did not include all the same intersections as in the Assieh study; therefore, Kimley-Horn developed turning movement volumes at the remaining (missing) study intersections near the freeways.

Forecast model link volumes were used to develop turning movement volumes at each missing study intersection. The following steps were taken to develop turning movement volumes from the link volumes provided.

1. **Development of peak hour approach volumes**. The daily volumes from the Manteca General Plan Traffic Model were used to calculate the expected AM and PM peak hour volumes on the approaches to the missing intersections. Existing count data was used to determine the percent of daily traffic that was accounted for by AM and PM peak hour traffic. It was determined that the AM and PM peak hours accounted for 6 percent and 7 percent of the total daily traffic, respectively.

These percentages were applied to the forecast daily traffic volumes to calculate the expected AM and PM peak hour volume on the approaches to each intersection.

2. **Development of peak hour turning movement volumes**. The peak hour approach volumes calculated were used to develop expected AM and PM peak hour turning movement volumes at each intersection. An iterative process was used to convert the approach volume to turning movement volume. The iterative process included using the use of variables such as the percent peak hour traffic of daily traffic, the expected directional distribution of traffic, and the entering and exiting volumes of each intersection. This process produced AM and PM peak hour turning movement volumes at each intersection.

Figure 11 illustrates the cumulative turning movement volumes at the study intersections.

Long-Term Cumulative Plus Project

Trips associated with the Assieh Industrial Park were added to the cumulative forecast. **Figure 12** illustrates the cumulative plus project traffic volumes at the study intersections.

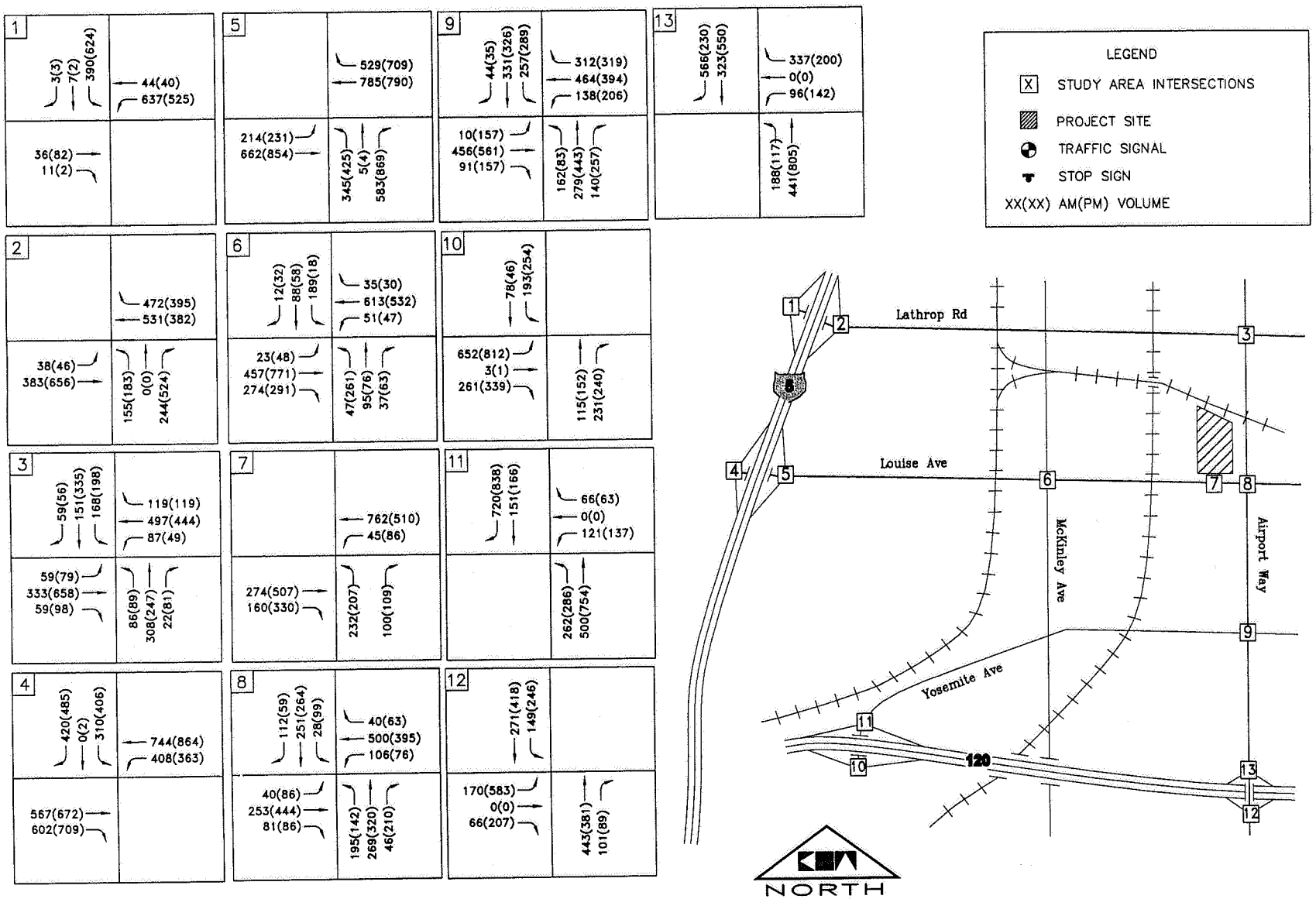
NEAR-TERM LOS CONDITIONS AND IMPACTS

Traffic operations were evaluated under the following near-term development conditions:

- Existing traffic conditions
- Existing plus traffic from other approved projects
- Total traffic conditions (existing plus traffic from other nearby planned projects plus project traffic)

Results of the analysis are presented in **Table 4**. The table separates the results by traffic control, i.e. signalized, two-way stop controlled, or all-way stop controlled. It should be noted that the *Highway Capacity Manual* (HCM) analysis method does not generate an overall level of service for a two-way stop controlled intersection, so results for specific travel movements is summarized. Detailed calculations for the near-term analyses are included in the **Appendix**.

As part of the evaluation of results, consideration was given to adding additional left turn lanes when turn volumes exceeded more than 300 vehicles per hour. Right turn lanes were considered when right turn volumes exceeded 200 vehicles per hour. Justification for additional turn lanes was also weighed heavily against results of the operational analyses.

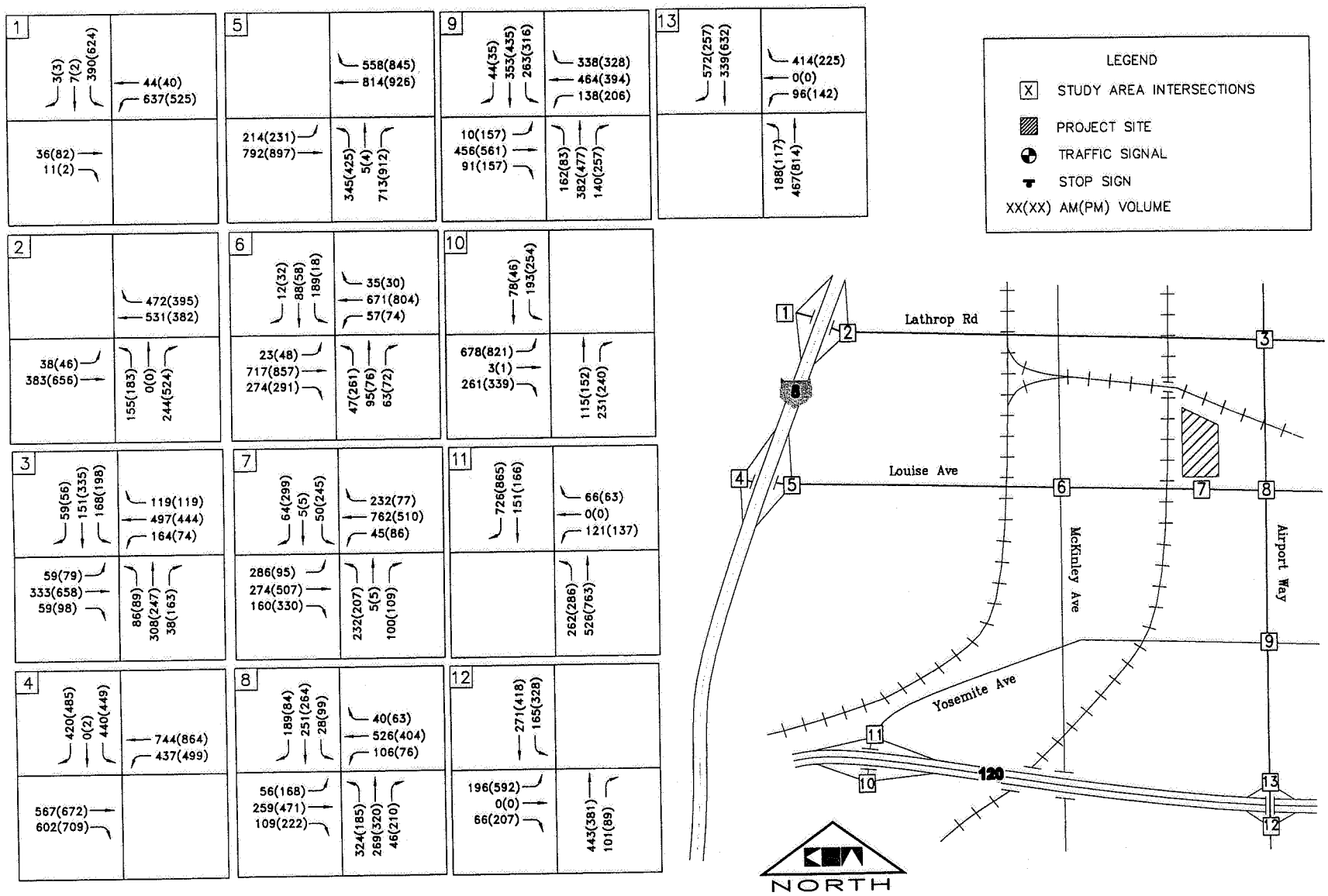


Assieh Industrial Park – Manteca, CA

FIGURE 11

LONG-TERM CUMULATIVE 2025 TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

FIGURE 12

LONG-TERM CUMULATIVE + PROJECT TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.

Table 4 – Existing and Near-Term Level of Service Summary Table

	Time Frame	Current		Near-Term			
	Traffic Source	Existing		Existing + Approved Development		Existing + Approved Development + Project	
	Peak Period	AM	PM	AM	PM	AM	PM
Signalized Intersections							
2	I-5 NB Ramps / Lathrop Road	-	-	A	A	A	A
3	Airport Way / Lathrop Road	B	C	C	D	C	E
4	I-5 SB Ramps / Louise Avenue	B	C	C	C	D	D
5	I-5 NB Ramps / Louise Avenue	A	A	A	C	B	D
6	McKinley Avenue / Louise Avenue	C	B	D	C	E	D
7	Project Driveway / Louise Avenue	-	-	-	-	C	C
8	Airport Way / Louise Avenue	-	-	C	C	C	D
9	Airport Way / Yosemite Avenue	B	C	C	C	C	C
12	Airport Way / SR-120 EB Ramps	-	-	B	D	B	C
13	Airport Way / SR-120 WB Ramps	-	-	A	A	B	A
Two-Way Stop Controlled Intersections							
1	I-5 SB Ramps / Lathrop Road						
	Southbound	F	F	F	F	F	F
	Westbound Left	A	A	A	A	A	A
2	I-5 NB Ramps / Lathrop Road						
	Northbound	B	E	-	-	-	-
	Eastbound Left	A	A	-	-	-	-
7	Project Driveway / Louise Avenue						
	Northbound	-	-	F	F	-	-
	Westbound Left	-	-	A	B	-	-
10	Yosemite Avenue / SR-120 EB Ramps						
	Eastbound	A	B	A	B	B	B
	Southbound Through-Shared-Left	A	A	A	A	A	A
11	Yosemite Avenue / SR-120 WB Ramps						
	Westbound	A	A	A	B	B	B
	Northbound Through-Shared-Left	A	A	A	A	A	A
12	Airport Way / SR-120 EB Ramps						
	Eastbound	C	F	-	-	-	-
	Southbound Left	A	A	-	-	-	-
13	Airport Way / SR-120 WB Ramps						
	Westbound	C	E	-	-	-	-
	Northbound Left	A	A	-	-	-	-
All-Way Stop Controlled Intersections							
8	Airport Way / Louise Avenue	E	F	-	-	-	-

Existing Traffic Conditions

As shown in **Table 4**, each of the existing study area signalized intersections operate at Level of Service (LOS) C or better during the AM and PM peak periods; however, some unsignalized intersections operate below an acceptable threshold. These are existing deficiencies.

The following movements at the two-way stop-controlled study intersections currently operate at LOS E or F:

- Lathrop Road/I-5 SB Ramps (Southbound approach). The delay is caused by the lack of gaps in the traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. Due to the nature of two-way stop controlled intersections, no mitigation is available except future signalization.
- Lathrop Road/I-5 NB Ramps (Northbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. If the northbound approach is widened to permit a full left and right turn lane for the off-ramp, the operation would be improved to LOS D under the existing condition.
- Airport Way/SR-120 EB Ramps (Eastbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. Due to the nature of two-way stop controlled intersection, no mitigation is available except future signalization.
- Airport Way/SR-120 WB Ramps (Westbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. If the approach is widened to permit a full left and right turn lanes for the westbound off-ramp, the operation would be improved to LOS C under the existing condition.

Each of these poor operating conditions occurs on the off-ramp leg to the listed intersections. The queue for each of the identified approaches was analyzed to determine if any of the queues encroached on the through travel lanes of either I-5 or SR-120. It was determined that none of the anticipated queues at these approaches will encroach on the travel lanes of the roadway they are exiting.

It should be noted that the intersections at Airport Way and SR-120 are part of a more detailed study being completed as part of a separate project. It is possible that additional improvements may be identified in the future at this location.

In addition, the intersection of Airport Way and Louise Avenue is an all-way stop-controlled intersection and will operate at LOS E and LOS F in the AM and PM peak hours, respectively. The poor level of service at this intersection is caused by a lack of capacity at the all-way stop-controlled intersection. If the intersection were to be widened to add left turn lanes, the capacity would be increased to LOS D under the existing condition.

Near-Term Traffic Conditions without the Project

As shown in **Table 4**, near-term operating conditions with traffic from other planned developments (but without traffic from the Assieh project) are at LOS D or better at the signalized intersections. It should be noted that the intersections of Lathrop Road/I-5 NB Ramps, Airport Way/SR-120 EB Ramps, and Airport Way/SR-120 WB Ramps were assumed to be signalized in the near-term and therefore their operation level will improve over their existing condition assuming a signal is installed.

The southbound approach of the unsignalized intersection of Lathrop Road and I-5 SB Ramps continues to operate at LOS F in the near-term condition. This is a condition independent of the Assieh project. As noted in the existing conditions analysis, due to the nature of two-way stop controlled intersections, no mitigation is available for this intersection except for future signalization; however, this intersection currently does not warrant a signal under the near-term analysis conditions but Caltrans may decide to install a signal in the future at this intersection to mitigate the poor level of service of this movement. The queue for this approach was analyzed and it was determined that it will not encroach of the travel lanes of I-5 SB.

Included in the background evaluation is the addition of the Villa Ticino West project (shown at intersection #7). According to the results, the new traffic generated by the Villa Ticino West project will cause the intersection to operate at LOS F if the project roadway is controlled by a stop sign on the minor approach. Therefore, it was assumed that a signal would be installed to address the unacceptable level of service.

Near-Term Traffic Conditions with the Project

As noted, the project driveway analysis for the Assieh site was performed assuming a shared full movement access driveway, connecting to the future Villa Ticino West project roadway to the south. The following documents the results for each intersection with this driveway condition.

As shown in **Table 4**, future near-term operating conditions with the project are LOS D or better at 8 of the 10 signalized study intersections assuming the project driveway is a signalized shared full movement access driveway. The following signalized intersections operate at LOS E or E in either or both the AM and PM peak hour. Each intersection is listed and mitigation measures are recommended to improve the intersection operation to an acceptable level.

- **Airport Way/Lathrop Road**. This intersection is shown to operate at a LOS C in the AM peak hour and LOS E in the PM peak hour. To mitigate this poor operation level an eastbound right turn bay of no less than 125 feet should be installed, improving the intersection operation to LOS D in the peak hour.
- **McKinley Avenue/Louise Avenue**. This intersection is shown to operate at a LOS E in the AM and at LOS D in the PM peak hour. To mitigate this poor

operation level both a westbound and a southbound right turn bay should be installed of no less than 100 feet each. The installation of these southbound turn bays improves the intersection operation to LOS D in both the AM and PM peak hours.

The following movements at the unsignalized study intersections currently operate at LOS E or F:

- **Lathrop Road/I-5 SB Ramps (Southbound approach).** The southbound approach will continue to operate at an unacceptable level of service, regardless of the Assieh project. Assieh related traffic is not anticipated to use the intersection; therefore, the congestion is a preexisting condition and no mitigation is necessary.

Although the analysis does not show a specific overall level of service deficiency at the Louise Avenue/Airport Way intersection, it is recommended that a separate eastbound right turn lane be constructed in the near-term at the intersection. The Assieh Industrial Park will generate approximately more than 130 eastbound right turn vehicles at the intersection in addition to other traffic. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be 200 feet.

LONG-TERM CUMULATIVE LOS CONDITIONS AND IMPACTS

Traffic operations were evaluated under the following long-term development conditions:

- Cumulative long-term conditions without the project
- Cumulative long-term conditions plus the project

Results of the analysis are presented in **Table 5**. The table is separated by traffic control; i.e. signalized, two-way stop controlled, or all-way stop controlled. As noted, the HCM does not generate an overall level of service for a two-way stop-controlled intersection, so results for specific travel movements is summarized. Detailed calculations for the long-term analyses are included in the **Appendix**.

Long-Term Cumulative Traffic Conditions without the Project

As shown in the table, several intersections will not meet established level of service thresholds under cumulative traffic conditions, even without the Assieh Industrial Park. Much of the congestion and related poor level of service is connected with significant development in Manteca and Lathrop, particularly on the west side of I-5. Therefore, it was assumed that several additional roadway improvements would occur in association with other cumulative development projects. The following briefly describes additional improvements assumed to be completed to support cumulative growth regardless of the industrial park.

- **Lathrop Road/I-5 NB Ramps.** Add a 300 foot northbound right turn lane to the off ramp. The change will improve the operation to LOS A in the AM and LOS C in the PM.
- **Louise Avenue/SB I-5 Ramps.** Add a westbound through lane, eastbound through lane, and an eastbound right lane. The change will improve the operation to LOS C in the AM and LOS D in the PM.
- **Louise Avenue/NB I-5 Ramps.** Add a westbound through lane and a 400 foot northbound left turn lane and restripe the approach to include a shared through-right lane and exclusive right turn lane. Making the change improves the level of service to C in the AM and D in the PM.
- **Airport Way/SR-120 EB Ramps**. Add a 100 foot eastbound right lane. The change will improve the operation to LOS B in the AM and LOS C in the PM.
- **Yosemite Avenue/SR-120 EB Ramps**. Add a 350 foot eastbound left and 100 foot eastbound right lane. Also restripe the eastbound approach to also have a shared left-through lane. Currently the ramp is striped as a shared left-through-right lane.

Long-Term Cumulative Traffic Conditions with the Project

As shown in **Table 5**, future long-term operating conditions with the project are LOS D or better at all signalized study intersections. As seen in the table, only the Louise Avenue/SB I-5 Ramps intersection drops below an acceptable operation with the project, (assuming all the above projects are constructed as a result of other cumulative development). Evaluation of the intersection showed that the operation could be improved to LOS D in the AM and PM by adding a 300 foot southbound right turn lane at the intersection.

At the request of the city, eastbound queuing from the project driveway was evaluated and found to be less than 400 feet which is not expected to affect the operation of the nearby Union Pacific Railroad crossing.

Table 5 – Long-Term Level of Service Summary Table

	Time Frame	Current		Long-Term					
	Traffic Source	Existing		Cumulative		Cumulative + Improvement		Cumulative + Project	
	Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
Signalized Intersections									
1	I-5 SB Ramps / Lathrop Road	-	-	C	D	C	D	C	D
2	I-5 NB Ramps / Lathrop Road	-	-	B	E	A	C	A	C
3	Airport Way / Lathrop Road	B	C	C	C	C	C	C	C
4	I-5 SB Ramps / Louise Avenue	B	C	F	F	C	D	D	E
5	I-5 NB Ramps / Louise Avenue	A	A	F	F	C	D	C	D
6	McKinley Avenue / Louise Avenue	C	B	C	D	C	D	D	D
7	Project Driveway / Louise Avenue	-	-	A	A	A	A	C	C
8	Airport Way / Louise Avenue	-	-	B	C	B	C	C	C
9	Airport Way / Yosemite Avenue	B	C	C	D	C	D	C	D
10	Yosemite Ave/SR-120 EB Ramps	-	-	F	F	B	D	B	D
11	Yosemite Ave/SR-120 WB Ramps	-	-	B	D	B	D	B	D
12	Airport Way / SR-120 EB Ramps	-	-	B	E	B	C	B	D
13	Airport Way / SR-120 WB Ramps	-	-	A	B	A	B	A	B
Two-Way Stop Controlled Intersections									
1	I-5 SB Ramps / Lathrop Road								
	Southbound	F	F	-	-	-	-	-	-
	Westbound Left	A	A	-	-	-	-	-	-
2	I-5 NB Ramps / Lathrop Road								
	Northbound	B	E	-	-	-	-	-	-
	Eastbound Left	A	A	-	-	-	-	-	-
7	Project Driveway / Louise Avenue								
	Southbound	-	-	-	-	-	-	-	-
10	Yosemite Avenue / SR-120 EB Ramps								
	Eastbound	A	B	-	-	-	-	-	-
	Southbound Through-Shared-Left	A	A	-	-	-	-	-	-
11	Yosemite Avenue / SR-120 WB Ramps								
	Westbound	A	A	-	-	-	-	-	-
	Northbound Through-Shared-Left	A	A	-	-	-	-	-	-
12	Airport Way / SR-120 EB Ramps								
	Eastbound	C	F	-	-	-	-	-	-
	Southbound Left	A	A	-	-	-	-	-	-
13	Airport Way / SR-120 WB Ramps								
	Westbound	C	E	-	-	-	-	-	-
	Northbound Left	A	A	-	-	-	-	-	-
All-Way Stop Controlled Intersections									
8	Airport Way / Louise Avenue	E	F	-	-	-	-	-	-

IMPACTS AND MITIGATIONS

Impacts and mitigations are summarized below. Text contained in parentheses (e.g. Near-Term) is intended to indicate the condition when the impact is first identified. These impacts are based on the assumption that the Villa Ticino West roadway will be realigned to match the location of the Assieh project driveway. Furthermore, it assumes that several roadway and signal projects will be constructed in the near and long term as a result of existing deficiencies and other development unrelated to the Assieh Industrial Park.

Impact TRANS-1 (Near-Term): The intersection of Airport Way and Lathrop Road is shown to operate at a LOS C in the AM peak hour and LOS E in the PM peak hour in the near-term condition.

> **Mitigation Measure TRANS-1 (Near-Term):** Construct a 125 foot eastbound right turn bay to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection.

Impact TRANS-2 (Near-Term): The intersection of McKinley Avenue and Louise Avenue is shown to operate at a LOS E in the AM and peak hour and LOS D in the PM peak hour.

> **Mitigation Measure TRANS-2 (Near-Term):** Construct a 100 foot westbound and a 100 foot southbound right turn bay to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection.

Impact TRANS-3 (Near-Term): The intersection of Louise Avenue and the project driveway operates at level of service F in controlled by stop signs on the driveway approach.

> **Mitigation Measure TRANS-3 (Near-Term):** Install an 8-phase traffic signal at the intersection to improve the operation to LOS C in the AM and PM. Based on the proportion of Assieh traffic compared with Villa Ticino West, the Assieh project should pay 52% of the total design and construction costs. Villa Ticino should pay 48% of the costs.

Impact TRANS-4 (Long-Term): The intersection of I-5 SB Ramps / Louise Avenue is shown to operate at a LOS D in the AM peak hour and LOS E in the PM peak hour.

> **Mitigation Measure TRANS-4 (Near-Term):** Construct a 300 foot southbound right turn lane to the intersection. The ramp approach will require widening at the intersection. The additional lane will improve the operation to LOS D in both the AM and PM peak hours.

Other Recommendation

The Assieh Industrial Park will generate approximately more than 130 eastbound right turn vehicles at the Louise Avenue/Airport Way intersection. Although the analysis does not show a specific overall level of service deficiency at the intersection, it is recommended that a separate eastbound right turn lane be constructed in the near term at the intersection. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be 200 feet.

TRAFFIC STUDY FOR AN ENVIRONMENTAL IMPACT REPORT

ASSIEH INDUSTRIAL PARK

APPENDIX

The Traffic Modeling Data Is Available for Review at the

City of Manteca Community Development Department.

Traffic Study for an Environmental Impact Report

ASSIEH INDUSTRIAL PARK
MANTECA, CA

26 May 2004

Prepared for:

Michael Brandman Associates, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.

TABLE OF CONTENTS

INTRODUCTION **1**
Study Methodology 1
Land Use, Site, and Study Area Boundaries 3
Existing and Proposed Site Uses 3
Existing and Proposed Uses in Vicinity of Site 3
Site Access 3
Assieh Driveway Design and Internal Circulation 5
Intersections Included in Analysis 6

EXISTING CONDITIONS **6**
Existing Roadway Network 6
Existing Lane Configurations and Traffic Control 7
Existing Traffic Turning Movement Volumes 7
Existing Pedestrian and Bicycle Facilities 10
Existing Transit Service 10

PROJECT TRIP GENERATION AND DISTRIBUTION **10**
Project Trip Generation 10
Project Trip Distribution and Assignment 11

NEAR-TERM CONDITIONS **14**
Near-Term Lane Configurations and Traffic Control 14
Near-Term Approved Development Projects 16
Near-Term Approved Development Vehicle Trips 16
Near-Term Existing Plus Approved Development 19
Near-Term Existing Plus Approved Development Plus Project 19

LONG-TERM CONDITIONS **19**
Long-Term Lane Configurations and Traffic Control 19
Long-Term Cumulative (No Project) 23
Long-Term Cumulative Plus Project 24

NEAR-TERM LOS CONDITIONS AND IMPACTS **24**
Existing Traffic Conditions 28
Near-Term Traffic Conditions without the Project 29
Near-Term Traffic Conditions with the Project 29

LONG-TERM CUMULATIVE LOS CONDITIONS AND IMPACTS **30**
Long-Term Cumulative Traffic Conditions without the Project 30
Long-Term Cumulative Traffic Conditions with the Project 31

IMPACTS AND MITIGATIONS **33**
Other Recommendation 34

LIST OF FIGURES

Figure 1 – Project Location and Study Intersections 4
Figure 2 – Existing Lane Geometry and Traffic Control 8
Figure 3 – Existing Peak Hour Turning Movement Volumes 9
Figure 4 – Project Trip Distribution 12
Figure 5 – Project Generated Traffic Volumes 13
Figure 6 – Near-Term Lane Geometry and Traffic Control 15
Figure 7 – Approved Development Generated Traffic Volumes 18
Figure 8 – Existing + Approved Development Traffic Volumes 20
Figure 9 – Existing + Approved Development + Project Traffic Volumes 21
Figure 10 – Long-Term Lane Geometry and Traffic Control 22
Figure 11 – Long-Term Cumulative 2025 Traffic Volumes 25
Figure 12 – Long-Term Cumulative + Project Traffic Volumes 26

LIST OF TABLES

Table 1 – Intersection Level of Service Definitions 2
Table 2 – Site Trip Generation 11
Table 3 – Villa Ticino West Development Trip Generation 17
Table 4 – Existing and Near-Term Level of Service Summary Table 27
Table 5 – Long-Term Level of Service Summary Table 32

INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Michael Brandman Associates, Inc. (MBA) to study the traffic impact for the proposed development of the Assieh Industrial Park in Manteca, California. This report was prepared based on discussions with, and criteria set forth by, the City of Manteca. The purpose of this study is to address the traffic and transportation impacts of the proposed development in order to assist the project sponsor and the City in project planning and to provide information relevant to this project's place in the City's General Plan.

This report focused on an area that lies in the northwest portion of the City of Manteca. The proposed Assieh Industrial Park is located west of the intersection of Airport Way and Louise Avenue, just east of the City limit. The City of Lathrop is located slightly west of the study area, with the Union Pacific Railroad serving as the boundary between the two cities.

Study Methodology

The traffic study was based on the following development conditions:

- **Existing conditions** – Based on peak hour current traffic counts, existing roadway geometry, and existing development conditions.
- **Background traffic conditions** (Existing plus approved development) – Based on existing traffic volumes and traffic added by nearby approved developments and roadway improvements anticipated to be completed before or the same time as this project.
- **Total traffic conditions** (Existing plus approved development plus project) – Based on existing traffic volumes, traffic added by nearby approved development, and traffic generated by the proposed project. Includes roadway improvements anticipated to be completed before or the same time as the project completion.
- **Cumulative long-term conditions without the project** – Based on 2025 traffic forecast data without the project. Includes roadway improvements anticipated to be completed by the year 2025.
- **Cumulative long-term conditions plus project** – Based on 2025 traffic forecast data with the project. Includes roadway improvements anticipated to be completed by the year 2025.

The traffic study was based on the following operating conditions. Operating conditions experienced by drivers are described in terms of Level of Service (LOS), which is a qualitative measure of factors such as delay, speed, travel time, freedom to maneuver, and driving comfort and convenience. Levels of service are represented by a letter scale from LOS A to LOS F, with LOS A representing the best performance and LOS F representing the poorest performance. LOS D or better is considered satisfactory operation at intersections within the City of Manteca.

Table 1 relates the operational characteristics associated with each level of service category for both signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized Average control delay per vehicle (sec/vehicle)	Unsignalized Average control delay per vehicle (sec/vehicle)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

Source: Transportation Research Board, *Highway Capacity Manual 2000*, National Research Council, 2000.

Traffic analysis was completed using *Synchro* at signalized intersections and *Highway Capacity Software* at unsignalized intersections. Both software platforms are based on the methodology of the *Highway Capacity Manual*.

Land Use, Site, and Study Area Boundaries

The project is proposed to include 1,404,680 square feet of industrial development titled the Assieh Industrial Park (Assieh) located west of the intersection of Airport Way and Louise Avenue. **Figure 1** illustrates the project location.

Existing and Proposed Site Uses

The proposed project site is generally level, similar to the surrounding terrain in the study area and is currently vacant of development. It should be noted that this report is based on the site plan dated September 26, 2002. Any future revisions to the site plan may result in a change in the assumptions of this study and thereby the study findings.

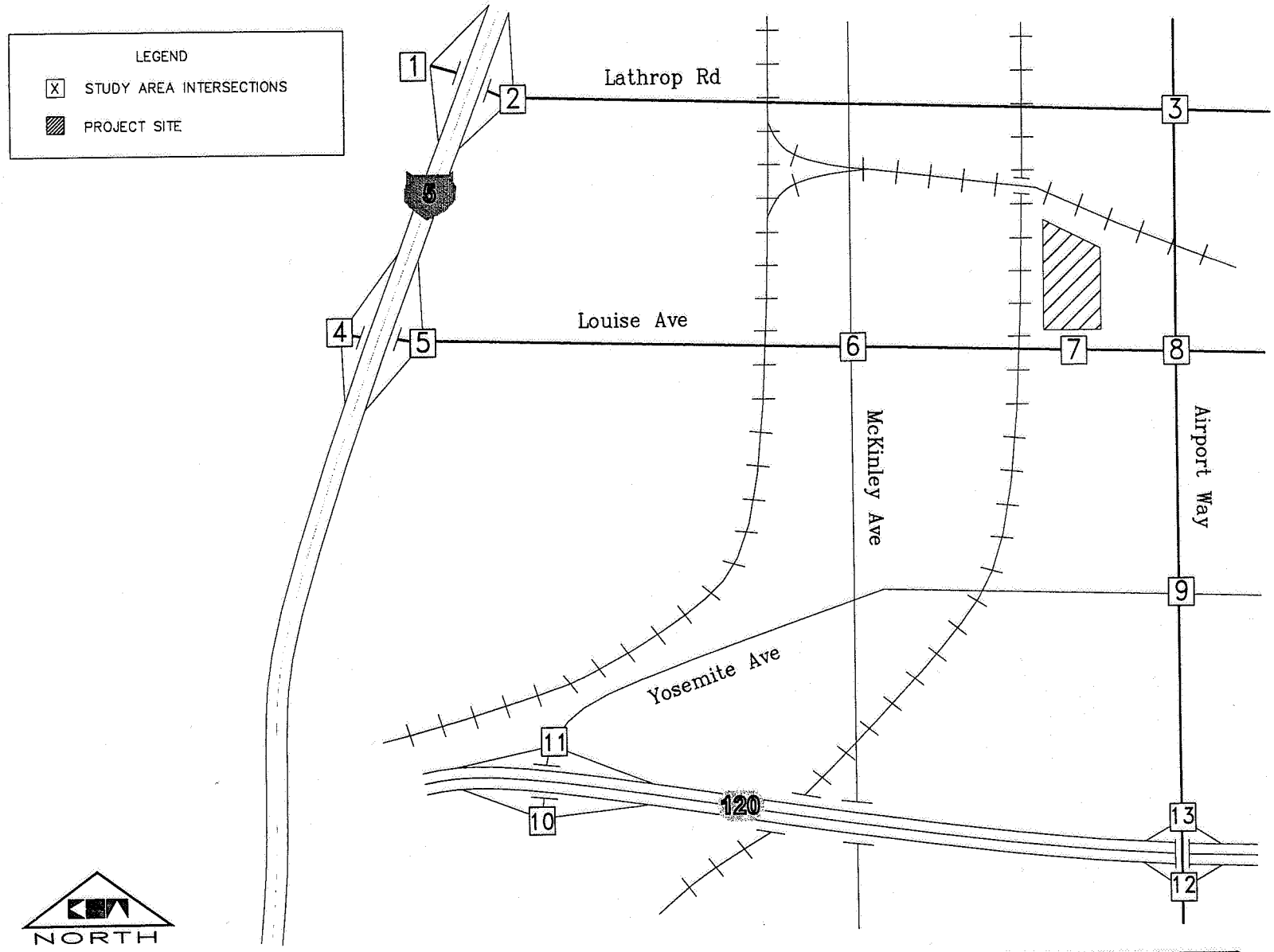
Existing and Proposed Uses in Vicinity of Site

The land area surrounding the project site is relatively vacant and used for agricultural purposes, except for some residential and other various industrial and warehousing land uses. South of the project site is the proposed Villa Ticino West development. When completed, the Villa Ticino site will consist of approximately 760 single family homes, 220 multi-family apartments, 18 acres of commercial uses, a fire station, and about 15 acres of parks and drainage basins. At the time this study was originally prepared, the Villa Ticino West project was still in the planning stages and had not submitted a traffic report to the city. (Since then, a traffic report has been prepared.) Because no traffic study was available for the Villa Ticino West project, this analysis prepared an estimate of the traffic likely to be generated by the Villa Ticino West development.

Site Access

Access to the Assieh Industrial Park is proposed from Louise Avenue. The project driveway is proposed to operate as either stop-controlled on the driveway approach or a signalized intersection. If the project driveway is selected to operate as a stop-controlled intersection, the driveway would permit only right turning vehicles in and out of the site and prohibit all other movements. This alternative is not recommended due to issues related to enforcement of the turning prohibition and intersection geometry. If the project driveway operates as a signalized intersection, the driveway will permit all turning movements entering and exiting the driveway.

The Villa Ticino West project is currently planned to include a driveway on Louise Avenue, east of the proposed driveway location for the Assieh Industrial Park. These driveways could be aligned to allow for a full movement signalized intersection. To construct this new four-legged, signalized intersection, either the Villa Ticino West project or both projects would have to modify their site plans to re-align their respective project roadways with one another. It should be noted because of the relatively narrow site frontage of the Assieh project on Louise Avenue that it is not possible to realign the Assieh access to fully align with the access for the Villa Ticino West project. Therefore, the full movement access scenario is recommended and analyzed throughout the remainder of this report.



Assieh Industrial Park – Manteca, CA

FIGURE 1

PROJECT LOCATION AND STUDY INTERSECTIONS

Kimley-Horn and Associates, Inc.

The Villa Ticino West project also includes the construction of a fire station on Louise Avenue, located between the high-density residential development and the commercial development portion of the Villa Ticino West project. At the time this report was prepared, the configuration of the fire station access to Louise Avenue and to the surrounding Villa Ticino development was unknown. However, the likely access is more than 1,100 feet from the proposed access to the Assieh project. Because of the anticipated distance and the low traffic associated with the fire station, no operational or safety conflicts are anticipated between the two. Nevertheless, it is assumed that the access will be further evaluated as part of the Villa Ticino traffic study. At that time, the City should review the entering and exiting movements of the proposed fire station to assure immediate and convenient access to/from the fire station. The fire station may require a connection to the Villa Ticino West project roadway to allow for better access to areas west of the study area and limit the need for fire engines to make a U-turn movement at the Louise Avenue/Airport Way intersection.

Assieh Driveway Design and Internal Circulation

According to the site plan, the project will construct a westbound right turn lane into the project site. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be at least 150 feet.

TJKM Transportation Consultants performed an analysis on the Assieh driveway and site internal circulation in a letter to MBA dated April 24, 2003. The pertinent contents of that letter are below.

> "Template analysis shows that passenger cars with an outer turning radius of 24 feet do not have any difficulty entering and/or exiting the main entrance along Louise Avenue and the individual parking lots for the six warehouse structures/nine warehouses buildings. Template analysis was also performed for a five-axle large semi-trailer with a wheelbase of 50-feet (WB-50). The analysis indicates that the large semi-trailer trucks with an outer path turning radius of 45 feet can access the docking ramps at all nine warehouse locations.
>
> The template analysis indicates that the trucks with a 45 to 60 feet outer path turning radius should be able to make U-turns relatively easy at the end of the proposed cul-de-sac, a 75 foot radius is provided at the cul-de-sac. Over 700 feet of queuing/stacking distance is provided between Louise Avenue and the first warehouse/docking ramp entrance and another 800 feet is provided between the first and second warehouse/docking ramp entrance. Overall more than 2,000 feet of queuing is available on-site before the public street is affected from parking, waiting or circling trucks."

Based on the TJKM evaluation, no access or on-site deficiencies are anticipated.

Intersections Included in Analysis

The proposed project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess the potential traffic related impacts associated with the project, the following intersections, illustrated in **Figure 1**, were selected by the City of Manteca for evaluation:

1. I-5 SB Ramps / Lathrop Road
2. I-5 NB Ramps / Lathrop Road
3. Airport Way / Lathrop Road
4. I-5 SB Ramps / Louise Avenue
5. I-5 NB Ramps / Louise Avenue
6. McKinley Avenue / Louise Avenue
7. Project Driveway / Louise Avenue
8. Airport Way / Louise Avenue
9. Airport Way / Yosemite Avenue
10. Yosemite Avenue / SR-120 EB Ramps
11. Yosemite Avenue / SR-120 WB Ramps
12. Airport Way / SR-120 EB Ramps
13. Airport Way / SR-120 WB Ramps

EXISTING CONDITIONS

Existing Roadway Network

Below is a description of the principal roadway facilities bordering the project.

Interstate 5 (I-5)

I-5 is a major north-south 4-lane freeway that carries between 68,000 and 101,000 vehicles per day through the study area according to the most recent Caltrans traffic volumes (*2002 Traffic Volumes on California State Highways*, Caltrans). Freeway ramps entering and exiting I-5 intersect with Lathrop Road at two unsignalized intersections and with Louise Avenue at two signalized intersections.

State Route 120 (SR-120)

SR-120 is a major east-west multilane highway that carries between 58;000 and 70,000 vehicles per day according to the most recent Caltrans traffic volumes (*2002 Traffic Volumes on California State Highways*, Caltrans). Freeway ramps entering and exiting SR-120 intersect with Yosemite Avenue at two unsignalized intersections.

Louise Avenue

Louise Avenue is an east-west roadway with one lane in each direction near the project site. Louise Avenue widens to two lanes in each direction west of Howland Road. Louise Avenue provides access to I-5, McKinley Avenue, and Airport Way in the study

area. In the existing condition, all intersections with the exception of Airport Way and Louise Avenue are signalized.

Airport Way

Airport Way is a north-south two lane roadway east of the project. South of the project, intersection along Airport Way provide access to the majority of the existing residential land use in the study area. It provides access to Lathrop Road, Louise Avenue, Yosemite Avenue, and SR-120 in the study area.

Lathrop Road

Lathrop Road is an east-west two lane roadway north of the study area. The roadway currently provides access to I-5, McKinley Avenue, and Airport Way in the study area. Lathrop Road also provides a connection through Manteca to SR-99.

Yosemite Avenue

Yosemite Avenue is an east-west roadway south of the study area. Yosemite Avenue provides access to SR-120, McKinley Avenue and Airport Way in the study area. The roadway widens from one lane in each direction to two lanes in each direction just east of McKinley Avenue.

McKinley Avenue

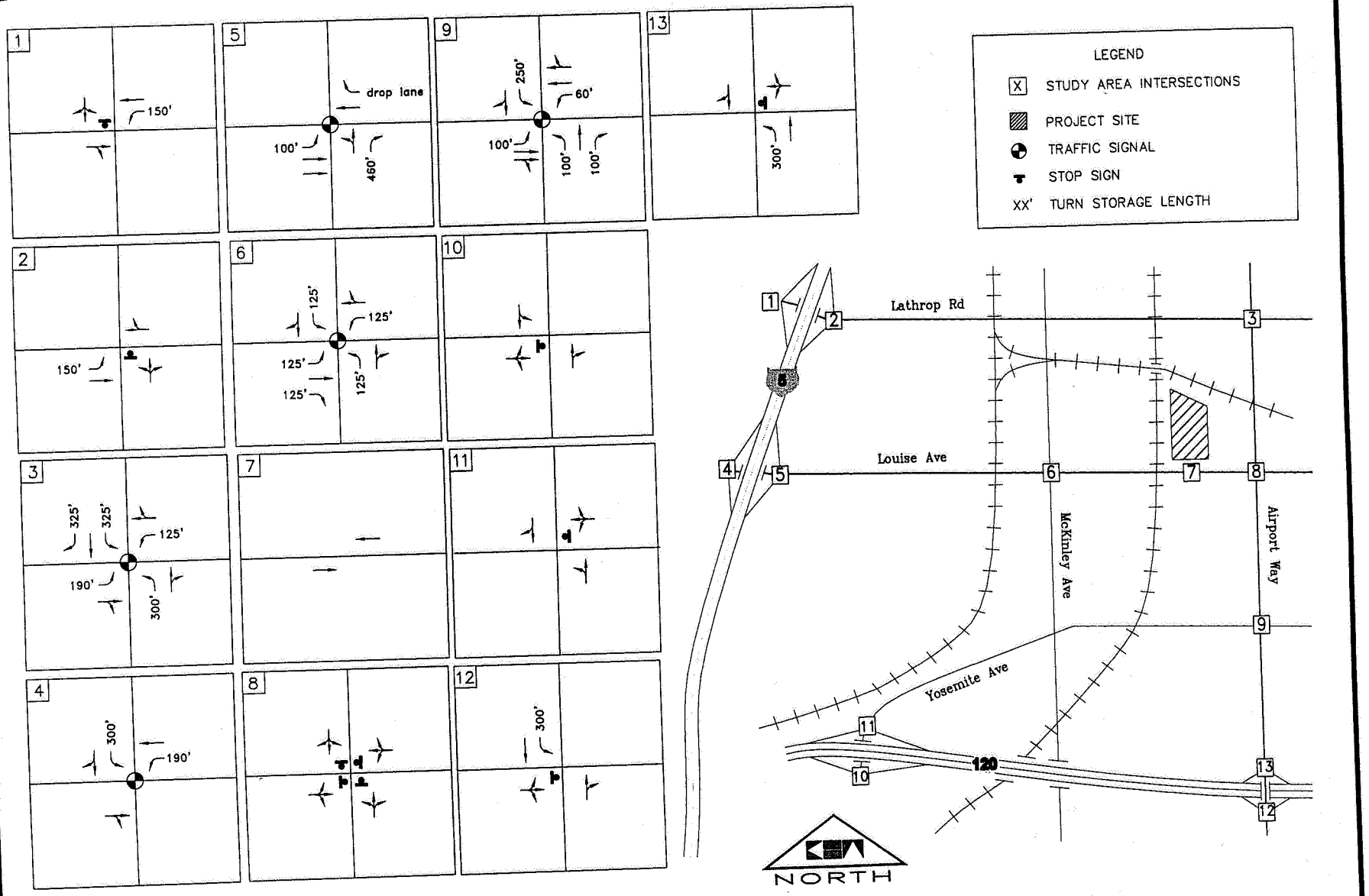
McKinley Avenue is a two lane north-south roadway west of the project site. It provides access to Lathrop Road, Louise Avenue, and Yosemite Avenue. The only study intersection on McKinley Avenue is signalized.

Existing Lane Configurations and Traffic Control

Existing intersection lane configurations and traffic control are illustrated in **Figure 2**. There are five existing traffic signals in the study area. The remaining study area intersections are stop-controlled intersections. It should be noted that numbers shown in **Figure 2** represent existing turn bay lengths for right and left turn lanes.

Existing Traffic Turning Movement Volumes

Weekday intersection turning movement volumes were collected for the thirteen existing intersections in November 2003. Existing volumes are shown in **Figure 3**. Volumes were collected during the AM and PM peak periods of the day between the hours of 7:00-9:00 AM and 4:00-6:00 PM. Traffic volume data sheets are included in the **Appendix**.

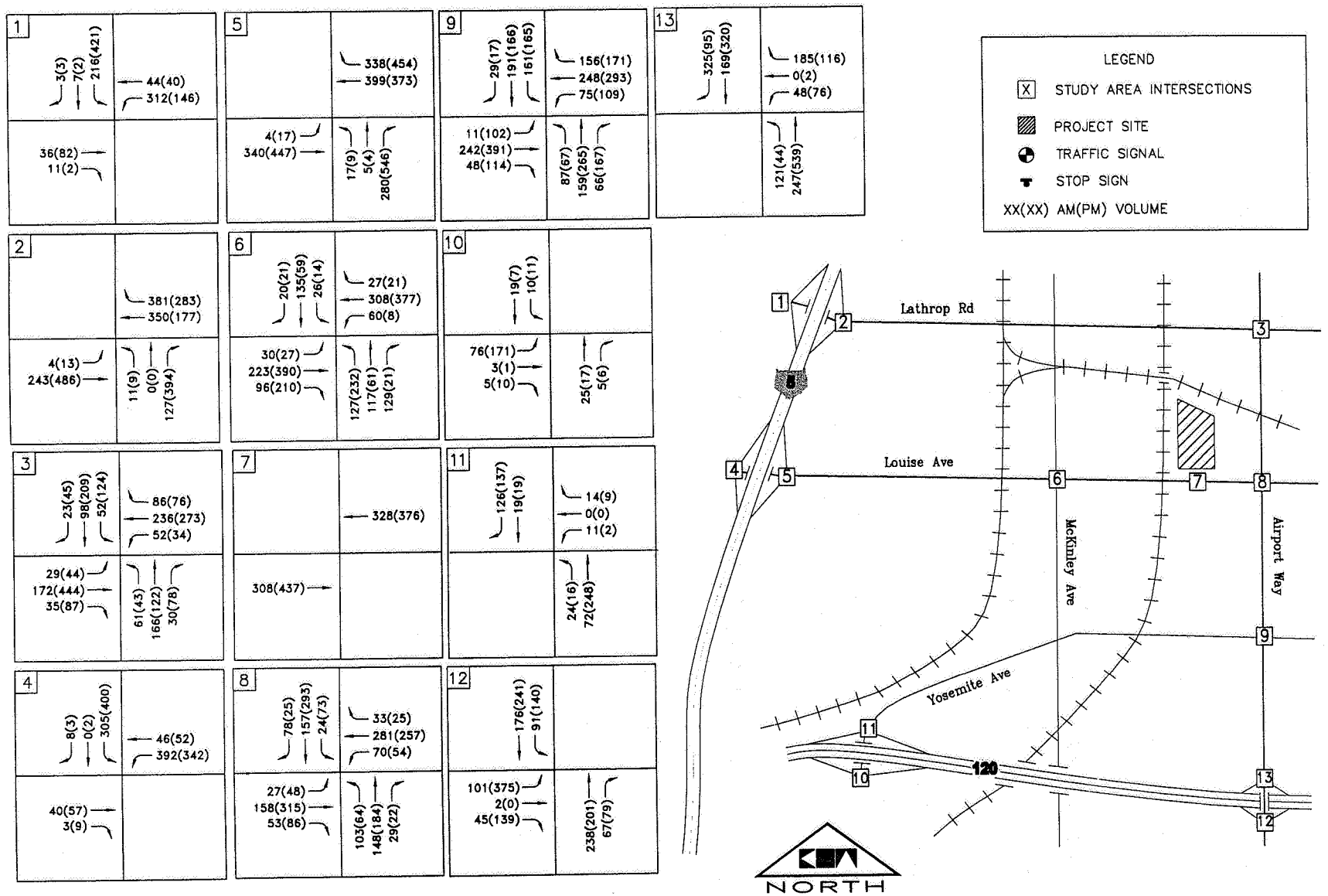


Assieh Industrial Park – Manteca, CA

EXISTING LANE GEOMETRY AND TRAFFIC CONTROL

FIGURE 2

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

FIGURE 3

EXISTING PEAK HOUR TURNING MOVEMENTS

Kimley-Horn and Associates, Inc.

As part of the traffic counts, 24-hour mechanical tube counts were collected to determine truck volumes on Louise Avenue, west of the Airport Way intersection. Truck volume data was analyzed to calculate the percentage of total traffic accounted for by trucks in the study area. Results indicate that trucks currently account for 4 percent of the total traffic in the AM peak hour and 2 percent in the PM peak hour.

Existing Pedestrian and Bicycle Facilities

There are currently no continuous pedestrian or bicycle facilities along the site frontage or near the project site along Louise Avenue or Airport Way. Pedestrians and bicyclists currently use the typically narrow shoulders of the road.

Existing Transit Service

San Joaquin Regional Transit District (SJRTD) is the transit service provider for the Lathrop/Manteca area. Currently no SJRTD service operates on Louise Avenue or Airport Way adjacent to, or within reasonable (1/4 mile) walking distance to, the site.

PROJECT TRIP GENERATION AND DISTRIBUTION

Project Trip Generation

AM, PM and daily vehicular trips for the proposed project were developed based on trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition*. This manual is a standard reference used by jurisdictions throughout the country and is based on actual trip generation studies at numerous locations in areas of various populations.

The trip generation rate for Warehousing (ITE Land Use Code 150) was based on square feet as the independent variable. Trip generation calculations are included in the **Appendix**.

Often with new development a certain amount of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not represented as new vehicle trips but are considered to be pass-by trips. Due to the nature of the warehouse land use, no pass-by trips are expected and therefore no pass-by trip reduction was applied to the project trip generation. **Table 2** summarizes the results of the trip generation analysis for the project.

As seen in **Table 2**, the industrial development is expected to generate 632 new trips in the AM and 716 new trips in the PM peak hour. Because the project is a warehouse facility it is expected to include a significant volume of truck trips. However, no information in ITE *Trip Generation* was available regarding typical truck percentages for Land Use Code 150. Therefore, it was concluded that the project was also similar to

High-Cube Warehouse (ITE Land Use Code 152) which identified truck trips as accounting for 9 to 27 percent of the peak hour traffic at the sites surveyed. Based on the ITE Data, this study assumed that roughly 18 percent of the total trips from the Assieh project would be trucks.

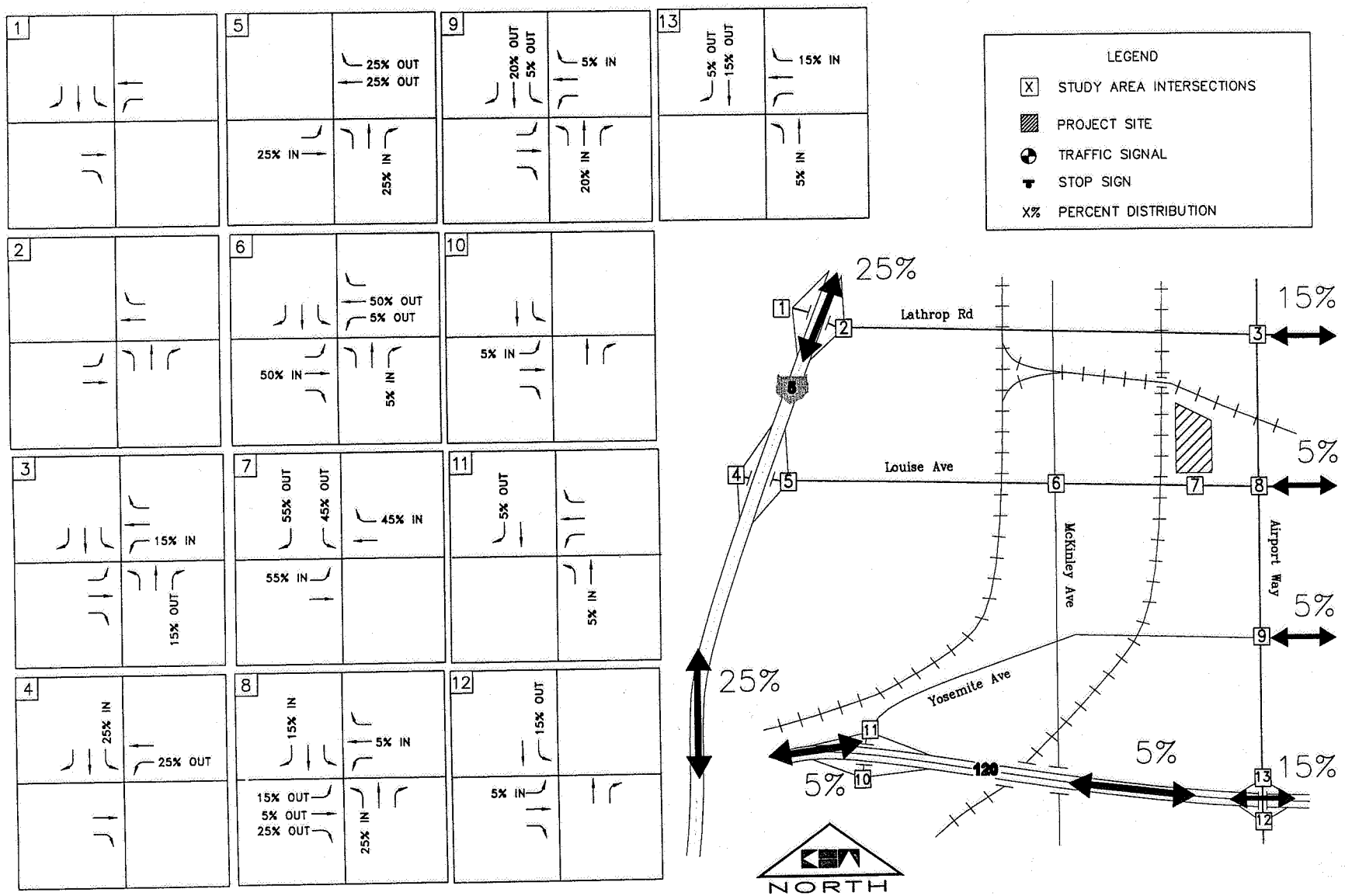
Table 2 – Site Trip Generation

LAND USE	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Warehousing	6,967	518	144	632	172	544	716

Existing truck percentages near the project site are up to 4 percent in the AM/PM. When Assieh project truck volumes are applied to the existing background traffic, truck percentages at study intersections are expected to increase from the existing levels to as much as 8 percent in the AM and PM peak hours. Although the percentage of truck traffic diminishes away from the project site, it was conservatively assumed that all study intersections would have 8 percent trucks.

Project Trip Distribution and Assignment

In preparation of the traffic distribution, Kimley-Horn reviewed the project's industrial use in proximity to the surrounding population centers. In addition, existing traffic counts were also reviewed to determine general proportion of traffic volumes at study intersections. Because of the nature of the development, employees, customers, and trucks serving the Assieh project are expected to travel from nearby locations in Manteca, Lathrop, Tracy, Stockton, and beyond. Many trips are expected to travel to/from Interstate 5 and State Route 120. These trips consist of a combination of light and heavy vehicles, many of which will be employees traveling to and from other central valley locations. Based on the geographic location of the project in relation to existing traffic patterns (as noted in turning movement counts), the likely employee and customer base for the site, major connections to principal arterials and freeways, and potential access limitations, a project traffic distribution was prepared as shown in **Figure 4**. As mentioned, the distribution was founded on several considerations but ultimately was determined based upon the professional judgment of Kimley-Horn. As shown in the distribution, nearly all the project traffic is conservatively assumed to reach freeways extending outside of the city, with as much as 50% of project traffic expected to use I-5 and a large percentage of other project traffic directed to SR-120. In reality, the actual distribution is expected to be lower outside of the city due to the fact that some project traffic will be dispersed inside Manteca's and Lathrop's city limits. **Figure 5** shows the project's trip assignment assuming a full movement intersection is created by aligning the Villa Ticino West access with the driveway for the Assieh project. It should be noted that the volumes shown in **Figure 5** are only related to the Assieh project. Movements not showing volumes are not assumed to have project traffic.

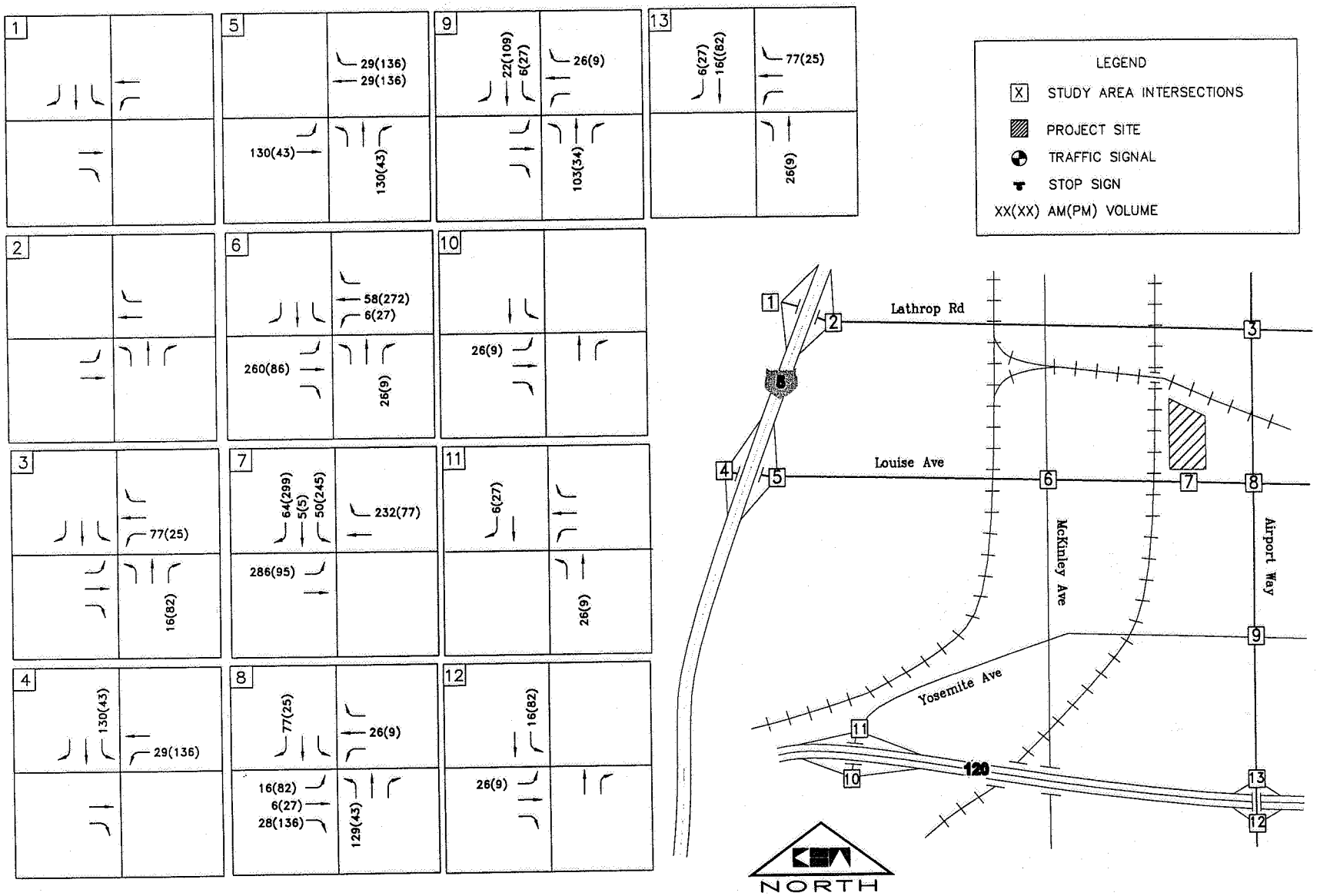


Assieh Industrial Park – Manteca, CA

PROJECT TRIP DISTRIBUTION

FIGURE 4

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

PROJECT GENERATED TRAFFIC VOLUMES

FIGURE 5

Kimley-Horn and Associates, Inc.

NEAR-TERM CONDITIONS

Near-Term Lane Configurations and Traffic Control

The Villa Ticino West roadway does not currently align with the proposed Assieh project driveway. The close offset of the two intersections will make it difficult for vehicles, especially trucks, to enter and exit the Assieh project driveway. To mitigate this poor operation, the Villa Ticino West roadway and the project driveway should be relocated to align with each other.

Some roadway improvements and construction are planned for the study area in the near-term associated with development in the area. **Figure 6** illustrates the intersection geometry and traffic control assumed in the near-term analysis to be in place at the time that the Assieh project is developed. It should be noted that numbers shown in **Figure 6** represent assumed turn bay lengths for right and left turn lanes. The following roadway and traffic control improvements are expected in the study area between the Existing condition and the Near-Term conditions. Roadway improvements are development driven and assumed to be occurring concurrently with planned developments in the Near-Term scenario.

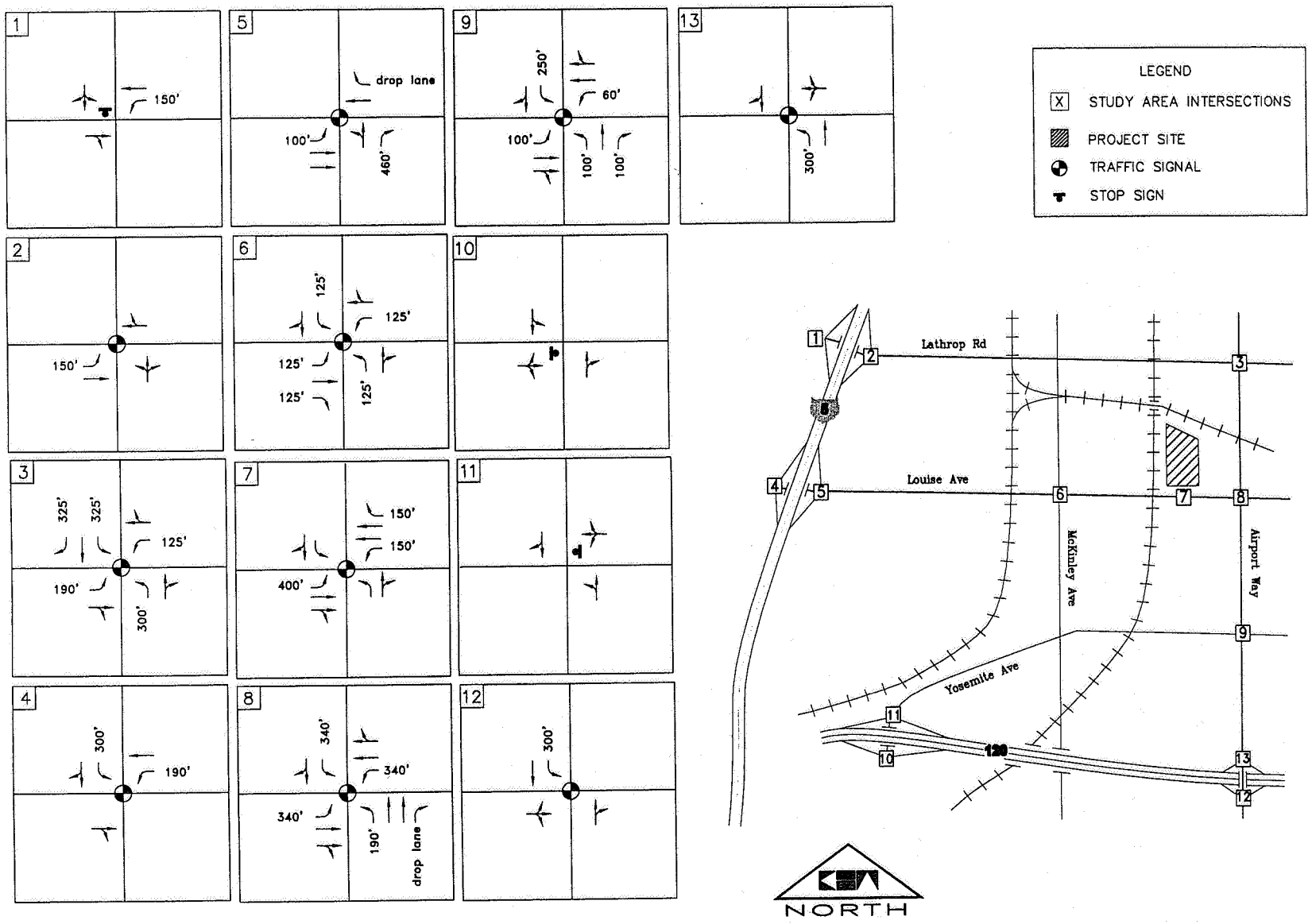
Roadway improvements:

- Construction of Louise Avenue to a four-lane arterial east of Airport Way, as per current design plans provided by the City. It was assumed the roadway improvements along the site frontage of the Assieh and Villa Ticino West projects will widen the cross section of Louise Avenue similar to the improvements on Louise Avenue east of Airport Way.
- Construction of Airport Way to a six-lane arterial from the Louise Avenue intersection to about 750 feet south.

Traffic Control Improvements: Based on preliminary analysis of the study intersections and a preliminary signal warrant analysis that included only Peak Hour Volume Warrant #11, the following intersections were assumed as being signalized between the existing and near-term conditions:

- Lathrop Road / I-5 NB Off-ramp. (Warrant #11 met under Existing conditions)
- Louise Avenue / Airport Way. (Warrant #11 met under Existing conditions)
- Airport Way / SR-120 EB Off-ramp. (Warrant #11 met under Existing conditions)
- Airport Way / SR-120 WB Off-ramp. (Warrant #11 met under Existing + Approved conditions)

Even though Peak Hour Volume Warrant is satisfied, it is recommended that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.



Assieh Industrial Park – Manteca, CA

FIGURE 6

NEAR-TERM LANE GEOMETRY AND TRAFFIC CONTROL

Kimley-Horn and Associates, Inc.

Near-Term Approved Development Projects

The Villa Ticino West residential subdivision will be located on the south side of Louise Avenue and the west side of Airport Way and will ultimately be developed before or roughly the same time as this project. Villa Ticino West will include single family dwellings, multi-family dwellings, fire station, parks, and an area of commercial development. Villa Ticino West traffic is considered in the near-term analysis of this EIR.

Near-Term Approved Development Vehicle Trips

An estimate of trips generated by the residential and commercial uses within Villa Ticino West were calculated through the use of trip generation rates contained in the Institute of Transportation Engineer's publication *Trip Generation, 6th Edition.*

As noted previously, trip generation data was not available for the Villa Ticino West project at the time this report was prepared. Therefore, this project estimated the approximate number of vehicle trips likely to be generated by the project. The trip generation rates for the single-family detached housing and multi-family housing were based on dwelling units (DU) as the independent variable.

Trips related to the retail/commercial uses were based on an assumed 0.42 floor area ratio for the 18.6 acres identified for the retail/commercial uses, per the direction of City staff. This resulted in approximately 333,000 square feet of development. The retail/commercial area was further assumed to include the following specific uses:

▪ Specialty Retail	190,000 square feet
▪ Supermarket	80,000 square feet
▪ Gasoline Station (w/ 12 Fueling Positions)	31,000 square feet
▪ High-Quality Sit-Down Restaurant	20,000 square feet
▪ Fast Food Restaurant w/ Drive Through	12,000 square feet
	333,000 square feet

Often with a new development a certain amount of trips to the site are vehicle trips that are already on the road and will choose to stop as they pass by the site. These vehicle trips are not new vehicle trips but are considered to be pass-by trips. Due to the nature of the commercial land use, pass-by trips are expected and therefore a pass-by trip reduction was applied to the project trip generation. The pass-by trip reduction was calculated based on the ITE *Trip Generation Handbook.* Trip generation calculations are included in the **Appendix**.

In addition, because of the close proximity of housing and retail/commercial in the Villa Ticino West project, many trips will be generated and attracted entirely within the development without using the major street network for circulation. Internal capture rates and reductions were calculated based on the methodology contained in the ITE

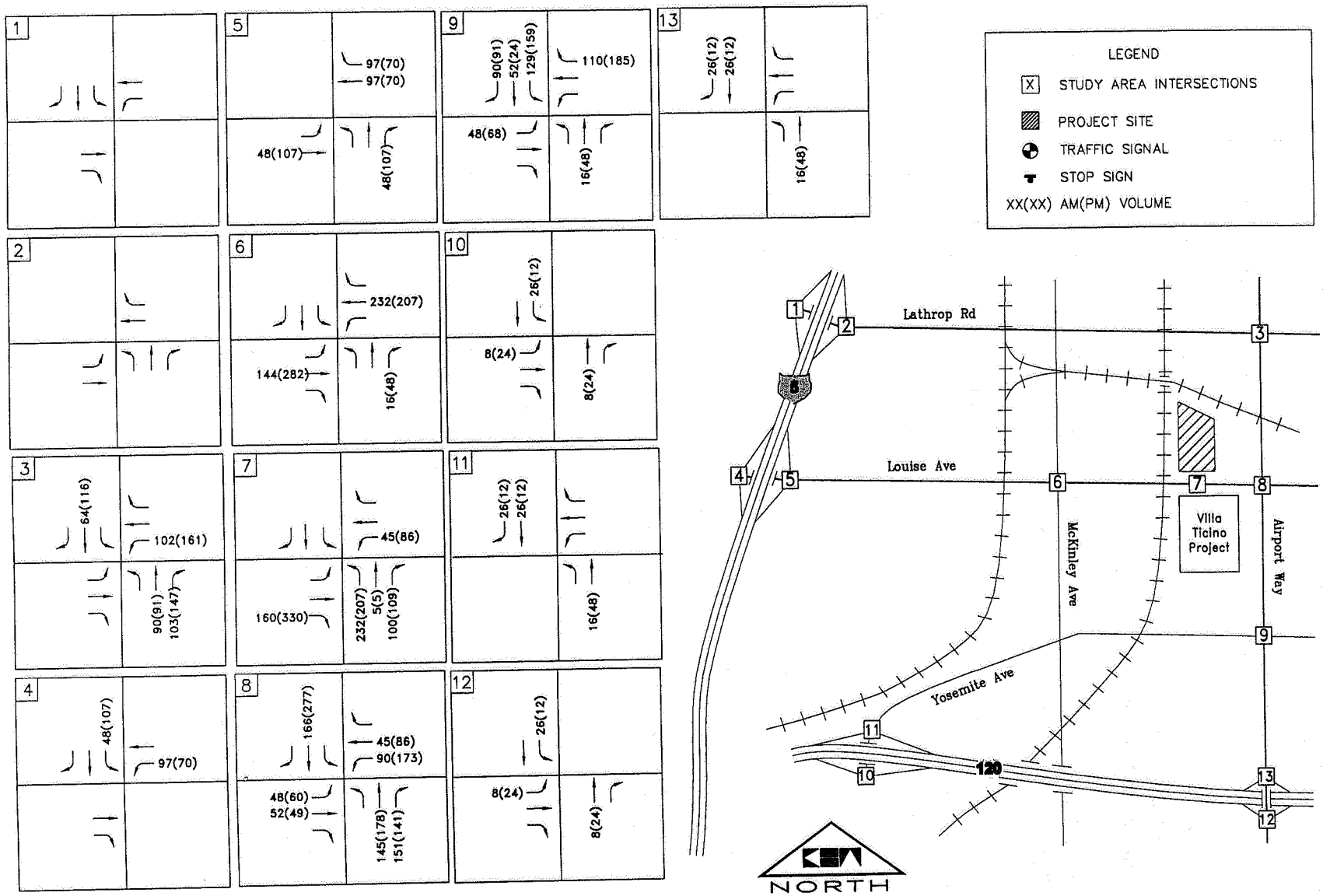
Trip Generation Handbook. Summary results of the internal capture calculations showed that approximately 22 percent of single family trips, 38 percent of multi-family trips, and 14 percent of retail/commercial trips would be contained within the Villa Ticino West development. The remaining trips are considered to be external trips and were ultimately assigned to the street network. It should be noted that internal capture information was only available for the PM peak hour.

Table 3 summarizes the results of the trip generation analysis as well as the internal capture and pass-by reductions for the Villa Ticino West development site.

Table 3 – Villa Ticino West Development Trip Generation

LAND USE	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Residential	8,732	161	521	682	583	321	904
Commercial	27,254	748	628	1,376	1,110	1,097	2,207
Subtotal	29,005	909	1,149	2,058	1,693	1,418	3,111
Residential Internal Capture Reduction	N/A	0	0	0	124	94	218
Commercial Internal Capture Reduction	N/A	0	0	0	94	124	218
Commercial Pass-by Reduction	N/A	273	245	518	332	300	632
Net New Vehicle Trips	N/A	636	904	1,540	1,143	900	2,043

As seen in **Table 3** the Villa Ticino West development is expected to generate 1,540 new trips in the AM peak hour and 2,043 new trips during the PM peak hour. **Figure 7** illustrates the Villa Ticino West development turning movement volumes at the study intersections and the approximate location of the housing/commercial project in relation to the Assieh project. It should be noted that the volumes shown in **Figure 7** are only related to the Villa Ticino project. Movements not showing volumes are not assumed to have Villa Ticino project traffic.



Assieh Industrial Park – Manteca, CA

FIGURE 7

APPROVED DEVELOPMENT GENERATED TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.

Near-Term Existing Plus Approved Development

Existing traffic volumes were combined with vehicle trips expected to be generated by the nearby Villa Ticino West development. **Figure 8** illustrates the existing plus approved development turning movement volumes at the study intersections.

Near-Term Existing Plus Approved Development Plus Project

Existing traffic volumes and vehicle trips from the near-term Villa Ticino West development were combined with trips expected to be generated by the Assieh site. **Figure 9** illustrates the existing plus approved development plus project turning movement volumes at the study intersections.

LONG-TERM CONDITIONS

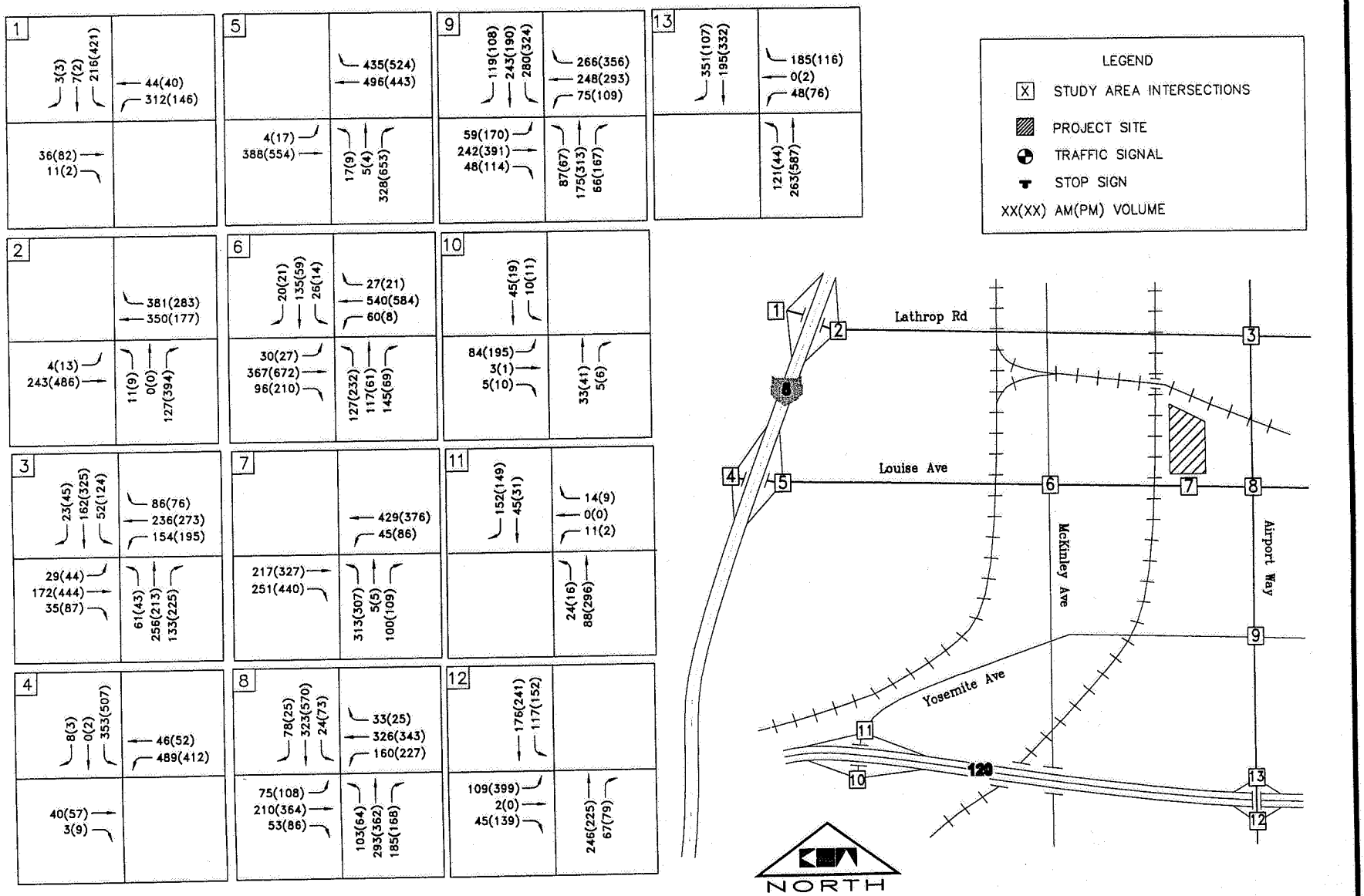
Long-Term Lane Configurations and Traffic Control

Roadway improvements are expected and planned by the City of Manteca for the study area before the year 2025. **Figure 10** illustrates the intersection geometry and traffic control assumed in the long-term analysis. The following roadway and traffic control improvements are in addition to the noted near-term improvements and are expected in the study area between the Near-Term conditions and the Long-Term conditions. Roadway improvements are development driven and assumed to be occurring concurrently with planned developments in the Near-Term and Long-Term scenarios.

Roadway improvements:

- Construction of the remaining portion of Louise Avenue to a four-lane arterial in the study area.
- Construction of the remaining portion of Airport Way to a six-lane arterial between the intersections of Lathrop Road and Yosemite Avenue, changing to a 4-lane arterial between the intersections of Yosemite Avenue and the SR-120 EB Ramps.
- Construction of Lathrop Road to a four-lane arterial in the study area.
- Construction of Yosemite Avenue to a four-lane arterial in the study area. The portion of Yosemite Avenue in the City of Manteca is currently a four-lane cross-section.

Traffic Control Improvements: As noted earlier, based on analysis of the study intersections and a preliminary signal warrant analysis that included only Peak Hour Volume Warrant #11, the following intersections were assumed as being signalized between the near-term and long-term conditions:

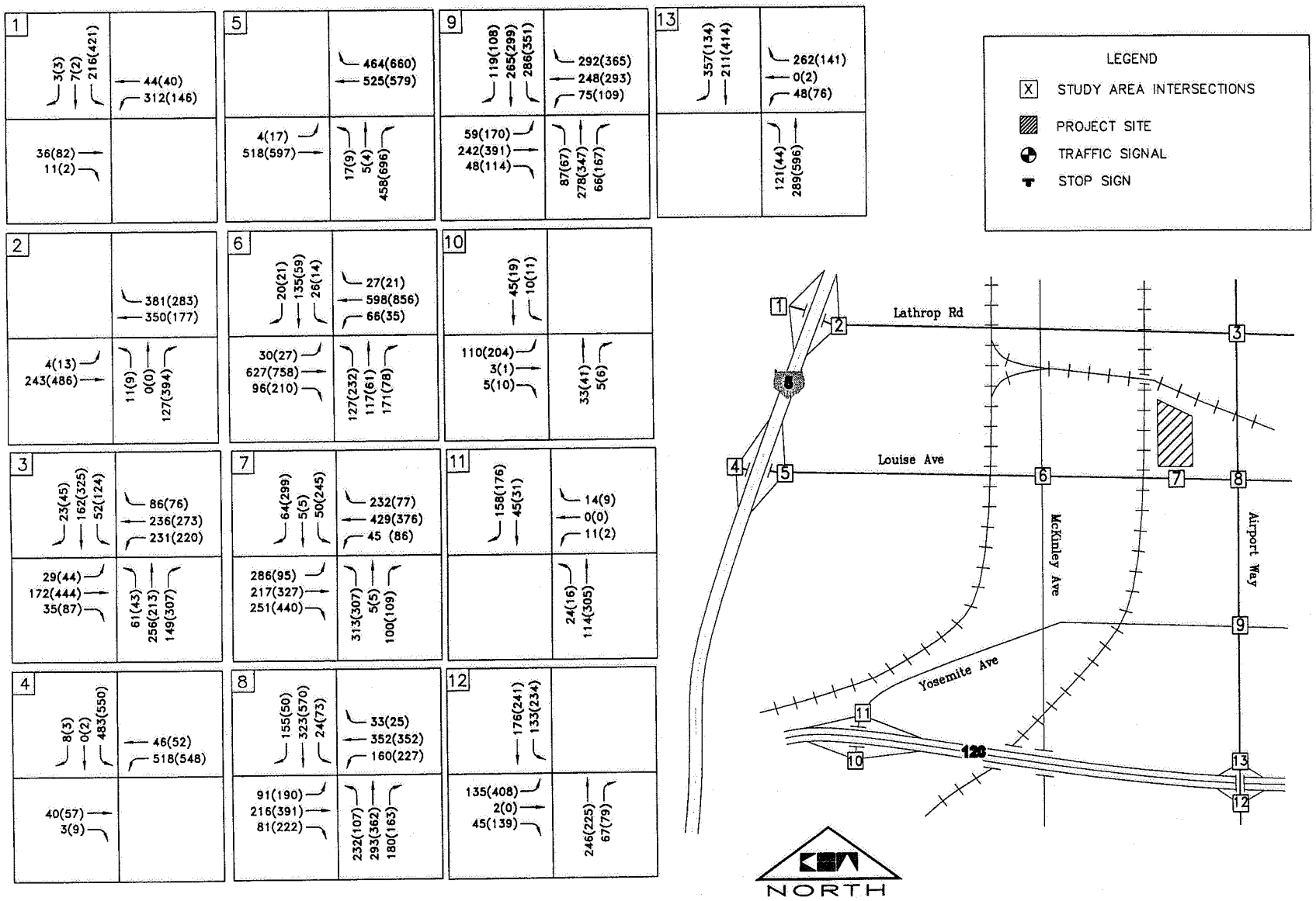


Assieh Industrial Park – Manteca, CA

FIGURE 8

EXISTING + APPROVED DEVELOPMENT TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.

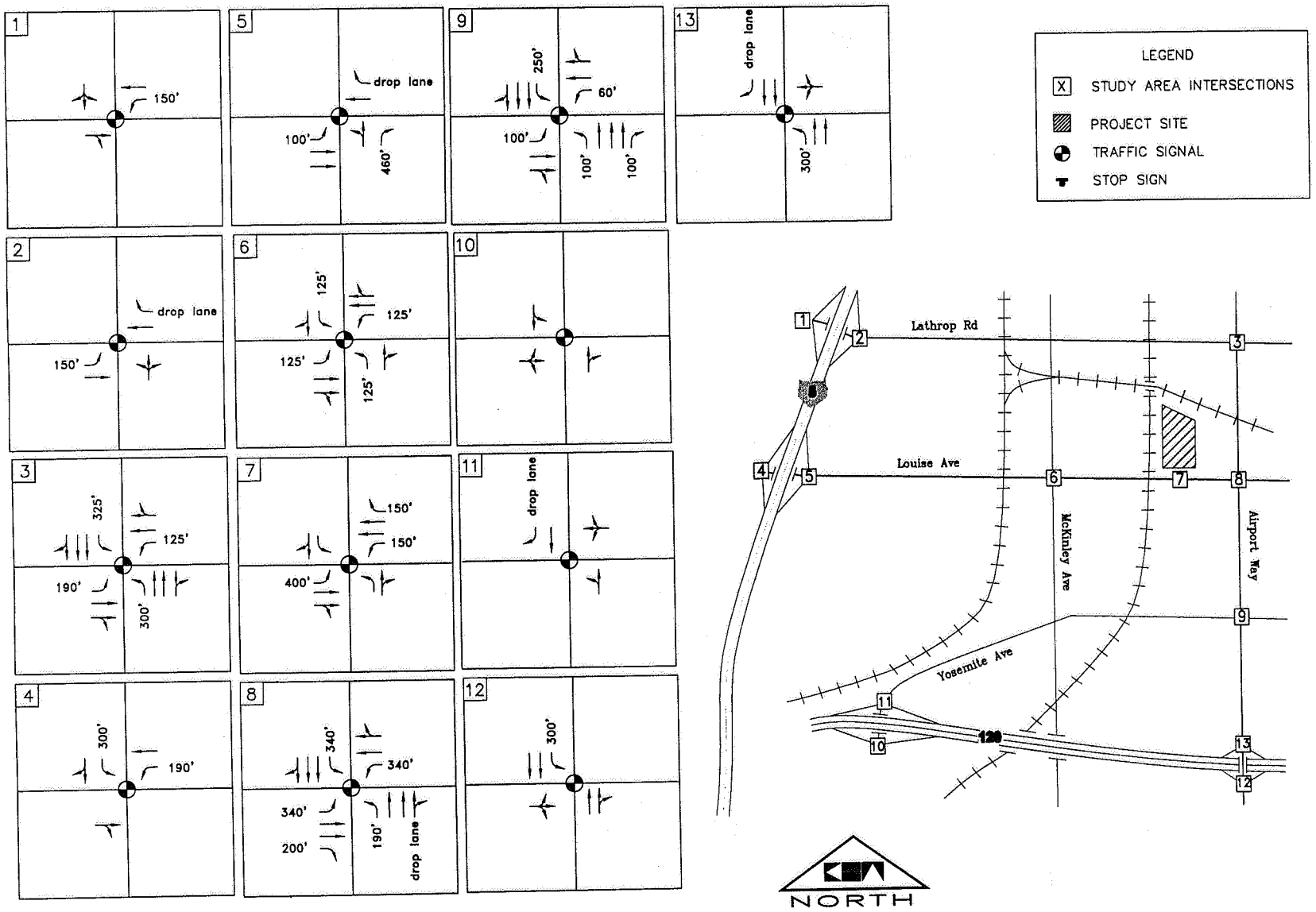


Assieh Industrial Park – Manteca, CA

FIGURE 9

EXISTING + APPROVED DEVELOPMENT + PROJECT TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

FIGURE 10

LONG-TERM LANE GEOMETRY AND TRAFFIC CONTROL

Kimley-Horn and Associates, Inc.

- Lathrop Road/I-5 SB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 WB ramps. (Warrant #11 met under cumulative conditions)
- Yosemite Avenue / SR-120 EB ramps. (Warrant #11 met under cumulative conditions)

Even though Peak Hour Volume Warrant is satisfied in the long term, it is recommended that traffic be monitored and that a more detailed signal warrant study be completed before a signal is installed. The more detailed evaluation should consider factors including peak hour volumes, minimum vehicle volumes, interruption of continuous traffic, pedestrian traffic, and accident histories.

Long-Term Cumulative (No Project)

Forecasts for year 2025 were provided by the San Joaquin Council of Governments (SJCOG) from their 2025 Regional Transportation Program (RTP) model. SJCOG provided plots of the 2025 RTP model illustrating the bi-directional daily traffic volumes on each segment of the roadways in the study area. After review of the SJCOG forecasts it was determined that the SJCOG model underestimated traffic volumes at some of the freeway interchanges where the greatest amount of future traffic growth is anticipated in the future. The location of greatest deficiency was noted to occur at the I-5/Louise Avenue intersections.

To reconcile the forecast, Kimley-Horn obtained the same traffic projections that were used for the Villa Ticino West study. Villa Ticino West used the Manteca General Plan Traffic Model which is an enhanced version of the SJCOG model. In comparing the two models' 2025 forecasts, it was noted that near the Assieh site, the forecasts were very similar, but varied farther away from the project site. As a result, it was ultimately determined to use the same forecasts and cumulative turning movement volumes as in the Villa Ticino West project. To the extent that data was available, cumulative volumes associated with the Villa Ticino West project were used directly from the report. In some instances the report did not include all the same intersections as in the Assieh study; therefore, Kimley-Horn developed turning movement volumes at the remaining (missing) study intersections near the freeways.

Forecast model link volumes were used to develop turning movement volumes at each missing study intersection. The following steps were taken to develop turning movement volumes from the link volumes provided.

1. **Development of peak hour approach volumes**. The daily volumes from the Manteca General Plan Traffic Model were used to calculate the expected AM and PM peak hour volumes on the approaches to the missing intersections. Existing count data was used to determine the percent of daily traffic that was accounted for by AM and PM peak hour traffic. It was determined that the AM and PM peak hours accounted for 6 percent and 7 percent of the total daily traffic, respectively.

These percentages were applied to the forecast daily traffic volumes to calculate the expected AM and PM peak hour volume on the approaches to each intersection.

2. **Development of peak hour turning movement volumes**. The peak hour approach volumes calculated were used to develop expected AM and PM peak hour turning movement volumes at each intersection. An iterative process was used to convert the approach volume to turning movement volume. The iterative process included using the use of variables such as the percent peak hour traffic of daily traffic, the expected directional distribution of traffic, and the entering and exiting volumes of each intersection. This process produced AM and PM peak hour turning movement volumes at each intersection.

Figure 11 illustrates the cumulative turning movement volumes at the study intersections.

Long-Term Cumulative Plus Project

Trips associated with the Assieh Industrial Park were added to the cumulative forecast. **Figure 12** illustrates the cumulative plus project traffic volumes at the study intersections.

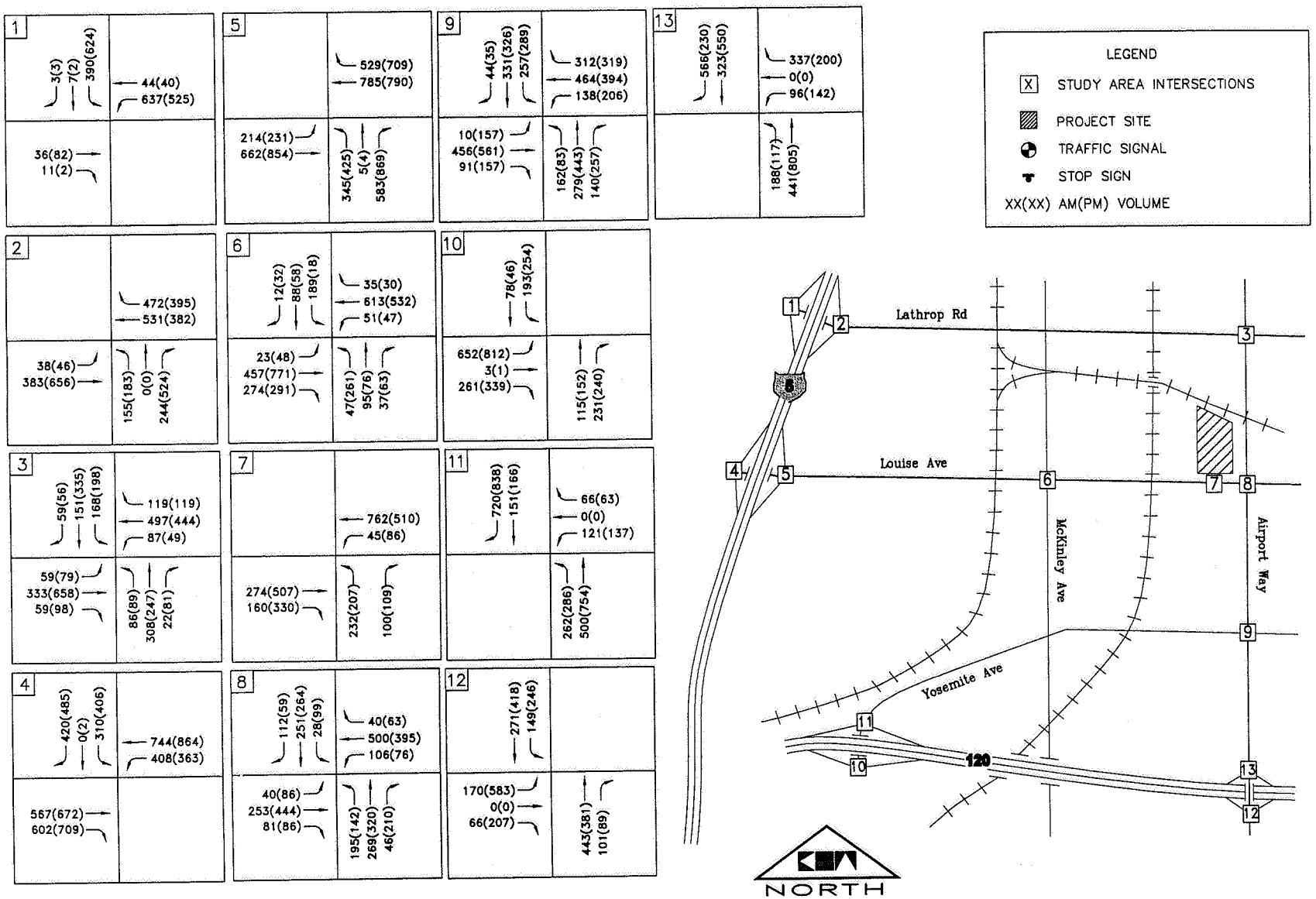
NEAR-TERM LOS CONDITIONS AND IMPACTS

Traffic operations were evaluated under the following near-term development conditions:

- Existing traffic conditions
- Existing plus traffic from other approved projects
- Total traffic conditions (existing plus traffic from other nearby planned projects plus project traffic)

Results of the analysis are presented in **Table 4**. The table separates the results by traffic control, i.e. signalized, two-way stop controlled, or all-way stop controlled. It should be noted that the *Highway Capacity Manual* (HCM) analysis method does not generate an overall level of service for a two-way stop controlled intersection, so results for specific travel movements is summarized. Detailed calculations for the near-term analyses are included in the **Appendix**.

As part of the evaluation of results, consideration was given to adding additional left turn lanes when turn volumes exceeded more than 300 vehicles per hour. Right turn lanes were considered when right turn volumes exceeded 200 vehicles per hour. Justification for additional turn lanes was also weighed heavily against results of the operational analyses.

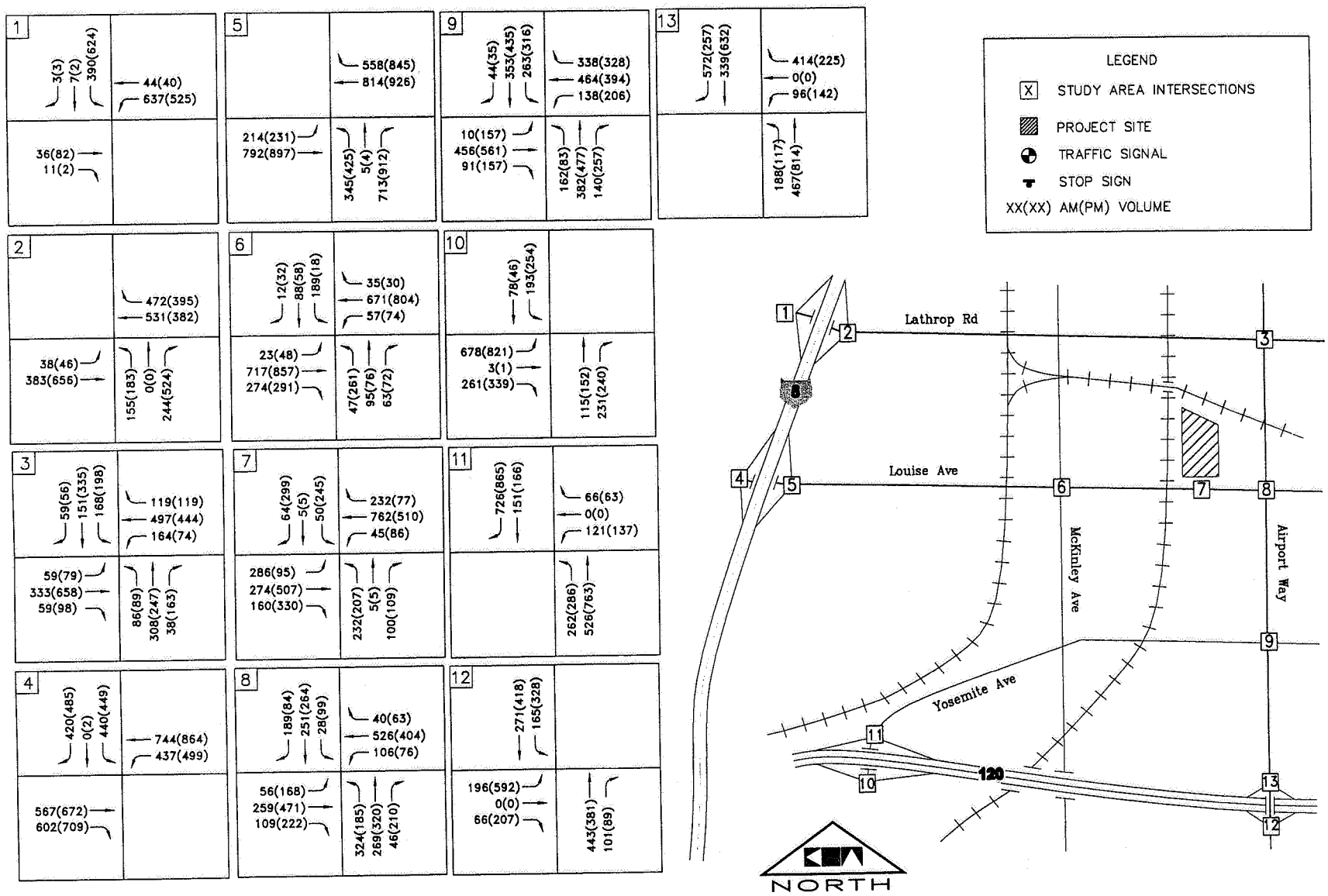


Assieh Industrial Park – Manteca, CA

FIGURE 11

LONG-TERM CUMULATIVE 2025 TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.



Assieh Industrial Park – Manteca, CA

FIGURE 12

LONG-TERM CUMULATIVE + PROJECT TRAFFIC VOLUMES

Kimley-Horn and Associates, Inc.

Table 4 – Existing and Near-Term Level of Service Summary Table

	Time Frame	Current		Near-Term			
	Traffic Source	Existing		Existing + Approved Development		Existing + Approved Development + Project	
	Peak Period	AM	PM	AM	PM	AM	PM
Signalized Intersections							
2	I-5 NB Ramps / Lathrop Road	-	-	A	A	A	A
3	Airport Way / Lathrop Road	B	C	C	D	C	E
4	I-5 SB Ramps / Louise Avenue	B	C	C	C	D	D
5	I-5 NB Ramps / Louise Avenue	A	A	A	C	B	D
6	McKinley Avenue / Louise Avenue	C	B	D	C	E	D
7	Project Driveway / Louise Avenue	-	-	-	-	C	C
8	Airport Way / Louise Avenue	-	-	C	C	C	D
9	Airport Way / Yosemite Avenue	B	C	C	C	C	C
12	Airport Way / SR-120 EB Ramps	-	-	B	D	B	C
13	Airport Way / SR-120 WB Ramps	-	-	A	A	B	A
Two-Way Stop Controlled Intersections							
1	I-5 SB Ramps / Lathrop Road						
	Southbound	F	F	F	F	F	F
	Westbound Left	A	A	A	A	A	A
2	I-5 NB Ramps / Lathrop Road						
	Northbound	B	E	-	-	-	-
	Eastbound Left	A	A	-	-	-	-
7	Project Driveway / Louise Avenue						
	Northbound	-	-	F	F	-	-
	Westbound Left	-	-	A	B	-	-
10	Yosemite Avenue / SR-120 EB Ramps						
	Eastbound	A	B	A	B	B	B
	Southbound Through-Shared-Left	A	A	A	A	A	A
11	Yosemite Avenue / SR-120 WB Ramps						
	Westbound	A	A	A	B	B	B
	Northbound Through-Shared-Left	A	A	A	A	A	A
12	Airport Way / SR-120 EB Ramps						
	Eastbound	C	F	-	-	-	-
	Southbound Left	A	A	-	-	-	-
13	Airport Way / SR-120 WB Ramps						
	Westbound	C	E	-	-	-	-
	Northbound Left	A	A	-	-	-	-
All-Way Stop Controlled Intersections							
8	Airport Way / Louise Avenue	E	F	-	-	-	-

Existing Traffic Conditions

As shown in **Table 4**, each of the existing study area signalized intersections operate at Level of Service (LOS) C or better during the AM and PM peak periods; however, some unsignalized intersections operate below an acceptable threshold. These are existing deficiencies.

The following movements at the two-way stop-controlled study intersections currently operate at LOS E or F:

- Lathrop Road/I-5 SB Ramps (Southbound approach). The delay is caused by the lack of gaps in the traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. Due to the nature of two-way stop controlled intersections, no mitigation is available except future signalization.
- Lathrop Road/I-5 NB Ramps (Northbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Lathrop Road, not allowing the traffic exiting the ramp to enter. If the northbound approach is widened to permit a full left and right turn lane for the off-ramp, the operation would be improved to LOS D under the existing condition.
- Airport Way/SR-120 EB Ramps (Eastbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. Due to the nature of two-way stop controlled intersection, no mitigation is available except future signalization.
- Airport Way/SR-120 WB Ramps (Westbound approach). The delay is caused by the lack of gaps in the PM traffic stream on Airport Way, not allowing the exiting vehicles to enter. If the approach is widened to permit a full left and right turn lanes for the westbound off-ramp, the operation would be improved to LOS C under the existing condition.

Each of these poor operating conditions occurs on the off-ramp leg to the listed intersections. The queue for each of the identified approaches was analyzed to determine if any of the queues encroached on the through travel lanes of either I-5 or SR-120. It was determined that none of the anticipated queues at these approaches will encroach on the travel lanes of the roadway they are exiting.

It should be noted that the intersections at Airport Way and SR-120 are part of a more detailed study being completed as part of a separate project. It is possible that additional improvements may be identified in the future at this location.

In addition, the intersection of Airport Way and Louise Avenue is an all-way stop-controlled intersection and will operate at LOS E and LOS F in the AM and PM peak hours, respectively. The poor level of service at this intersection is caused by a lack of capacity at the all-way stop-controlled intersection. If the intersection were to be widened to add left turn lanes, the capacity would be increased to LOS D under the existing condition.

Near-Term Traffic Conditions without the Project

As shown in **Table 4**, near-term operating conditions with traffic from other planned developments (but without traffic from the Assieh project) are at LOS D or better at the signalized intersections. It should be noted that the intersections of Lathrop Road/I-5 NB Ramps, Airport Way/SR-120 EB Ramps, and Airport Way/SR-120 WB Ramps were assumed to be signalized in the near-term and therefore their operation level will improve over their existing condition assuming a signal is installed.

The southbound approach of the unsignalized intersection of Lathrop Road and I-5 SB Ramps continues to operate at LOS F in the near-term condition. This is a condition independent of the Assieh project. As noted in the existing conditions analysis, due to the nature of two-way stop controlled intersections, no mitigation is available for this intersection except for future signalization; however, this intersection currently does not warrant a signal under the near-term analysis conditions but Caltrans may decide to install a signal in the future at this intersection to mitigate the poor level of service of this movement. The queue for this approach was analyzed and it was determined that it will not encroach of the travel lanes of I-5 SB.

Included in the background evaluation is the addition of the Villa Ticino West project (shown at intersection #7). According to the results, the new traffic generated by the Villa Ticino West project will cause the intersection to operate at LOS F if the project roadway is controlled by a stop sign on the minor approach. Therefore, it was assumed that a signal would be installed to address the unacceptable level of service.

Near-Term Traffic Conditions with the Project

As noted, the project driveway analysis for the Assieh site was performed assuming a shared full movement access driveway, connecting to the future Villa Ticino West project roadway to the south. The following documents the results for each intersection with this driveway condition.

As shown in **Table 4**, future near-term operating conditions with the project are LOS D or better at 8 of the 10 signalized study intersections assuming the project driveway is a signalized shared full movement access driveway. The following signalized intersections operate at LOS E or E in either or both the AM and PM peak hour. Each intersection is listed and mitigation measures are recommended to improve the intersection operation to an acceptable level.

- **Airport Way/Lathrop Road**. This intersection is shown to operate at a LOS C in the AM peak hour and LOS E in the PM peak hour. To mitigate this poor operation level an eastbound right turn bay of no less than 125 feet should be installed, improving the intersection operation to LOS D in the peak hour.
- **McKinley Avenue/Louise Avenue**. This intersection is shown to operate at a LOS E in the AM and at LOS D in the PM peak hour. To mitigate this poor

operation level both a westbound and a southbound right turn bay should be installed of no less than 100 feet each. The installation of these southbound turn bays improves the intersection operation to LOS D in both the AM and PM peak hours.

The following movements at the unsignalized study intersections currently operate at LOS E or F:

- **Lathrop Road/I-5 SB Ramps (Southbound approach).** The southbound approach will continue to operate at an unacceptable level of service, regardless of the Assieh project. Assieh related traffic is not anticipated to use the intersection; therefore, the congestion is a preexisting condition and no mitigation is necessary.

Although the analysis does not show a specific overall level of service deficiency at the Louise Avenue/Airport Way intersection, it is recommended that a separate eastbound right turn lane be constructed in the near-term at the intersection. The Assieh Industrial Park will generate approximately more than 130 eastbound right turn vehicles at the intersection in addition to other traffic. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be 200 feet.

LONG-TERM CUMULATIVE LOS CONDITIONS AND IMPACTS

Traffic operations were evaluated under the following long-term development conditions:

- Cumulative long-term conditions without the project
- Cumulative long-term conditions plus the project

Results of the analysis are presented in **Table 5**. The table is separated by traffic control; i.e. signalized, two-way stop controlled, or all-way stop controlled. As noted, the HCM does not generate an overall level of service for a two-way stop-controlled intersection, so results for specific travel movements is summarized. Detailed calculations for the long-term analyses are included in the **Appendix**.

Long-Term Cumulative Traffic Conditions without the Project

As shown in the table, several intersections will not meet established level of service thresholds under cumulative traffic conditions, even without the Assieh Industrial Park. Much of the congestion and related poor level of service is connected with significant development in Manteca and Lathrop, particularly on the west side of I-5. Therefore, it was assumed that several additional roadway improvements would occur in association with other cumulative development projects. The following briefly describes additional improvements assumed to be completed to support cumulative growth regardless of the industrial park.

- **Lathrop Road/I-5 NB Ramps.** Add a 300 foot northbound right turn lane to the off ramp. The change will improve the operation to LOS A in the AM and LOS C in the PM.
- **Louise Avenue/SB I-5 Ramps.** Add a westbound through lane, eastbound through lane, and an eastbound right lane. The change will improve the operation to LOS C in the AM and LOS D in the PM.
- **Louise Avenue/NB I-5 Ramps.** Add a westbound through lane and a 400 foot northbound left turn lane and restripe the approach to include a shared through-right lane and exclusive right turn lane. Making the change improves the level of service to C in the AM and D in the PM.
- **Airport Way/SR-120 EB Ramps**. Add a 100 foot eastbound right lane. The change will improve the operation to LOS B in the AM and LOS C in the PM.
- **Yosemite Avenue/SR-120 EB Ramps**. Add a 350 foot eastbound left and 100 foot eastbound right lane. Also restripe the eastbound approach to also have a shared left-through lane. Currently the ramp is striped as a shared left-through-right lane.

Long-Term Cumulative Traffic Conditions with the Project

As shown in **Table 5**, future long-term operating conditions with the project are LOS D or better at all signalized study intersections. As seen in the table, only the Louise Avenue/SB I-5 Ramps intersection drops below an acceptable operation with the project, (assuming all the above projects are constructed as a result of other cumulative development). Evaluation of the intersection showed that the operation could be improved to LOS D in the AM and PM by adding a 300 foot southbound right turn lane at the intersection.

At the request of the city, eastbound queuing from the project driveway was evaluated and found to be less than 400 feet which is not expected to affect the operation of the nearby Union Pacific Railroad crossing.

Table 5 – Long-Term Level of Service Summary Table

	Time Frame	Current		Long-Term					
	Traffic Source	Existing		Cumulative		Cumulative + Improvement		Cumulative + Project	
	Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
Signalized Intersections									
1	I-5 SB Ramps / Lathrop Road	-	-	C	D	C	D	C	D
2	I-5 NB Ramps / Lathrop Road	-	-	B	E	A	C	A	C
3	Airport Way / Lathrop Road	B	C	C	C	C	C	C	C
4	I-5 SB Ramps / Louise Avenue	B	C	F	F	C	D	D	E
5	I-5 NB Ramps / Louise Avenue	A	A	F	F	C	D	C	D
6	McKinley Avenue / Louise Avenue	C	B	C	D	C	D	D	D
7	Project Driveway / Louise Avenue	-	-	A	A	A	A	C	C
8	Airport Way / Louise Avenue	-	-	B	C	B	C	C	C
9	Airport Way / Yosemite Avenue	B	C	C	D	C	D	C	D
10	Yosemite Ave/SR-120 EB Ramps	-	-	F	F	B	D	B	D
11	Yosemite Ave/SR-120 WB Ramps	-	-	B	D	B	D	B	D
12	Airport Way / SR-120 EB Ramps	-	-	B	E	B	C	B	D
13	Airport Way / SR-120 WB Ramps	-	-	A	B	A	B	A	B
Two-Way Stop Controlled Intersections									
1	I-5 SB Ramps / Lathrop Road								
	Southbound	F	F	-	-	-	-	-	-
	Westbound Left	A	A	-	-	-	-	-	-
2	I-5 NB Ramps / Lathrop Road								
	Northbound	B	E	-	-	-	-	-	-
	Eastbound Left	A	A	-	-	-	-	-	-
7	Project Driveway / Louise Avenue								
	Southbound	-	-	-	-	-	-	-	-
10	Yosemite Avenue / SR-120 EB Ramps								
	Eastbound	A	B	-	-	-	-	-	-
	Southbound Through-Shared-Left	A	A	-	-	-	-	-	-
11	Yosemite Avenue / SR-120 WB Ramps								
	Westbound	A	A	-	-	-	-	-	-
	Northbound Through-Shared-Left	A	A	-	-	-	-	-	-
12	Airport Way / SR-120 EB Ramps								
	Eastbound	C	F	-	-	-	-	-	-
	Southbound Left	A	A	-	-	-	-	-	-
13	Airport Way / SR-120 WB Ramps								
	Westbound	C	E	-	-	-	-	-	-
	Northbound Left	A	A	-	-	-	-	-	-
All-Way Stop Controlled Intersections									
8	Airport Way / Louise Avenue	E	F	-	-	-	-	-	-

IMPACTS AND MITIGATIONS

Impacts and mitigations are summarized below. Text contained in parentheses (e.g. Near-Term) is intended to indicate the condition when the impact is first identified. These impacts are based on the assumption that the Villa Ticino West roadway will be realigned to match the location of the Assieh project driveway. Furthermore, it assumes that several roadway and signal projects will be constructed in the near and long term as a result of existing deficiencies and other development unrelated to the Assieh Industrial Park.

Impact TRANS-1 (Near-Term): The intersection of Airport Way and Lathrop Road is shown to operate at a LOS C in the AM peak hour and LOS E in the PM peak hour in the near-term condition.

> **Mitigation Measure TRANS-1 (Near-Term):** Construct a 125 foot eastbound right turn bay to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection.

Impact TRANS-2 (Near-Term): The intersection of McKinley Avenue and Louise Avenue is shown to operate at a LOS E in the AM and peak hour and LOS D in the PM peak hour.

> **Mitigation Measure TRANS-2 (Near-Term):** Construct a 100 foot westbound and a 100 foot southbound right turn bay to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection.

Impact TRANS-3 (Near-Term): The intersection of Louise Avenue and the project driveway operates at level of service F in controlled by stop signs on the driveway approach.

> **Mitigation Measure TRANS-3 (Near-Term):** Install an 8-phase traffic signal at the intersection to improve the operation to LOS C in the AM and PM. Based on the proportion of Assieh traffic compared with Villa Ticino West, the Assieh project should pay 52% of the total design and construction costs. Villa Ticino should pay 48% of the costs.

Impact TRANS-4 (Long-Term): The intersection of I-5 SB Ramps / Louise Avenue is shown to operate at a LOS D in the AM peak hour and LOS E in the PM peak hour.

> **Mitigation Measure TRANS-4 (Near-Term):** Construct a 300 foot southbound right turn lane to the intersection. The ramp approach will require widening at the intersection. The additional lane will improve the operation to LOS D in both the AM and PM peak hours.

Other Recommendation

The Assieh Industrial Park will generate approximately more than 130 eastbound right turn vehicles at the Louise Avenue/Airport Way intersection. Although the analysis does not show a specific overall level of service deficiency at the intersection, it is recommended that a separate eastbound right turn lane be constructed in the near term at the intersection. Adding the right turn lane will minimize the conflicts between through traffic and slower right turn vehicles. To accommodate the Assieh and other turning traffic, the right turn lane should be 200 feet.

APPENDIX

Traffic Volume Data

Turning Movement Count Report
kh1101ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND I-5 SB ON-OFF RAMPS				WESTBOUND LATHRUP RD				NORTHBOUND N/A				EASTBOUND LATHRUP RD				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	65	2	0	0	97	9	0	0	0	0	0	0	0	10	2	0	185	
7:15 AM	62	2	2	0	72	15	0	0	0	0	0	0	0	8	2	0	163	
7:30 AM	48	0	0	0	79	15	0	0	0	0	0	0	0	10	5	0	157	
7:45 AM	41	3	1	0	64	5	0	0	0	0	0	0	0	8	2	0	124	629
8:00 AM	64	1	3	0	59	18	0	0	0	0	0	0	0	11	6	0	162	606
8:15 AM	52	5	1	0	36	12	0	0	0	0	0	0	0	6	2	0	114	557
8:30 AM	64	0	0	0	49	7	0	0	0	0	0	0	0	8	2	0	130	530
8:45 AM	54	1	0	0	44	8	0	0	0	0	0	0	0	14	1	0	122	528
Approach Total	471				589				0				97				1157	
Grand Total	450	14	7	0	500	89	0	0	0	0	0	0	0	75	22	0	1157	
Approach %	95.5%	3.0%	1.5%	0.0%	84.9%	15.1%	0.0%	0.0%					0.0%	77.3%	22.7%	0.0%		
Total %	38.9%	1.2%	0.6%	0.0%	43.2%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.5%	1.9%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:00**																	
Peak Hour Vol:	**216**	**7**	**3**	**0**	**312**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**11**	**0**	**629**	
Percent:	34.3%	1.1%	0.5%	0.0%	49.6%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%	1.7%	0.0%		
Intvl Vol:	65	2	0	0	97	9	0	0	0	0	0	0	0	10	2	0	185	
Peak Factor:																	**0.8500**	
High Interval:	7:00				7:00								7:30					
High Intvl Vol:	65	2	0	0	97	9	0	0					0	10	5	0		
Peak Factor:				0.8433				0.8396								0.7833		

Turning Movement Count Report
kh1101up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND I-5 SB ON-OFF RAMPS				WESTBOUND LATHRUP RD				NORTHBOUND N/A				EASTBOUND LATHRUP RD				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	89	2	1	0	37	9	0	0	0	0	0	0	0	15	2	0	155	
4:15 PM	85	1	2	0	53	12	0	0	0	0	0	0	0	16	2	0	171	
4:30 PM	85	0	1	0	42	8	0	0	0	0	0	0	0	10	2	0	148	
4:45 PM	100	1	0	0	33	10	0	0	0	0	0	0	0	17	1	0	162	636
5:00 PM	97	0	1	0	43	7	0	0	0	0	0	0	0	19	0	0	167	648
5:15 PM	113	0	0	0	35	15	0	0	0	0	0	0	0	29	0	0	192	669
5:30 PM	111	1	2	0	35	8	0	0	0	0	0	0	0	17	1	0	175	696
5:45 PM	84	0	1	0	31	20	0	0	0	0	0	0	0	5	1	0	142	676
Approach Total	777				398				0				137				1312	
Grand Total	764	5	8	0	309	89	0	0	0	0	0	0	0	128	9	0	1312	
Approach %	98.3%	0.6%	1.0%	0.0%	77.6%	22.4%	0.0%	0.0%					0.0%	93.4%	6.6%	0.0%		
Total %	58.2%	0.4%	0.6%	0.0%	23.6%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.8%	0.7%	0.0%		
Begin Peak Hour:	**16:45**																	
Peak Interval:	**17:15**																	
Peak Hour Vol:	**421**	**2**	**3**	**0**	**146**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**2**	**0**	**696**	
Percent:	60.5%	0.3%	0.4%	0.0%	21.0%	5.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	0.3%	0.0%		
Intvl Vol:	113	0	0	0	35	15	0	0	0	0	0	0	0	29	0	0	192	
Peak Factor:																	**0.9063**	
High Interval:	17:30				17:00								17:15					
High Intvl Vol:	111	1	2	0	43	7	0	0					0	29	0	0		
Peak Factor:				0.9342				0.9300								0.7241		

Turning Movement Count Report
kh1102ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND N/A				WESTBOUND LATHRUP RD				NORTHBOUND I-5 NB ON-OFF RAMPS				EASTBOUND LATHRUP RD				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	0	0	0	0	0	105	70	0	0	0	27	0	0	70	0	0	272	
7:15 AM	0	0	0	0	0	82	95	0	1	0	26	0	1	73	0	0	278	
7:30 AM	0	0	0	0	0	91	128	0	8	0	42	0	2	51	0	0	322	
7:45 AM	0	0	0	0	0	72	88	0	2	0	32	0	1	49	0	0	244	1116
8:00 AM	0	0	0	0	0	72	61	0	5	0	26	0	2	72	0	0	238	1082
8:15 AM	0	0	0	0	0	50	78	0	1	0	31	0	0	62	0	0	222	1026
8:30 AM	0	0	0	0	0	54	59	0	1	0	22	0	1	71	0	0	208	912
8:45 AM	0	0	0	0	0	53	56	0	1	0	36	0	1	70	0	0	217	885
Approach Total	0				1214				261				526				2001	
Grand Total	0	0	0	0	0	579	635	0	19	0	242	0	8	518	0	0	2001	
Approach %					0.0%	47.7%	52.3%	0.0%	7.3%	0.0%	92.7%	0.0%	1.5%	98.5%	0.0%	0.0%		
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	28.9%	31.7%	0.0%	0.9%	0.0%	12.1%	0.0%	0.4%	25.9%	0.0%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:30**																	
Peak Hour Vol:	**0**	**0**	**0**	**0**	**0**	**350**	**381**	**0**	**11**	**0**	**127**	**0**	**4**	**243**	**0**	**0**	**1116**	
Percent:	0.0%	0.0%	0.0%	0.0%	0.0%	31.4%	34.1%	0.0%	1.0%	0.0%	11.4%	0.0%	0.4%	21.8%	0.0%	0.0%		
Intvl Vol:	0	0	0	0	0	91	128	0	8	0	42	0	2	51	0	0	322	
Peak Factor:																	**0.8665**	
High Interval:					7:30				7:30				7:15					
High Intvl Vol:					0	91	128	0	8	0	42	0	1	73	0	0		
Peak Factor:								0.8345				0.6900				0.8345		

Turning Movement Count Report
kh1102up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND N/A				WESTBOUND LATHRUP RD				NORTHBOUND I-5 NB ON-OFF RAMPS				EASTBOUND LATHRUP RD				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	0	0	0	0	0	46	75	0	3	0	89	0	5	101	0	0	319	
4:15 PM	0	0	0	0	0	62	64	0	3	0	95	0	4	98	0	0	326	
4:30 PM	0	0	0	0	0	50	63	0	1	0	86	0	0	97	0	0	297	
4:45 PM	0	0	0	0	0	41	70	0	2	0	90	0	2	112	0	0	317	1259
5:00 PM	0	0	0	0	0	49	66	0	1	0	88	0	3	108	0	0	315	1255
5:15 PM	0	0	0	0	0	45	77	0	5	0	106	0	4	140	0	0	377	1306
5:30 PM	0	0	0	0	0	42	70	0	1	0	110	0	4	126	0	0	353	1362
5:45 PM	0	0	0	0	0	45	57	0	4	0	102	0	1	96	0	0	305	1350
Approach Total	0				922				786				901				2609	
Grand Total	0	0	0	0	0	380	542	0	20	0	766	0	23	878	0	0	2609	
Approach %					0.0%	41.2%	58.8%	0.0%	2.5%	0.0%	97.5%	0.0%	2.6%	97.4%	0.0%	0.0%		
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	14.6%	20.8%	0.0%	0.8%	0.0%	29.4%	0.0%	0.9%	33.7%	0.0%	0.0%		
Begin Peak Hour:	**16:45**																	
Peak Interval:	**17:15**																	
Peak Hour Vol:	**0**	**0**	**0**	**0**	**0**	**177**	**283**	**0**	**9**	**0**	**394**	**0**	**13**	**486**	**0**	**0**	**1362**	
Percent:	0.0%	0.0%	0.0%	0.0%	0.0%	13.0%	20.8%	0.0%	0.7%	0.0%	28.9%	0.0%	1.0%	35.7%	0.0%	0.0%		
Intvl Vol:	0	0	0	0	0	45	77	0	5	0	106	0	4	140	0	0	377	
Peak Factor:																	**0.9032**	
High Interval:					17:15				17:15				17:15					
High Intvl Vol:					0	45	77	0	5	0	106	0	4	140	0	0		
Peak Factor:								0.9426				0.9077				0.8663		

Turning Movement Count Report
kh1103ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND I-5 SB				WESTBOUND LOUISE AVE				NORTHBOUND N/A				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	70	0	1	0	92	4	0	0	0	0	0	0	0	4	2	0	173	
7:15 AM	58	0	0	0	106	13	0	0	0	0	0	0	0	10	1	0	188	
7:30 AM	73	0	3	0	124	15	0	0	0	0	0	0	0	13	0	0	228	
7:45 AM	104	0	4	0	70	14	0	0	0	0	0	0	0	13	0	0	205	794
8:00 AM	57	1	2	0	60	15	0	0	0	0	0	0	0	14	0	0	149	770
8:15 AM	68	0	3	0	79	15	0	0	0	0	0	0	0	9	3	0	177	759
8:30 AM	76	0	2	0	78	6	0	0	0	0	0	0	0	10	4	0	176	707
8:45 AM	95	2	2	0	69	9	0	0	0	0	0	0	0	9	2	0	188	690
Approach Total	621				769				0				94				1484	
Grand Total	601	3	17	0	678	91	0	0	0	0	0	0	0	82	12	0	1484	
Approach %	96.8%	0.5%	2.7%	0.0%	88.2%	11.8%	0.0%	0.0%					0.0%	87.2%	12.8%	0.0%		
Total %	40.5%	0.2%	1.1%	0.0%	45.7%	6.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.5%	0.8%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:30**																	
Peak Hour Vol:	**305**	**0**	**8**	**0**	**392**	**46**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**3**	**0**	**794**	
Percent:	38.4%	0.0%	1.0%	0.0%	49.4%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.4%	0.0%		
Intvl Vol:	73	0	3	0	124	15	0	0	0	0	0	0	0	13	0	0	228	
Peak Factor:																	**0.8706**	
High Interval:	7:45				7:30								7:30					
High Intvl Vol:	104	0	4	0	124	15	0	0					0	13	0	0		
Peak Factor:				0.7245				0.7878								0.8269		

Turning Movement Count Report
kh1103up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

	SOUTHBOUND				WESTBOUND				NORTHBOUND				EASTBOUND				INTSEC	HOUR
Street Name	I- 5 SB				LOUISE AVE				N/A				LOUISE AVE					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	94	0	0	0	72	18	0	0	0	0	0	0	0	17	5	0	206	
4:15 PM	82	0	0	0	83	14	0	0	0	0	0	0	0	13	3	0	195	
4:30 PM	77	0	1	0	85	6	0	0	0	0	0	0	0	8	2	0	179	
4:45 PM	86	0	2	0	75	15	0	0	0	0	0	0	0	14	1	0	193	773
5:00 PM	82	2	1	0	89	14	0	0	0	0	0	0	0	19	4	0	211	778
5:15 PM	122	0	1	0	68	13	0	0	0	0	0	0	0	13	0	0	217	800
5:30 PM	94	0	1	0	99	13	0	0	0	0	0	0	0	17	2	0	226	847
5:45 PM	102	0	0	0	86	12	0	0	0	0	0	0	0	8	3	0	211	865
Approach Total	747				762				0				129				1638	
Grand Total	739	2	6	0	657	105	0	0	0	0	0	0	0	109	20	0	1638	
Approach %	98.9%	0.3%	0.8%	0.0%	86.2%	13.8%	0.0%	0.0%					0.0%	84.5%	15.5%	0.0%		
Total %	45.1%	0.1%	0.4%	0.0%	40.1%	6.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	1.2%	0.0%		
Begin Peak Hour:	**17:00**																	
Peak Interval:	**17:30**																	
Peak Hour Vol:	**400**	**2**	**3**	**0**	**342**	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**9**	**0**	**865**	
Percent:	46.2%	0.2%	0.3%	0.0%	39.5%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.6%	1.0%	0.0%		
Intvl Vol:	94	0	1	0	99	13	0	0	0	0	0	0	0	17	2	0	226	
Peak Factor:																	**0.9569**	
High Interval:	17:15				17:30								17:00					
High Intvl Vol:	122	0	1	0	99	13	0	0					0	19	4	0		
Peak Factor:				0.8232				0.8795								0.7174		

Turning Movement Count Report
kh1104ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND N/A				WESTBOUND LOUISE AVE				NORTHBOUND I-5 NB				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	0	0	0	0	0	92	74	0	3	0	57	0	2	72	0	0	300	
7:15 AM	0	0	0	0	0	129	115	0	4	2	57	0	0	65	0	0	372	
7:30 AM	0	0	0	0	0	112	90	0	3	2	71	0	1	83	0	0	362	
7:45 AM	0	0	0	0	0	66	59	0	7	1	95	0	1	120	0	0	349	1383
8:00 AM	0	0	0	0	0	79	56	0	2	1	61	0	4	66	0	0	269	1352
8:15 AM	0	0	0	0	0	78	81	0	4	1	62	0	3	75	0	0	304	1284
8:30 AM	0	0	0	0	0	75	69	0	1	1	77	0	0	92	0	0	315	1237
8:45 AM	0	0	0	0	0	30	34	0	3	0	72	0	4	101	0	0	244	1132
Approach Total	0				1239				587				689				2515	
Grand Total	0	0	0	0	0	661	578	0	27	8	552	0	15	674	0	0	2515	
Approach %					0.0%	53.3%	46.7%	0.0%	4.6%	1.4%	94.0%	0.0%	2.2%	97.8%	0.0%	0.0%		
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	26.3%	23.0%	0.0%	1.1%	0.3%	21.9%	0.0%	0.6%	26.8%	0.0%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:15**																	
Peak Hour Vol:	**0**	**0**	**0**	**0**	**0**	**399**	**338**	**0**	**17**	**5**	**280**	**0**	**4**	**340**	**0**	**0**	**1383**	
Percent:	0.0%	0.0%	0.0%	0.0%	0.0%	28.9%	24.4%	0.0%	1.2%	0.4%	20.2%	0.0%	0.3%	24.6%	0.0%	0.0%		
Intvl Vol:	0	0	0	0	0	129	115	0	4	2	57	0	0	65	0	0	372	
Peak Factor:																	**0.9294**	
High Interval:					7:15				7:45				7:45					
High Intvl Vol:					0	129	115	0	7	1	95	0	1	120	0	0		
Peak Factor:								0.7551				0.7330				0.7107		

Turning Movement Count Report
kh1104up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

	SOUTHBOUND				WESTBOUND				NORTHBOUND				EASTBOUND				INTSEC	HOUR
Street Name	N/A				LOUISE AVE				I-5 NB				LOUISE AVE					
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	0	0	0	0	0	92	103	0	4	1	96	0	2	111	0	0	409	
4:15 PM	0	0	0	0	0	85	92	0	8	1	98	0	4	91	0	0	379	
4:30 PM	0	0	0	0	0	84	122	0	3	1	104	0	6	74	0	0	394	
4:45 PM	0	0	0	0	0	85	88	0	3	0	117	0	1	100	0	0	394	1576
5:00 PM	0	0	0	0	0	102	96	0	4	1	149	0	7	100	0	0	459	1626
5:15 PM	0	0	0	0	0	80	123	0	3	1	131	0	5	128	0	0	471	1718
5:30 PM	0	0	0	0	0	103	144	0	1	2	152	0	5	117	0	0	524	1848
5:45 PM	0	0	0	0	0	88	91	0	1	0	114	0	0	102	0	0	396	1850
Approach Total	0				1578				995				853				3426	
Grand Total	0	0	0	0	0	719	859	0	27	7	961	0	30	823	0	0	3426	
Approach %					0.0%	45.6%	54.4%	0.0%	2.7%	0.7%	96.6%	0.0%	3.5%	96.5%	0.0%	0.0%		
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	25.1%	0.0%	0.8%	0.2%	28.1%	0.0%	0.9%	24.0%	0.0%	0.0%		
Begin Peak Hour:	**17:00**																	
Peak Interval:	**17:30**																	
Peak Hour Vol:	**0**	**0**	**0**	**0**	**0**	**373**	**454**	**0**	**9**	**4**	**546**	**0**	**17**	**447**	**0**	**0**	**1850**	
Percent:	0.0%	0.0%	0.0%	0.0%	0.0%	20.2%	24.5%	0.0%	0.5%	0.2%	29.5%	0.0%	0.9%	24.2%	0.0%	0.0%		
Intvl Vol:	0	0	0	0	0	103	144	0	1	2	152	0	5	117	0	0	524	
Peak Factor:																	**0.8826**	
High Interval:					17:30				17:30				17:15					
High Intvl Vol:					0	103	144	0	1	2	152	0	5	128	0	0		
Peak Factor:								0.8370				0.9016				0.8722		

Turning Movement Count Report
kh1105ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND YOSEMITE				WESTBOUND N/A				NORTHBOUND YOSEMITE				EASTBOUND SR120 EB RAMPS				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	1	2	0	0	0	0	0	0	0	1	0	0	0	1	1	0	6	
7:15 AM	3	3	0	0	0	0	0	0	0	5	0	0	17	0	2	0	30	
7:30 AM	3	5	0	0	0	0	0	0	0	7	1	0	16	1	1	0	34	
7:45 AM	2	11	0	0	0	0	0	0	0	9	1	0	15	0	2	0	40	110
8:00 AM	2	2	0	0	0	0	0	0	0	8	1	0	17	1	1	0	32	136
8:15 AM	2	5	0	0	0	0	0	0	0	2	2	0	23	1	1	0	36	142
8:30 AM	4	1	0	0	0	0	0	0	0	6	1	0	21	1	1	0	35	143
8:45 AM	5	1	0	0	0	0	0	0	0	1	2	0	23	0	0	0	32	135
Approach Total	52				0				47				146				245	
Grand Total	22	30	0	0	0	0	0	0	0	39	8	0	132	5	9	0	245	
Approach %	42.3%	57.7%	0.0%	0.0%					0.0%	83.0%	17.0%	0.0%	90.4%	3.4%	6.2%	0.0%		
Total %	9.0%	12.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.9%	3.3%	0.0%	53.9%	2.0%	3.7%	0.0%		
Begin Peak Hour:	**7:45**																	
Peak Interval:	**7:45**																	
Peak Hour Vol:	**10**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**5**	**0**	**76**	**3**	**5**	**0**	**143**	
Percent:	7.0%	13.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.5%	3.5%	0.0%	53.1%	2.1%	3.5%	0.0%		
Intvl Vol:	2	11	0	0	0	0	0	0	0	9	1	0	15	0	2	0	40	
Peak Factor:																	**0.8938**	
High Interval:	7:45								7:45				8:15					
High Intvl Vol:	2	11	0	0					0	9	1	0	23	1	1	0		
Peak Factor:				0.5577								0.7500				0.8400		

Turning Movement Count Report
kh1105up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND YOSEMITE				WESTBOUND N/A				NORTHBOUND YOSEMITE				EASTBOUND SR120 EB RAMPS				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	6	4	0	0	0	0	0	0	0	8	2	0	62	0	3	0	85	
4:15 PM	3	1	0	0	0	0	0	0	0	6	1	0	66	1	5	0	83	
4:30 PM	2	2	0	0	0	0	0	0	0	3	3	0	43	0	2	0	55	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	223
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	138
5:15 PM	4	0	0	0	0	0	0	0	0	2	2	0	28	0	0	0	36	91
5:30 PM	4	1	0	0	0	0	0	0	0	2	3	0	44	1	4	0	59	95
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	35	0	3	0	40	135
Approach Total	27				0				34				297				358	
Grand Total	19	8	0	0	0	0	0	0	0	22	12	0	278	2	17	0	358	
Approach %	70.4%	29.6%	0.0%	0.0%					0.0%	64.7%	35.3%	0.0%	93.6%	0.7%	5.7%	0.0%		
Total %	5.3%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.1%	3.4%	0.0%	77.7%	0.6%	4.7%	0.0%		
Begin Peak Hour:	**16:00**																	
Peak Interval:	**16:00**																	
Peak Hour Vol:	**11**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**6**	**0**	**171**	**1**	**10**	**0**	**223**	
Percent:	4.9%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.6%	2.7%	0.0%	76.7%	0.4%	4.5%	0.0%		
Intvl Vol:	6	4	0	0	0	0	0	0	0	8	2	0	62	0	3	0	85	
Peak Factor:																	**0.6559**	
High Interval:	16:00								16:00				16:15					
High Intvl Vol:	6	4	0	0					0	8	2	0	66	1	5	0		
Peak Factor:				0.4500								0.5750				0.6319		

Turning Movement Count Report
kh1106ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND YOSEMITE				WESTBOUND SR120 WB				NORTHBOUND YOSEMITE				EASTBOUND N/A				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	0	2	17	0	5	0	1	0	3	17	0	0	0	0	0	0	45	
7:15 AM	0	2	39	0	4	0	5	0	9	12	0	0	0	0	0	0	71	
7:30 AM	0	6	28	0	2	0	2	0	5	20	0	0	0	0	0	0	63	
7:45 AM	0	8	29	0	4	0	5	0	7	24	0	0	0	0	0	0	77	256
8:00 AM	0	3	30	0	1	0	2	0	3	16	0	0	0	0	0	0	55	266
8:15 AM	0	5	30	0	3	0	1	0	2	26	0	0	0	0	0	0	67	262
8:30 AM	0	1	17	0	1	0	2	0	0	22	0	0	0	0	0	0	43	242
8:45 AM	0	5	20	0	2	0	4	0	3	20	0	0	0	0	0	0	54	219
Approach Total	242				44				189				0				475	
Grand Total	0	32	210	0	22	0	22	0	32	157	0	0	0	0	0	0	475	
Approach %	0.0%	13.2%	86.8%	0.0%	50.0%	0.0%	50.0%	0.0%	16.9%	83.1%	0.0%	0.0%						
Total %	0.0%	6.7%	44.2%	0.0%	4.6%	0.0%	4.6%	0.0%	6.7%	33.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Begin Peak Hour:	**7:15**																	
Peak Interval:	**7:45**																	
Peak Hour Vol:	**0**	**19**	**126**	**0**	**11**	**0**	**14**	**0**	**24**	**72**	**0**	**0**	**0**	**0**	**0**	**0**	**266**	
Percent:	0.0%	7.1%	47.4%	0.0%	4.1%	0.0%	5.3%	0.0%	9.0%	27.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Intvl Vol:	0	8	29	0	4	0	5	0	7	24	0	0	0	0	0	0	77	
Peak Factor:																	**0.8636**	
High Interval:	7:15				7:15				7:45									
High Intvl Vol:	0	2	39	0	4	0	5	0	7	24	0	0						
Peak Factor:				0.8841				0.6944				0.7742						

Turning Movement Count Report
kh1106up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/12/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND YOSEMITE				WESTBOUND SR120 WB				NORTHBOUND YOSEMITE				EASTBOUND N/A				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	0	9	32	0	1	1	3	0	3	58	0	0	0	0	0	0	107	
4:15 PM	0	3	30	0	1	0	3	0	7	63	0	0	0	0	0	0	107	
4:30 PM	0	5	32	0	0	0	3	0	5	59	0	0	0	0	0	0	104	
4:45 PM	0	3	34	0	1	0	0	0	2	62	0	0	0	0	0	0	102	420
5:00 PM	0	8	41	0	0	0	3	0	2	64	0	0	0	0	0	0	118	431
5:15 PM	0	9	32	0	1	0	3	0	4	56	0	0	0	0	0	0	105	429
5:30 PM	0	3	17	0	1	1	4	0	3	50	0	0	0	0	0	0	79	404
5:45 PM	0	1	15	0	0	0	4	0	2	35	0	0	0	0	0	0	57	359
Approach Total	274				30				475				0				779	
Grand Total	0	41	233	0	5	2	23	0	28	447	0	0	0	0	0	0	779	
Approach %	0.0%	15.0%	85.0%	0.0%	16.7%	6.7%	76.7%	0.0%	5.9%	94.1%	0.0%	0.0%						
Total %	0.0%	5.3%	29.9%	0.0%	0.6%	0.3%	3.0%	0.0%	3.6%	57.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Begin Peak Hour:	**16:15**																	
Peak Interval:	**17:00**																	
Peak Hour Vol:	**0**	**19**	**137**	**0**	**2**	**0**	**9**	**0**	**16**	**248**	**0**	**0**	**0**	**0**	**0**	**0**	**431**	
Percent:	0.0%	4.4%	31.8%	0.0%	0.5%	0.0%	2.1%	0.0%	3.7%	57.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Intvl Vol:	0	8	41	0	0	0	3	0	2	64	0	0	0	0	0	0	118	
Peak Factor:																	**0.9131**	
High Interval:	17:00				16:15				16:15									
High Intvl Vol:	0	8	41	0	1	0	3	0	7	63	0	0						
Peak Factor:				0.7959				0.6875				0.9429						

Turning Movement Count Report
kh1107ua.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND N/A				NORTHBOUND AIRPORT WAY				EASTBOUND SR120 EB				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	19	29	0	0	0	0	0	0	0	92	9	0	25	1	18	0	193	
7:15 AM	23	48	0	0	0	0	0	0	0	76	11	0	22	0	11	0	191	
7:30 AM	24	37	0	0	0	0	0	0	0	62	21	0	25	3	12	0	184	
7:45 AM	20	25	0	0	0	0	0	0	0	41	14	0	29	2	13	0	144	712
8:00 AM	20	38	0	0	0	0	0	0	0	61	17	0	27	0	9	0	172	691
8:15 AM	20	41	0	0	0	0	0	0	0	74	21	0	30	1	18	0	205	705
8:30 AM	26	53	0	0	0	0	0	0	0	61	18	0	20	0	15	0	193	714
8:45 AM	25	44	0	0	0	0	0	0	0	42	11	0	24	1	3	0	150	720
Approach Total	492				0				631				309				1432	
Grand Total	177	315	0	0	0	0	0	0	0	509	122	0	202	8	99	0	1432	
Approach %	36.0%	64.0%	0.0%	0.0%					0.0%	80.7%	19.3%	0.0%	65.4%	2.6%	32.0%	0.0%		
Total %	12.4%	22.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	35.5%	8.5%	0.0%	14.1%	0.6%	6.9%	0.0%		
Begin Peak Hour:	**8:00**																	
Peak Interval:	**8:15**																	
Peak Hour Vol:	**91**	**176**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**238**	**67**	**0**	**101**	**2**	**45**	**0**	**720**	
Percent:	12.6%	24.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.1%	9.3%	0.0%	14.0%	0.3%	6.3%	0.0%		
Intvl Vol:	20	41	0	0	0	0	0	0	0	74	21	0	30	1	18	0	205	
Peak Factor:																	**0.8780**	
High Interval:	8:30								8:15				8:15					
High Intvl Vol:	26	53	0	0					0	74	21	0	30	1	18	0		
Peak Factor:				0.8449								0.8026				0.7551		

Turning Movement Count Report
kh1107up.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND N/A				NORTHBOUND AIRPORT WAY				EASTBOUND SR120 EB				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	45	66	0	0	0	0	0	0	0	44	23	0	98	0	33	0	309	
4:15 PM	26	70	0	0	0	0	0	0	0	49	18	0	85	0	42	0	290	
4:30 PM	38	59	0	0	0	0	0	0	0	52	21	0	81	0	29	0	280	
4:45 PM	31	46	0	0	0	0	0	0	0	56	17	0	111	0	35	0	296	1175
5:00 PM	54	65	0	0	0	0	0	0	0	47	15	0	78	1	28	0	288	1154
5:15 PM	46	63	0	0	0	0	0	0	0	45	10	0	95	0	30	0	289	1153
5:30 PM	31	62	0	0	0	0	0	0	0	37	20	0	79	0	23	0	252	1125
5:45 PM	12	56	0	0	0	0	0	0	0	47	10	0	65	0	17	0	207	1036
Approach Total	770				0				511				930				2211	
Grand Total	283	487	0	0	0	0	0	0	0	377	134	0	692	1	237	0	2211	
Approach %	36.8%	63.2%	0.0%	0.0%					0.0%	73.8%	26.2%	0.0%	74.4%	0.1%	25.5%	0.0%		
Total %	12.8%	22.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.1%	6.1%	0.0%	31.3%	0.0%	10.7%	0.0%		
Begin Peak Hour:	**16:00**																	
Peak Interval:	**16:00**																	
Peak Hour Vol:	**140**	**241**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**201**	**79**	**0**	**375**	**0**	**139**	**0**	**1175**	
Percent:	11.9%	20.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.1%	6.7%	0.0%	31.9%	0.0%	11.8%	0.0%		
Intvl Vol:	45	66	0	0	0	0	0	0	0	44	23	0	98	0	33	0	309	
Peak Factor:																	**0.9506**	
High Interval:	16:00								16:30				16:45					
High Intvl Vol:	45	66	0	0					0	52	21	0	111	0	35	0		
Peak Factor:				0.8581								0.9589				0.8801		

Turning Movement Count Report
KH1108UA.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND SR120 WB				NORTHBOUND AIRPORT WAY				EASTBOUND N/A				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	0	38	92	0	14	0	48	0	36	77	0	0	0	0	0	0	305	
7:15 AM	0	50	92	0	11	0	49	0	25	73	0	0	0	0	0	0	300	
7:30 AM	0	46	85	0	10	0	41	0	36	51	0	0	0	0	0	0	269	
7:45 AM	0	35	56	0	13	0	47	0	24	46	0	0	0	0	0	0	221	1095
8:00 AM	0	39	64	0	13	0	25	0	22	66	0	0	0	0	0	0	229	1019
8:15 AM	0	50	35	0	16	0	31	0	25	79	0	0	0	0	0	0	236	955
8:30 AM	0	66	61	0	11	0	22	0	15	65	0	0	0	0	0	0	240	926
8:45 AM	0	52	56	0	11	0	21	0	15	56	0	0	0	0	0	0	211	916
Approach Total	917				383				711				0				2011	
Grand Total	0	376	541	0	99	0	284	0	198	513	0	0	0	0	0	0	2011	
Approach %	0.0%	41.0%	59.0%	0.0%	25.8%	0.0%	74.2%	0.0%	27.8%	72.2%	0.0%	0.0%						
Total %	0.0%	18.7%	26.9%	0.0%	4.9%	0.0%	14.1%	0.0%	9.8%	25.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:00**																	
Peak Hour Vol:	**0**	**169**	**325**	**0**	**48**	**0**	**185**	**0**	**121**	**247**	**0**	**0**	**0**	**0**	**0**	**0**	**1095**	
Percent:	0.0%	15.4%	29.7%	0.0%	4.4%	0.0%	16.9%	0.0%	11.1%	22.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Intvl Vol:	0	38	92	0	14	0	48	0	36	77	0	0	0	0	0	0	305	
Peak Factor:																	**0.8975**	
High Interval:	7:15				7:00				7:00									
High Intvl Vol:	0	50	92	0	14	0	48	0	36	77	0	0						
Peak Factor:				0.8697				0.9395				0.8142						

Turning Movement Count Report
KH1108UP.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND SR120 WB				NORTHBOUND AI				EASTBOUND N/A				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	0	76	26	0	21	0	23	0	12	136	0	0	0	0	0	0	294	
4:15 PM	0	68	27	0	22	0	39	0	16	117	0	0	0	0	0	0	289	
4:30 PM	0	66	30	0	26	0	22	0	12	129	0	0	0	0	0	0	285	
4:45 PM	0	62	19	0	14	1	29	0	14	155	0	0	0	0	0	0	294	1162
5:00 PM	0	105	26	0	15	0	29	0	9	116	0	0	0	0	0	0	300	1168
5:15 PM	0	87	20	0	21	1	36	0	9	139	0	0	0	0	0	0	313	1192
5:30 PM	0	73	34	0	20	0	27	0	6	109	0	0	0	0	0	0	269	1176
5:45 PM	0	50	26	0	20	1	32	0	9	105	0	0	0	0	0	0	243	1125
Approach Total	795				399				1093				0				2287	
Grand Total	0	587	208	0	159	3	237	0	87	1006	0	0	0	0	0	0	2287	
Approach %	0.0%	73.8%	26.2%	0.0%	39.8%	0.8%	59.4%	0.0%	8.0%	92.0%	0.0%	0.0%						
Total %	0.0%	25.7%	9.1%	0.0%	7.0%	0.1%	10.4%	0.0%	3.8%	44.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Begin Peak Hour:	**16:30**																	
Peak Interval:	**17:15**																	
Peak Hour Vol:	**0**	**320**	**95**	**0**	**76**	**2**	**116**	**0**	**44**	**539**	**0**	**0**	**0**	**0**	**0**	**0**	**1192**	
Percent:	0.0%	26.8%	8.0%	0.0%	6.4%	0.2%	9.7%	0.0%	3.7%	45.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Intvl Vol:	0	87	20	0	21	1	36	0	9	139	0	0	0	0	0	0	313	
Peak Factor:																	**0.9521**	
High Interval:	17:00				17:15				16:45									
High Intvl Vol:	0	105	26	0	21	1	36	0	14	155	0	0						
Peak Factor:				0.7920				0.8362				0.8624						

Turning Movement Count Report
KH1109UA.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT				WESTBOUND YOSEMITE				NORTHBOUND AIRPORT				EASTBOUND YOSEMITE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	55	50	9	0	24	63	43	0	16	36	8	0	2	101	13	0	420	
7:15 AM	53	47	6	0	19	78	51	0	23	49	14	0	2	80	18	0	440	
7:30 AM	25	54	6	0	19	61	25	0	22	39	21	0	5	20	10	0	307	
7:45 AM	18	40	8	0	13	46	37	0	26	35	23	0	2	31	7	0	286	1453
8:00 AM	13	45	1	0	17	36	24	0	14	22	31	0	0	35	5	0	243	1276
8:15 AM	28	43	6	0	17	29	30	0	13	38	27	0	2	29	9	0	271	1107
8:30 AM	31	52	13	0	16	29	28	0	11	32	21	0	2	34	14	0	283	1083
8:45 AM	39	44	3	0	26	37	17	0	9	31	26	0	4	62	10	0	308	1105
Approach Total	689				785				587				497				2558	
Grand Total	262	375	52	0	151	379	255	0	134	282	171	0	19	392	86	0	2558	
Approach %	38.0%	54.4%	7.5%	0.0%	19.2%	48.3%	32.5%	0.0%	22.8%	48.0%	29.1%	0.0%	3.8%	78.9%	17.3%	0.0%		
Total %	10.2%	14.7%	2.0%	0.0%	5.9%	14.8%	10.0%	0.0%	5.2%	11.0%	6.7%	0.0%	0.7%	15.3%	3.4%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:15**																	
Peak Hour Vol:	**151**	**191**	**29**	**0**	**75**	**248**	**156**	**0**	**87**	**159**	**66**	**0**	**11**	**232**	**48**	**0**	**1453**	
Percent:	10.4%	13.1%	2.0%	0.0%	5.2%	17.1%	10.7%	0.0%	6.0%	10.9%	4.5%	0.0%	0.8%	16.0%	3.3%	0.0%		
Intvl Vol:	53	47	6	0	19	78	51	0	23	49	14	0	2	80	18	0	440	
Peak Factor:																	**0.8256**	
High Interval:	7:00				7:15				7:15				7:00					
High Intvl Vol:	55	50	9	0	19	78	51	0	23	49	14	0	2	101	13	0		
Peak Factor:				0.8136				0.8091				0.9070				0.6272		

Turning Movement Count Report
KH1109UP.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT				WESTBOUND YOSEMITE				NORTHBOUND AIRPORT				EASTBOUND YOSEMITE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	42	44	4	0	24	67	59	0	12	56	23	0	28	99	31	1	490	
4:15 PM	38	46	3	0	25	71	38	0	16	67	40	0	20	102	21	1	488	
4:30 PM	42	30	4	0	27	73	34	0	18	59	50	0	19	88	24	0	468	
4:45 PM	44	39	5	0	22	70	52	0	15	68	40	0	21	90	19	0	485	1931
5:00 PM	41	51	5	0	35	79	47	0	18	71	37	0	42	111	50	0	587	2028
5:15 PM	47	47	9	0	27	61	30	0	18	60	43	0	22	92	32	0	488	2028
5:30 PM	63	36	2	0	32	55	31	1	12	61	35	0	19	75	12	0	434	1994
5:45 PM	51	40	8	0	22	40	17	0	18	65	30	0	12	64	10	0	377	1886
Approach Total	741				1039				932				1105				3817	
Grand Total	368	333	40	0	214	516	308	1	127	507	298	0	183	721	199	2	3817	
Approach %	49.7%	44.9%	5.4%	0.0%	20.6%	49.7%	29.6%	0.1%	13.6%	54.4%	32.0%	0.0%	16.6%	65.2%	18.0%	0.2%		
Total %	9.6%	8.7%	1.0%	0.0%	5.6%	13.5%	8.1%	0.0%	3.3%	13.3%	7.8%	0.0%	4.8%	18.9%	5.2%	0.1%		
Begin Peak Hour:	**16:15**																	
Peak Interval:	**17:00**																	
Peak Hour Vol:	**165**	**166**	**17**	**0**	**109**	**293**	**171**	**0**	**67**	**265**	**167**	**0**	**102**	**391**	**114**	**1**	**2028**	
Percent:	8.1%	8.2%	0.8%	0.0%	5.4%	14.4%	8.4%	0.0%	3.3%	13.1%	8.2%	0.0%	5.0%	19.3%	5.6%	0.0%		
Intvl Vol:	41	51	5	0	35	79	47	0	18	71	37	0	42	111	50	0	587	
Peak Factor:																	**0.8637**	
High Interval:	17:00				17:00				16:30				17:00					
High Intvl Vol:	41	51	5	0	35	79	47	0	18	59	50	0	42	111	50	0		
Peak Factor:				0.8969				0.8898				0.9823				0.7488		

Turning Movement Count Report
KH1110UA.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND LOUISE AVE				NORTHBOUND AIRPORT WAY				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	4	42	12	0	24	59	7	0	22	33	10	0	7	29	12	0	261	
7:15 AM	4	45	21	0	11	74	13	0	31	46	8	0	6	36	11	1	307	
7:30 AM	6	39	21	0	16	89	11	0	24	30	4	0	9	44	19	0	312	
7:45 AM	10	31	24	0	19	59	2	0	26	39	7	0	5	49	11	0	282	1162
8:00 AM	6	34	19	0	14	55	3	0	23	21	8	0	7	44	8	0	242	1143
8:15 AM	11	41	19	0	15	52	11	1	13	34	8	0	8	36	11	0	260	1096
8:30 AM	11	56	10	0	17	70	5	0	18	24	6	0	3	25	14	0	259	1043
8:45 AM	11	48	4	0	17	36	8	0	12	31	7	0	7	36	21	0	238	999
Approach Total	529				688				485				459				2161	
Grand Total	63	336	130	0	133	494	60	1	169	258	58	0	52	299	107	1	2161	
Approach %	11.9%	63.5%	24.6%	0.0%	19.3%	71.8%	8.7%	0.1%	34.8%	53.2%	12.0%	0.0%	11.3%	65.1%	23.3%	0.2%		
Total %	2.9%	15.5%	6.0%	0.0%	6.2%	22.9%	2.8%	0.0%	7.8%	11.9%	2.7%	0.0%	2.4%	13.8%	5.0%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:30**																	
Peak Hour Vol:	**24**	**157**	**78**	**0**	**70**	**281**	**33**	**0**	**103**	**148**	**29**	**0**	**27**	**158**	**53**	**1**	**1162**	
Percent:	2.1%	13.5%	6.7%	0.0%	6.0%	24.2%	2.8%	0.0%	8.9%	12.7%	2.5%	0.0%	2.3%	13.6%	4.6%	0.1%		
Intvl Vol:	6	39	21	0	16	89	11	0	24	30	4	0	9	44	19	0	312	
Peak Factor:																	**0.9311**	
High Interval:	7:15				7:30				7:15				7:30					
High Intvl Vol:	4	45	21	0	16	89	11	0	31	46	8	0	9	44	19	0		
Peak Factor:				0.9250				0.8276				0.8235				0.8299		

Turning Movement Count Report
KH1110UP.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT WAY				WESTBOUND LOUISE AVE				NORTHBOUND AIRPORT WAY				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	16	62	12	0	15	77	6	0	16	52	34	0	12	71	33	0	406	
4:15 PM	21	56	6	0	10	45	6	0	16	40	30	0	8	73	15	0	326	
4:30 PM	20	52	6	0	10	57	6	0	23	38	36	0	17	67	19	0	351	
4:45 PM	29	71	2	0	11	63	7	0	12	50	27	0	7	75	35	0	389	1472
5:00 PM	23	79	9	0	12	63	10	0	21	45	37	0	13	81	15	0	408	1474
5:15 PM	10	58	7	0	15	57	0	0	20	52	32	0	13	80	18	0	362	1510
5:30 PM	11	85	7	0	16	74	8	0	11	37	26	0	15	79	18	0	387	1546
5:45 PM	6	53	9	0	14	56	6	0	18	30	30	0	17	71	19	0	329	1486
Approach Total	710				644				733				871				2958	
Grand Total	136	516	58	0	103	492	49	0	137	344	252	0	102	597	172	0	2958	
Approach %	19.2%	72.7%	8.2%	0.0%	16.0%	76.4%	7.6%	0.0%	18.7%	46.9%	34.4%	0.0%	11.7%	68.5%	19.7%	0.0%		
Total %	4.6%	17.4%	2.0%	0.0%	3.5%	16.6%	1.7%	0.0%	4.6%	11.6%	8.5%	0.0%	3.4%	20.2%	5.8%	0.0%		
Begin Peak Hour:	**16:45**																	
Peak Interval:	**17:00**																	
Peak Hour Vol:	**73**	**293**	**25**	**0**	**54**	**257**	**25**	**0**	**64**	**184**	**122**	**0**	**48**	**315**	**86**	**0**	**1546**	
Percent:	4.7%	19.0%	1.6%	0.0%	3.5%	16.6%	1.6%	0.0%	4.1%	11.9%	7.9%	0.0%	3.1%	20.4%	5.6%	0.0%		
Intvl Vol:	23	79	9	0	12	63	10	0	21	45	37	0	13	81	15	0	408	
Peak Factor:																	**0.9473**	
High Interval:	17:00				17:30				17:15				16:45					
High Intvl Vol:	23	79	9	0	16	74	8	0	20	52	32	0	7	75	35	0		
Peak Factor:				0.8806				0.8571				0.8894				0.9594		

Turning Movement Count Report
KH1111UA.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND MCKINLEY AVE				WESTBOUND LOUISE AVE				NORTHBOUND MC KINLEY AVE				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	7	89	4	0	33	9	4	0	5	60	86	0	6	37	4	0	344	
7:15 AM	3	28	5	0	16	83	6	0	55	21	33	0	7	53	28	0	338	
7:30 AM	4	7	7	0	5	123	10	0	41	28	7	0	8	60	36	0	336	
7:45 AM	12	11	4	0	6	93	7	0	26	8	3	0	9	73	28	0	280	1298
8:00 AM	12	11	8	0	4	90	8	0	36	6	1	0	3	48	25	0	252	1206
8:15 AM	7	2	5	0	8	72	5	0	27	7	2	0	5	63	16	0	219	1087
8:30 AM	7	8	6	0	1	100	3	0	27	6	0	0	6	55	31	0	250	1001
8:45 AM	5	12	7	0	3	52	2	0	28	5	2	0	8	57	35	0	216	937
Approach Total	271				743				520				701				2235	
Grand Total	57	168	46	0	76	622	45	0	245	141	134	0	52	446	203	0	2235	
Approach %	21.0%	62.0%	17.0%	0.0%	10.2%	83.7%	6.1%	0.0%	47.1%	27.1%	25.8%	0.0%	7.4%	63.6%	29.0%	0.0%		
Total %	2.6%	7.5%	2.1%	0.0%	3.4%	27.8%	2.0%	0.0%	11.0%	6.3%	6.0%	0.0%	2.3%	20.0%	9.1%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:00**																	
Peak Hour Vol:	**26**	**135**	**20**	**0**	**60**	**308**	**27**	**0**	**127**	**117**	**129**	**0**	**30**	**223**	**96**	**0**	**1298**	
Percent:	2.0%	10.4%	1.5%	0.0%	4.6%	23.7%	2.1%	0.0%	9.8%	9.0%	9.9%	0.0%	2.3%	17.2%	7.4%	0.0%		
Intvl Vol:	7	89	4	0	33	9	4	0	5	60	86	0	6	37	4	0	344	
Peak Factor:																	**0.9433**	
High Interval:	7:00				7:30				7:00				7:45					
High Intvl Vol:	7	89	4	0	5	123	10	0	5	60	86	0	9	73	28	0		
Peak Factor:				0.4525				0.7156				0.6175				0.7932		

Turning Movement Count Report
KH1111UP.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND MC KINLEY AVE				WESTBOUND LOUISE AVE				NORTHBOUND MCKINLEY AVE				EASTBOUND LOUISE AVE				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	11	16	3	0	7	102	9	0	50	9	12	0	11	104	66	0	400	
4:15 PM	7	15	3	0	2	70	5	0	65	9	2	0	7	108	63	0	356	
4:30 PM	6	11	6	0	4	78	15	0	39	14	4	0	6	118	47	0	348	
4:45 PM	4	15	6	0	5	89	8	0	33	19	6	0	4	87	59	0	335	1439
5:00 PM	4	18	6	0	2	109	3	0	77	19	7	0	10	92	54	0	401	1440
5:15 PM	3	11	8	0	1	92	5	0	60	6	4	0	6	101	51	0	348	1432
5:30 PM	3	15	1	0	0	87	5	0	62	17	4	0	7	110	46	0	357	1441
5:45 PM	3	13	3	0	1	79	4	0	36	8	1	0	4	102	37	0	291	1397
Approach Total	191				782				563				1300				2836	
Grand Total	41	114	36	0	22	706	54	0	422	101	40	0	55	822	423	0	2836	
Approach %	21.5%	59.7%	18.8%	0.0%	2.8%	90.3%	6.9%	0.0%	75.0%	17.9%	7.1%	0.0%	4.2%	63.2%	32.5%	0.0%		
Total %	1.4%	4.0%	1.3%	0.0%	0.8%	24.9%	1.9%	0.0%	14.9%	3.6%	1.4%	0.0%	1.9%	29.0%	14.9%	0.0%		
Begin Peak Hour:	**16:45**																	
Peak Interval:	**17:00**																	
Peak Hour Vol:	**14**	**59**	**21**	**0**	**8**	**377**	**21**	**0**	**232**	**61**	**21**	**0**	**27**	**390**	**210**	**0**	**1441**	
Percent:	1.0%	4.1%	1.5%	0.0%	0.6%	26.2%	1.5%	0.0%	16.1%	4.2%	1.5%	0.0%	1.9%	27.1%	14.6%	0.0%		
Intvl Vol:	4	18	6	0	2	109	3	0	77	19	7	0	10	92	54	0	401	
Peak Factor:																	**0.8984**	
High Interval:	17:00				17:00				17:00				17:30					
High Intvl Vol:	4	18	6	0	2	109	3	0	77	19	7	0	7	110	46	0		
Peak Factor:				0.8393				0.8904				0.7621				0.9617		

Turning Movement Count Report
KH1112UA.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 07:00 AM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT				WESTBOUND LATHRUP				NORTHBOUND AIRPORT				EASTBOUND LATHRUP				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
7:00 AM	28	20	4	0	19	64	19	0	15	33	4	0	10	64	12	0	292	
7:15 AM	14	23	8	0	11	68	26	0	16	51	9	0	8	41	7	0	282	
7:30 AM	7	23	5	0	12	57	26	0	21	49	8	0	6	43	8	0	265	
7:45 AM	3	32	6	0	10	47	15	0	9	33	9	0	5	24	8	0	201	1040
8:00 AM	5	18	7	0	14	57	20	0	13	36	8	0	10	19	6	0	213	961
8:15 AM	12	33	9	0	10	52	10	0	19	31	6	0	11	59	15	0	267	946
8:30 AM	18	47	2	0	16	55	21	0	11	29	6	0	5	64	8	0	282	963
8:45 AM	10	22	4	0	6	43	7	0	11	32	16	0	10	41	8	0	210	972
Approach Total	360				685				475				492				2012	
Grand Total	97	218	45	0	98	443	144	0	115	294	66	0	65	355	72	0	2012	
Approach %	26.9%	60.6%	12.5%	0.0%	14.3%	64.7%	21.0%	0.0%	24.2%	61.9%	13.9%	0.0%	13.2%	72.2%	14.6%	0.0%		
Total %	4.8%	10.8%	2.2%	0.0%	4.9%	22.0%	7.2%	0.0%	5.7%	14.6%	3.3%	0.0%	3.2%	17.6%	3.6%	0.0%		
Begin Peak Hour:	**7:00**																	
Peak Interval:	**7:00**																	
Peak Hour Vol:	**52**	**98**	**23**	**0**	**52**	**236**	**86**	**0**	**61**	**166**	**30**	**0**	**29**	**172**	**35**	**0**	**1040**	
Percent:	5.0%	9.4%	2.2%	0.0%	5.0%	22.7%	8.3%	0.0%	5.9%	16.0%	2.9%	0.0%	2.8%	16.5%	3.4%	0.0%		
Intvl Vol:	28	20	4	0	19	64	19	0	15	33	4	0	10	64	12	0	292	
Peak Factor:																	**0.8904**	
High Interval:	7:00				7:15				7:30				7:00					
High Intvl Vol:	28	20	4	0	11	68	26	0	21	49	8	0	10	64	12	0		
Peak Factor:				0.8317				0.8905				0.8237				0.6860		

Turning Movement Count Report
KH1112UP.xls

Traffic Research and Analysis, Inc.
961 Washington Blvd., Suite 603
Roseville, CA 95678

Start Date: 11/13/03
Start Time: 04:00 PM
Site Code: 0

Street Name	SOUTHBOUND AIRPORT AVE				WESTBOUND LATHRUP RD				NORTHBOUND AIRPORT AVE				EASTBOUND LATHRUP RD				INTSEC	HOUR
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	TOTAL	TOTAL
4:00 PM	24	55	13	0	5	52	22	0	15	35	14	0	20	113	15	0	383	
4:15 PM	34	37	11	0	13	69	13	0	8	29	32	0	12	127	23	0	408	
4:30 PM	32	51	10	0	11	74	23	0	9	23	15	0	8	106	22	0	384	
4:45 PM	34	66	11	0	5	78	18	0	11	35	17	0	4	98	27	0	404	1579
5:00 PM	36	38	9	0	2	56	14	0	11	41	17	0	9	117	26	0	376	1572
5:15 PM	37	62	10	0	12	61	9	0	8	25	6	0	7	90	17	0	344	1508
5:30 PM	16	59	12	0	11	60	11	0	8	34	10	0	14	120	23	0	378	1502
5:45 PM	23	50	5	0	5	37	6	0	5	20	8	0	7	89	17	0	272	1370
Approach Total	735				667				436				1111				2949	
Grand Total	236	418	81	0	64	487	116	0	75	242	119	0	81	860	170	0	2949	
Approach %	32.1%	56.9%	11.0%	0.0%	9.6%	73.0%	17.4%	0.0%	17.2%	55.5%	27.3%	0.0%	7.3%	77.4%	15.3%	0.0%		
Total %	8.0%	14.2%	2.7%	0.0%	2.2%	16.5%	3.9%	0.0%	2.5%	8.2%	4.0%	0.0%	2.7%	29.2%	5.8%	0.0%		
Begin Peak Hour:	**16:00**																	
Peak Interval:	**16:15**																	
Peak Hour Vol:	**124**	**209**	**45**	**0**	**34**	**273**	**76**	**0**	**43**	**122**	**78**	**0**	**44**	**444**	**87**	**0**	**1579**	
Percent:	7.9%	13.2%	2.8%	0.0%	2.2%	17.3%	4.8%	0.0%	2.7%	7.7%	4.9%	0.0%	2.8%	28.1%	5.5%	0.0%		
Intvl Vol:	34	37	11	0	13	69	13	0	8	29	32	0	12	127	23	0	408	
Peak Factor:																	**0.9675**	
High Interval:	16:45				16:30				16:15				16:15					
High Intvl Vol:	34	66	11	0	11	74	23	0	8	29	32	0	12	127	23	0		
Peak Factor:				0.8514				0.8866				0.8804				0.8873		

Truck Volume Data

City of Manteca - Assieh Industrial Development EIR

Corridor: Louise Avenue
Location: w/o Airport Way
Date: 11/5/2003 - 11/13/2003

Time	Wednesday 11/5				Thursday 11/6				Friday 11/7				Monday 11/10				Wednesday 11/12				Weekday Average						
	Total		Trucks		Total		Trucks		Total		Trucks		Total		Trucks		Total		Trucks		Total			Trucks			% Trucks
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB+WB	EB	WB	EB+WB	
0:00	60	33	2	1	65	36	4	2	72	44	3	4	44	12	2	0	55	27	3	1	59	30	89	3	2	5	5.6%
1:00	47	19	1	1	46	16	2	1	39	21	3	7	21	12	2	1	44	4	0	1	39	14	53	2	2	4	7.5%
2:00	38	26	1	1	41	25	6	1	30	31	4	3	24	16	2	1	23	4	4	0	31	20	51	3	1	4	7.8%
3:00	34	71	6	3	35	74	7	0	46	62	11	3	26	46	8	3	32	14	8	1	35	53	88	8	2	10	11.4%
4:00	44	225	11	5	35	203	4	9	31	187	5	3	25	151	5	4	29	53	6	1	33	164	197	6	4	10	5.1%
5:00	65	393	1	8	77	377	5	2	62	354	4	4	75	263	1	2	66	275	5	4	69	332	401	3	4	7	1.7%
6:00	142	414	9	9	136	403	7	11	129	350	6	14	121	310	7	9	136	257	10	10	133	347	480	8	11	19	4.0%
7:00	276	447	22	15	246	413	15	10	276	433	19	8	215	401	14	10	246	304	6	10	252	400	652	15	11	26	4.0%
8:00	320	386	14	15	250	330	14	10	305	359	9	4	252	326	9	11	315	265	8	13	288	333	621	11	11	22	3.5%
9:00	277	335	14	13	279	260	16	12	244	342	5	8	262	312	15	18	277	286	18	10	268	307	575	14	12	26	4.5%
10:00	289	286	12	13	278	295	11	9	308	303	22	13	310	280	14	10	282	250	12	17	293	283	576	14	12	26	4.5%
11:00	392	355	19	15	324	294	13	13	345	299	17	9	367	331	18	12	327	250	16	11	351	306	657	17	12	29	4.4%
12:00	446	417	20	12	369	366	17	26	404	366	17	9	376	353	15	9	375	308	12	5	394	362	756	16	12	28	3.7%
13:00	433	376	19	22	378	324	26	12	294	341	12	8	381	334	16	14	383	303	11	10	374	336	710	17	13	30	4.2%
14:00	454	437	22	19	422	339	22	8	365	363	19	6	435	349	17	9	416	282	11	8	418	354	772	18	10	28	3.6%
15:00	471	389	21	13	458	339	13	9	500	415	15	11	510	381	25	10	460	340	15	14	480	373	853	18	11	29	3.4%
16:00	521	384	11	10	490	369	18	4	444	356	16	7	483	336	16	2	504	287	14	4	488	346	834	15	5	20	2.4%
17:00	428	354	4	4	423	375	11	5	491	396	9	6	454	334	7	5	482	258	7	6	456	343	799	8	5	13	1.6%
18:00	428	228	7	3	371	257	8	4	448	282	8	2	366	244	8	4	442	210	9	5	411	244	655	8	4	12	1.8%
19:00	298	211	6	2	293	186	4	3	296	220	4	3	263	185	4	6	275	138	10	3	285	188	473	6	3	9	1.9%
20:00	231	181	2	2	225	162	2	2	228	199	3	1	212	157	5	5	201	106	5	0	219	161	380	3	2	5	1.3%
21:00	171	167	6	2	177	135	6	3	193	163	5	4	158	130	1	4	170	79	5	2	174	135	309	5	3	8	2.6%
22:00	111	98	2	1	112	80	2	2	155	135	5	2	116	81	4	0	130	48	5	0	125	88	213	4	1	5	2.3%
23:00	94	50	2	4	95	51	1	2	160	83	3	0	97	58	4	1	106	34	1	1	110	55	165	2	2	4	2.4%

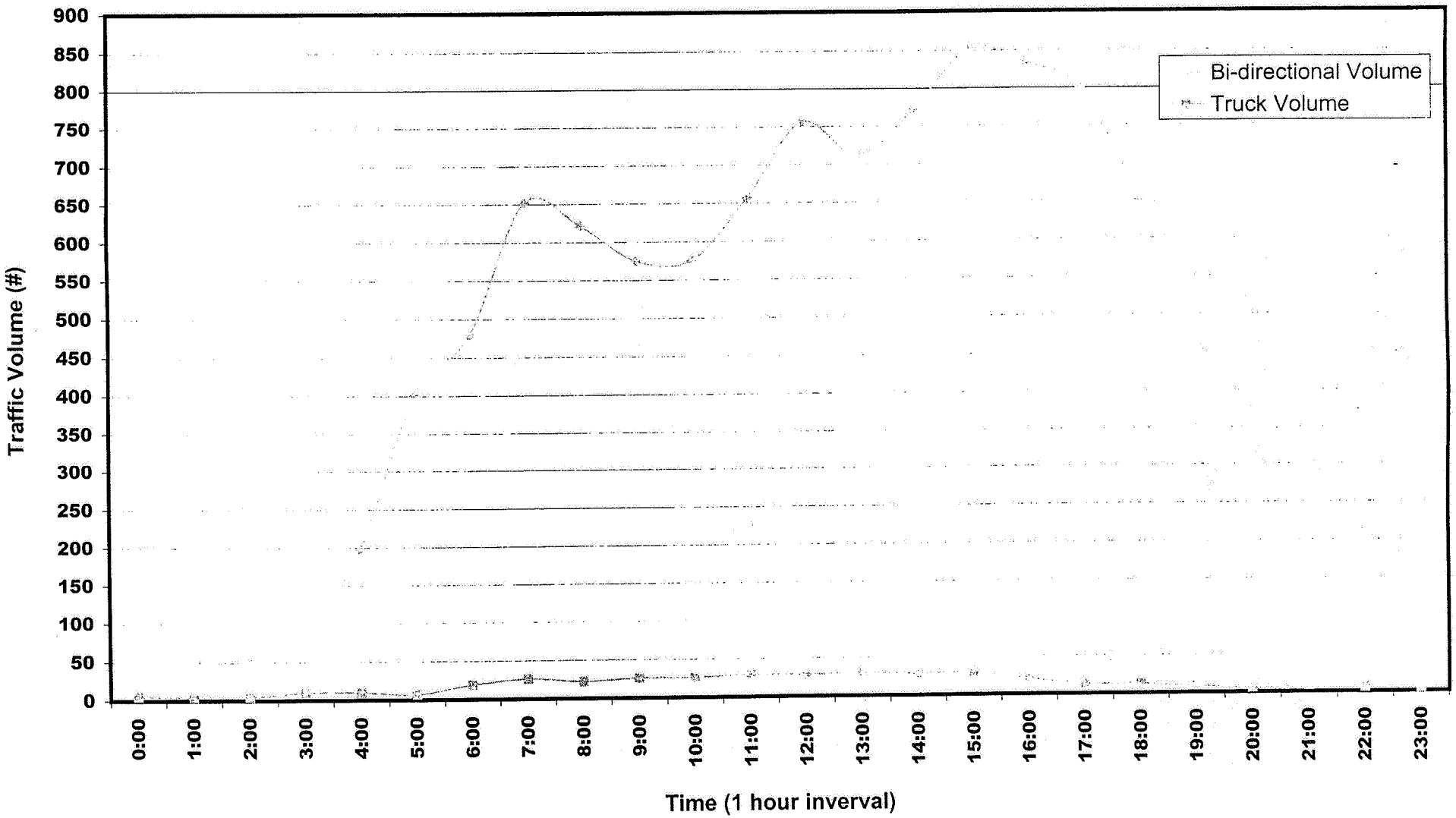
City of Manteca - Assieh Industrial Development EIR

Average Daily Traffic (ADT) Volume and Truck Traffic Volume

November 2003

Louise Avenue

(w/o Airport Way Intersection)



TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

*** Wed 05 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	60	0	52	6	0	0	0	0	0	2	0	0	0	0	45.6	52
0100	47	0	39	7	0	0	0	0	0	1	0	0	0	0	47.2	53
0200	38	1	30	6	0	0	0	0	0	1	0	0	0	0	47.6	51
0300	34	0	24	4	0	0	1	0	0	5	0	0	0	0	43.6	49
0400	44	1	28	4	0	0	0	0	0	11	0	0	0	0	43.6	52
0500	65	0	52	12	0	0	0	0	0	1	0	0	0	0	45.8	48
0600	142	0	108	20	1	4	1	0	0	8	0	0	0	0	43.1	49
0700	276	1	213	35	0	5	4	0	2	14	0	2	0	0	43.5	49
0800	320	0	262	38	0	6	3	0	1	9	0	1	0	0	42.9	48
0900	277	0	219	40	0	4	3	0	1	9	0	1	0	0	42.2	47
1000	289	1	224	49	0	3	3	0	3	5	0	0	1	0	41.8	46
1100	392	1	305	55	1	11	3	0	2	13	0	1	0	0	41.5	47
1200	446	1	359	61	2	3	4	0	4	11	0	1	0	0	42.4	46
1300	433	2	336	69	0	7	4	0	3	9	0	2	1	0	42.1	47
1400	454	0	352	74	2	4	3	0	2	15	0	2	0	0	41.3	46
1500	471	2	378	66	1	3	4	0	3	13	0	0	1	0	40.5	45
1600	521	1	424	75	1	9	3	0	0	7	0	1	0	0	38.4	45
1700	428	1	355	64	0	4	1	0	0	3	0	0	0	0	40.3	45
1800	428	0	353	65	0	3	1	0	1	5	0	0	0	0	42.3	47
1900	298	0	248	43	0	1	0	0	1	5	0	0	0	0	44.0	48
2000	231	1	200	27	0	1	0	0	0	2	0	0	0	0	45.0	50
2100	171	0	145	18	1	1	1	0	0	5	0	0	0	0	46.0	50
2200	111	0	101	8	0	0	0	0	1	1	0	0	0	0	46.7	51
2300	94	0	80	11	0	1	1	0	0	1	0	0	0	0	45.5	49
Tot.	**6070**	**13**	**4887**	**857**	**9**	**70**	**40**	**0**	**24**	**156**	**0**	**11**	**3**	**0**	**42.2**	**47**

Peak Step: 1600, Volume at Peak Step: 521
AM Peak Step: 1100, Volume at AM Peak Step: 392
PM Peak Step: 1600, Volume at PM Peak Step: 521

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

* Thu 06 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	65	0	52	9	0	0	0	0	0	4	0	0	0	0	46.2	51
0100	46	0	34	10	0	0	0	0	0	2	0	0	0	0	45.1	51
0200	41	0	31	4	0	0	1	0	0	5	0	0	0	0	42.8	53
0300	35	0	22	6	0	0	0	0	0	7	0	0	0	0	43.3	49
0400	35	2	23	5	0	1	0	0	0	4	0	0	0	0	41.7	48
0500	77	1	61	10	0	0	4	0	0	1	0	0	0	0	44.6	50
0600	136	0	100	26	1	2	0	0	1	5	0	1	0	0	43.2	49
0700	246	1	201	25	1	3	2	0	1	11	0	1	0	0	42.8	49
0800	250	0	206	27	0	3	1	0	1	12	0	0	0	0	43.6	48
0900	279	1	209	47	0	6	3	0	3	9	0	1	0	0	41.3	47
1000	278	0	219	45	0	3	1	0	3	7	0	0	0	0	42.9	47
1100	324	1	250	56	0	4	3	0	2	7	0	1	0	0	41.6	46
1200	369	0	293	55	1	3	1	0	2	14	0	0	0	0	41.2	47
1300	378	2	293	50	1	6	5	0	2	19	0	0	0	0	40.6	46
1400	422	0	331	65	0	4	5	0	2	13	0	2	0	0	41.8	47
1500	458	1	358	71	3	12	1	0	0	11	0	1	0	0	39.5	46
1600	490	1	385	77	2	7	2	0	2	14	0	0	0	0	39.1	44
1700	423	0	332	78	1	1	2	0	3	6	0	0	0	0	41.2	46
1800	371	1	298	59	0	5	1	0	0	7	0	0	0	0	42.8	47
1900	293	0	248	38	0	3	1	0	0	3	0	0	0	0	43.6	48
2000	225	2	194	26	0	1	0	0	0	2	0	0	0	0	44.8	49
2100	177	0	151	20	0	0	0	0	0	6	0	0	0	0	45.1	50
2200	112	0	98	12	0	0	0	0	0	2	0	0	0	0	45.4	49
2300	95	0	86	8	0	0	1	0	0	0	0	0	0	0	45.5	49
Tot.	**5625**	**13**	**4475**	**829**	**10**	**64**	**34**	**0**	**22**	**171**	**0**	**7**	**0**	**0**	**42.0**	**47**

Peak Step: 1600, Volume at Peak Step: 490
AM Peak Step: 1100, Volume at AM Peak Step: 324
PM Peak Step: 1600, Volume at PM Peak Step: 490

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

* Fri 07 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	72	0	60	9	0	0	0	0	0	3	0	0	0	0	45.2	52
0100	39	0	31	4	0	1	0	0	0	3	0	0	0	0	43.3	48
0200	30	0	23	3	0	0	1	0	0	3	0	0	0	0	43.7	48
0300	46	0	28	7	0	0	0	0	0	11	0	0	0	0	40.7	48
0400	31	0	19	7	0	0	1	0	0	4	0	0	0	0	44.2	51
0500	62	0	47	10	0	1	2	0	1	1	0	0	0	0	43.9	47
0600	129	0	104	18	0	1	3	0	0	2	0	1	0	0	44.5	50
0700	276	0	219	34	1	3	5	0	1	10	0	3	0	0	41.4	47
0800	305	0	255	36	0	5	2	0	0	7	0	0	0	0	44.1	48
0900	244	1	195	39	0	4	1	0	1	3	0	0	0	0	44.1	49
1000	308	0	234	50	0	2	1	0	2	19	0	0	0	0	41.4	46
1100	345	0	268	53	0	7	2	0	1	14	0	0	0	0	42.2	48
1200	404	0	323	54	1	9	3	0	2	12	0	0	0	0	41.5	46
1300	294	1	215	57	0	9	2	0	1	9	0	0	0	0	41.8	46
1400	365	2	270	66	3	5	1	0	1	17	0	0	0	0	41.6	47
1500	500	0	399	76	1	9	1	0	1	13	0	0	0	0	38.4	44
1600	444	4	350	62	5	7	4	0	1	11	0	0	0	0	31.3	42
1700	491	0	392	86	1	3	2	0	2	4	0	1	0	0	39.5	44
1800	448	0	381	56	1	2	0	0	2	6	0	0	0	0	41.7	46
1900	296	0	261	30	1	0	0	0	1	3	0	0	0	0	43.5	48
2000	228	0	196	29	0	0	1	0	0	2	0	0	0	0	44.4	49
2100	193	0	173	13	0	2	1	0	1	3	0	0	0	0	44.8	49
2200	155	0	130	18	0	2	1	0	0	4	0	0	0	0	45.8	50
2300	160	2	137	18	0	0	1	0	0	2	0	0	0	0	45.3	49
Tot.	**5865**	**10**	**4710**	**835**	**14**	**72**	**35**	**0**	**18**	**166**	**0**	**5**	**0**	**0**	**41.3**	**47**

Peak Step: 1500, Volume at Peak Step: 500
AM Peak Step: 1100, Volume at AM Peak Step: 345
PM Peak Step: 1500, Volume at PM Peak Step: 500

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

* Sat 08 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	73	0	65	5	0	0	1	0	0	2	0	0	0	0	47.5	53
0100	62	0	52	7	0	0	2	0	0	1	0	0	0	0	42.1	48
0200	42	0	30	9	0	0	0	0	0	3	0	0	0	0	39.9	46
0300	44	0	35	6	0	0	0	0	0	3	0	0	0	0	41.7	47
0400	33	0	20	6	0	1	0	0	0	6	0	0	0	0	41.8	50
0500	40	0	26	11	0	0	0	0	0	3	0	0	0	0	43.9	47
0600	66	0	48	12	0	0	2	0	0	4	0	0	0	0	46.8	53
0700	140	0	116	20	0	1	1	0	0	2	0	0	0	0	47.3	52
0800	192	0	148	35	0	2	3	0	0	4	0	0	0	0	45.4	51
0900	283	2	231	42	1	2	1	0	0	4	0	0	0	0	44.6	49
1000	327	1	262	59	0	4	0	0	0	1	0	0	0	0	43.4	48
1100	395	0	332	53	1	4	0	0	2	3	0	0	0	0	42.9	47
1200	363	2	290	60	0	3	0	0	3	5	0	0	0	0	43.2	47
1300	352	2	287	56	0	4	2	0	0	1	0	0	0	0	43.7	48
1400	343	1	279	51	0	1	0	0	2	9	0	0	0	0	43.1	48
1500	325	1	263	46	0	6	0	0	0	9	0	0	0	0	42.5	48
1600	349	0	278	65	0	2	0	0	1	3	0	0	0	0	42.9	47
1700	361	1	308	44	0	1	2	0	0	5	0	0	0	0	42.5	46
1800	274	1	216	56	0	0	0	0	1	0	0	0	0	0	44.3	48
1900	262	1	216	41	0	2	0	0	1	1	0	0	0	0	43.5	47
2000	168	0	154	10	0	1	0	0	0	3	0	0	0	0	42.2	46
2100	182	0	152	27	0	1	0	0	0	2	0	0	0	0	41.7	46
2200	150	0	129	18	0	1	1	0	0	1	0	0	0	0	43.8	48
2300	121	0	105	15	0	0	1	0	0	0	0	0	0	0	44.6	49
Tot.	**4947**	**12**	**4042**	**754**	**2**	**36**	**16**	**0**	**10**	**75**	**0**	**0**	**0**	**0**	**43.5**	**48**

Peak Step: 1100, Volume at Peak Step: 395
AM Peak Step: 1100, Volume at AM Peak Step: 395
PM Peak Step: 1200, Volume at PM Peak Step: 363

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

* Sun 09 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	52	0	43	8	0	1	0	0	0	0	0	0	0	0	44.7	49
0100	40	1	35	3	0	1	0	0	0	0	0	0	0	0	43.8	48
0200	34	0	31	3	0	0	0	0	0	0	0	0	0	0	48.4	51
0300	28	0	23	4	0	0	0	0	0	1	0	0	0	0	48.3	52
0400	24	0	19	3	0	0	0	0	0	2	0	0	0	0	43.4	50
0500	26	0	23	3	0	0	0	0	0	0	0	0	0	0	48.4	53
0600	48	0	40	7	0	1	0	0	0	0	0	0	0	0	46.6	53
0700	71	0	52	17	0	2	0	0	0	0	0	0	0	0	46.0	51
0800	110	0	89	15	0	4	0	0	0	2	0	0	0	0	44.9	50
0900	237	0	198	37	0	1	0	0	1	0	0	0	0	0	43.3	48
1000	218	0	180	32	0	1	2	0	0	3	0	0	0	0	43.6	48
1100	238	0	202	33	0	2	0	0	0	1	0	0	0	0	43.7	48
1200	294	0	244	43	1	2	0	0	1	2	0	0	0	1	44.7	49
1300	319	0	268	44	0	3	0	0	2	2	0	0	0	0	45.0	49
1400	268	1	225	35	0	1	0	0	0	6	0	0	0	0	44.5	50
1500	325	1	261	50	0	2	0	0	0	11	0	0	0	0	43.3	49
1600	272	0	223	42	0	1	0	0	1	5	0	0	0	0	44.5	49
1700	268	1	231	33	0	1	0	0	1	1	0	0	0	0	45.2	49
1800	239	1	203	31	0	1	0	0	2	1	0	0	0	0	44.2	49
1900	225	0	190	29	0	3	0	0	0	3	0	0	0	0	44.5	50
2000	160	1	139	15	0	1	0	0	0	4	0	0	0	0	46.8	52
2100	113	0	92	19	0	0	0	0	0	2	0	0	0	0	47.2	51
2200	106	0	94	6	0	0	0	0	0	6	0	0	0	0	45.5	53
2300	71	0	58	12	0	0	0	0	0	1	0	0	0	0	46.8	51
Tot.	**3786**	**6**	**3163**	**524**	**1**	**28**	**2**	**0**	**8**	**53**	**0**	**0**	**0**	**1**	**44.7**	**50**

Peak Step: 1500, Volume at Peak Step: 325
AM Peak Step: 1100, Volume at AM Peak Step: 238
PM Peak Step: 1500, Volume at PM Peak Step: 325

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

*** Mon 10 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	44	0	37	5	0	0	0	0	1	1	0	0	0	0	47.4	52
0100	21	0	17	2	0	0	0	0	0	2	0	0	0	0	45.9	50
0200	24	0	18	4	0	0	0	0	0	2	0	0	0	0	45.2	51
0300	26	0	15	2	0	1	0	0	0	8	0	0	0	0	45.0	52
0400	25	0	16	4	0	0	0	0	1	4	0	0	0	0	45.4	55
0500	75	2	62	9	0	1	0	0	0	1	0	0	0	0	45.5	52
0600	121	1	91	20	0	2	0	0	1	5	0	1	0	0	44.6	51
0700	215	0	167	29	1	4	4	0	0	9	0	1	0	0	44.2	51
0800	252	0	195	45	1	2	3	0	1	5	0	0	0	0	45.7	51
0900	262	0	194	49	1	3	1	0	1	11	0	2	0	0	44.4	49
1000	310	1	233	58	0	4	3	0	3	8	0	0	0	0	44.2	49
1100	367	2	275	63	2	7	5	0	2	10	0	1	0	0	43.4	49
1200	376	3	271	79	1	7	4	0	2	9	0	0	0	0	41.7	48
1300	381	2	286	70	3	4	1	0	1	14	0	0	0	0	43.5	48
1400	435	1	334	74	2	6	2	0	2	13	0	1	0	0	42.6	48
1500	510	2	388	81	2	12	3	0	0	20	0	2	0	0	40.9	47
1600	483	2	388	69	1	7	2	0	2	11	0	1	0	0	42.6	48
1700	454	1	375	67	0	4	0	0	0	6	0	1	0	0	41.8	46
1800	366	1	305	48	0	4	1	0	1	6	0	0	0	0	44.4	50
1900	263	2	217	38	0	2	0	0	1	3	0	0	0	0	45.2	50
2000	212	1	182	24	0	0	0	0	0	5	0	0	0	0	45.8	51
2100	158	1	139	17	0	0	0	0	0	1	0	0	0	0	47.0	51
2200	116	1	98	13	0	0	1	0	0	3	0	0	0	0	46.1	51
2300	97	1	76	16	0	0	0	0	0	4	0	0	0	0	48.4	54
Tot.	**5593**	**24**	**4379**	**886**	**14**	**70**	**30**	**0**	**19**	**161**	**0**	**10**	**0**	**0**	**43.6**	**49**

Peak Step: 1500, Volume at Peak Step: 510
AM Peak Step: 1100, Volume at AM Peak Step: 367
PM Peak Step: 1500, Volume at PM Peak Step: 510

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

* Tue 11 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	47	1	36	6	0	0	1	0	0	3	0	0	0	0	45.7	50
0100	43	0	34	6	0	0	1	0	0	2	0	0	0	0	46.7	52
0200	26	0	19	4	0	0	1	0	0	2	0	0	0	0	49.0	57
0300	43	0	30	5	0	0	0	0	0	8	0	0	0	0	45.8	54
0400	45	0	26	7	0	1	2	0	0	9	0	0	0	0	46.2	52
0500	58	0	44	11	0	1	0	0	0	2	0	0	0	0	46.5	51
0600	112	0	81	19	1	2	1	0	2	5	0	1	0	0	45.4	50
0700	157	0	107	32	0	6	3	0	2	6	0	1	0	0	45.8	50
0800	182	0	140	31	1	3	1	0	0	6	0	0	0	0	45.9	51
0900	197	0	145	32	0	5	5	0	1	9	0	0	0	0	44.7	51
1000	239	1	170	50	0	5	2	0	1	10	0	0	0	0	45.2	50
1100	267	2	200	50	0	4	1	0	4	6	0	0	0	0	44.1	49
1200	230	0	164	44	0	3	2	0	4	12	0	1	0	0	44.8	50
1300	350	1	249	73	0	5	1	0	2	18	0	1	0	0	42.6	48
1400	418	2	315	69	0	8	1	0	1	22	0	0	0	0	43.9	49
1500	465	2	356	78	1	5	3	0	3	15	0	2	0	0	43.0	48
1600	480	3	367	79	0	7	7	0	1	16	0	0	0	0	41.8	47
1700	429	3	340	67	0	4	2	0	4	9	0	0	0	0	41.9	48
1800	341	0	291	43	0	3	0	0	2	2	0	0	0	0	45.0	49
1900	319	1	263	48	0	1	2	0	1	3	0	0	0	0	44.8	49
2000	225	1	184	33	0	2	0	0	0	5	0	0	0	0	45.7	50
2100	149	0	124	15	0	0	2	0	0	8	0	0	0	0	46.0	51
2200	110	0	98	11	0	0	0	0	0	1	0	0	0	0	46.6	51
2300	122	1	101	18	0	1	1	0	0	0	0	0	0	0	46.9	50
Tot.	**5054**	**18**	**3884**	**831**	**3**	**66**	**39**	**0**	**28**	**179**	**0**	**6**	**0**	**0**	**44.2**	**49**

Peak Step: 1600, Volume at Peak Step: 480
AM Peak Step: 1100, Volume at AM Peak Step: 267
PM Peak Step: 1600, Volume at PM Peak Step: 480

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
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DATASETS:

Site: [KH11001] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: East (bound)

*** Wed 12 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	55	0	45	7	0	0	1	0	0	2	0	0	0	0	47.3	54
0100	44	0	40	4	0	0	0	0	0	0	0	0	0	0	50.7	58
0200	23	1	17	1	0	0	0	0	0	4	0	0	0	0	46.6	55
0300	32	0	16	7	0	1	0	0	0	8	0	0	0	0	43.0	50
0400	29	0	21	2	0	0	0	0	0	6	0	0	0	0	45.6	53
0500	66	0	52	9	0	0	0	0	0	5	0	0	0	0	45.4	50
0600	136	0	105	19	1	1	2	0	0	8	0	0	0	0	45.2	51
0700	246	0	185	51	0	4	0	0	1	5	0	0	0	0	46.0	52
0800	315	1	253	48	1	4	4	0	0	4	0	0	0	0	46.3	51
0900	277	0	209	44	0	6	4	0	2	12	0	0	0	0	43.8	49
1000	282	0	209	58	0	3	3	0	1	8	0	0	0	0	44.8	50
1100	327	0	246	56	1	8	4	0	1	11	0	0	0	0	44.1	49
1200	375	1	284	68	0	10	1	0	0	11	0	0	0	0	43.2	48
1300	383	4	289	67	3	9	2	0	2	7	0	0	0	0	41.2	48
1400	416	2	334	57	3	9	1	0	2	8	0	0	0	0	42.0	47
1500	460	1	344	85	4	11	4	0	0	11	0	0	0	0	41.0	46
1600	504	1	404	74	0	9	3	0	0	11	0	2	0	0	39.5	47
1700	482	1	388	81	1	4	3	0	0	3	0	1	0	0	41.4	46
1800	442	1	363	66	0	3	3	0	1	5	0	0	0	0	42.8	47
1900	275	0	233	29	0	3	2	0	0	8	0	0	0	0	45.3	50
2000	201	2	159	29	1	5	1	0	1	3	0	0	0	0	45.4	50
2100	170	0	141	22	0	2	1	0	0	4	0	0	0	0	45.8	51
2200	130	0	114	10	0	1	0	0	0	5	0	0	0	0	45.7	49
2300	106	1	90	14	0	0	0	0	0	1	0	0	0	0	46.9	51
Tot.	**5776**	**16**	**4541**	**908**	**15**	**93**	**39**	**0**	**11**	**150**	**0**	**3**	**0**	**0**	**43.3**	**49**

Peak Step: 1600, Volume at Peak Step: 504
AM Peak Step: 1100, Volume at AM Peak Step: 327
PM Peak Step: 1600, Volume at PM Peak Step: 504

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
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DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

* Wed 05 Nov 2003

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	33	0	29	2	0	1	1	0	0	0	0	0	0	0	48.7	53
0100	19	0	16	2	0	0	0	0	0	1	0	0	0	0	49.1	56
0200	26	0	16	8	0	1	1	0	0	0	0	0	0	0	50.1	53
0300	71	1	56	11	0	0	0	0	2	1	0	0	0	0	49.1	53
0400	225	1	178	35	0	6	2	0	1	0	0	2	0	0	49.7	55
0500	393	1	305	74	0	5	6	0	1	1	0	0	0	0	48.8	53
0600	414	1	311	75	8	10	2	0	2	4	0	1	0	0	47.0	52
0700	447	1	346	71	3	11	5	0	3	7	0	0	0	0	46.7	51
0800	386	1	288	70	1	11	4	0	1	9	1	0	0	0	47.4	52
0900	335	1	246	63	0	12	1	0	2	7	0	2	1	0	43.9	50
1000	286	0	221	41	1	10	2	0	3	7	0	1	0	0	46.0	51
1100	355	0	270	63	0	9	2	0	3	7	0	1	0	0	46.1	51
1200	417	2	328	63	3	9	6	0	1	3	0	1	1	0	46.1	52
1300	376	0	273	73	1	7	3	0	6	13	0	0	0	0	46.8	52
1400	437	0	336	72	0	10	4	0	8	5	0	1	1	0	47.1	52
1500	389	3	305	62	0	6	2	0	2	9	0	0	0	0	46.9	53
1600	384	0	293	74	0	7	0	0	1	9	0	0	0	0	46.2	51
1700	354	2	292	53	0	3	1	0	0	3	0	0	0	0	46.4	52
1800	228	1	182	38	0	4	0	0	0	3	0	0	0	0	46.9	51
1900	211	0	165	40	0	4	0	0	0	2	0	0	0	0	47.0	52
2000	181	0	153	25	0	1	0	0	0	2	0	0	0	0	48.0	52
2100	167	0	146	17	1	1	1	0	0	1	0	0	0	0	47.7	53
2200	98	0	87	10	0	0	0	0	1	0	0	0	0	0	48.2	53
2300	50	1	37	8	0	0	0	0	2	1	1	0	0	0	46.8	54
Tot.	**6282**	**16**	**4879**	**1050**	**18**	**128**	**43**	**0**	**39**	**95**	**2**	**9**	**3**	**0**	**46.9**	**52**

Peak Step: 0700, Volume at Peak Step: 447
AM Peak Step: 0700, Volume at AM Peak Step: 447
PM Peak Step: 1400, Volume at PM Peak Step: 437

TRAFFIC RESEARCH & ANALYSIS, INC.
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DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Thu 06 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	36	0	31	3	0	0	2	0	0	0	0	0	0	0	48.2	53
0100	16	0	11	4	0	0	1	0	0	0	0	0	0	0	48.8	55
0200	25	1	16	5	0	2	0	0	0	1	0	0	0	0	46.6	54
0300	74	1	56	15	0	2	0	0	0	0	0	0	0	0	50.2	55
0400	203	1	144	44	0	5	1	0	0	8	0	0	0	0	48.4	53
0500	377	2	288	81	0	4	1	0	0	0	1	0	0	0	48.6	53
0600	403	0	293	82	9	8	1	0	0	10	0	0	0	0	46.7	51
0700	413	2	320	64	4	13	2	0	1	5	0	2	0	0	47.3	52
0800	330	0	250	59	0	11	1	0	3	4	0	1	0	1	47.5	52
0900	260	1	188	54	1	4	1	0	1	10	0	0	0	0	46.2	52
1000	295	0	232	50	0	4	1	0	2	6	0	0	0	0	47.3	53
1100	294	0	215	58	2	6	1	0	3	9	0	0	0	0	46.0	51
1200	366	1	269	65	1	4	9	0	4	12	0	1	0	0	46.2	51
1300	324	1	250	53	2	6	4	0	1	7	0	0	0	0	46.8	52
1400	339	0	259	62	0	10	2	0	0	4	0	2	0	0	47.5	52
1500	339	1	268	54	1	6	3	0	2	4	0	0	0	0	46.7	52
1600	369	1	300	57	1	6	2	0	0	2	0	0	0	0	46.0	52
1700	375	0	302	63	0	5	1	0	1	3	0	0	0	0	46.5	52
1800	257	0	222	28	0	3	1	0	1	2	0	0	0	0	46.4	51
1900	186	0	153	28	0	2	1	0	0	2	0	0	0	0	47.9	53
2000	162	0	135	23	0	2	0	0	0	2	0	0	0	0	46.8	51
2100	135	0	118	14	0	0	0	0	0	3	0	0	0	0	48.0	53
2200	80	0	70	8	0	0	0	0	1	1	0	0	0	0	47.8	52
2300	51	0	41	8	0	0	0	0	0	2	0	0	0	0	46.7	50
Tot.	**5709**	**12**	**4431**	**982**	**21**	**103**	**35**	**0**	**20**	**97**	**1**	**6**	**0**	**1**	**47.0**	**52**

Peak Step: 0700, Volume at Peak Step: 413
AM Peak Step: 0700, Volume at AM Peak Step: 413
PM Peak Step: 1700, Volume at PM Peak Step: 375

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
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DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Fri 07 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	44	0	37	2	0	1	0	0	0	4	0	0	0	0	46.1	53
0100	21	0	10	4	0	0	1	0	1	5	0	0	0	0	45.1	54
0200	31	0	15	13	0	0	1	0	1	1	0	0	0	0	47.8	52
0300	62	0	48	9	0	2	0	0	0	2	0	0	0	1	47.2	52
0400	187	1	136	44	0	3	1	0	0	2	0	0	0	0	47.9	53
0500	354	0	263	81	0	6	1	0	1	2	0	0	0	0	48.1	52
0600	350	0	269	55	8	4	1	0	2	10	0	1	0	0	46.4	52
0700	433	1	339	73	3	9	5	0	0	3	0	0	0	0	44.9	50
0800	359	0	287	61	0	7	0	0	1	3	0	0	0	0	48.3	53
0900	342	1	255	66	1	11	0	0	1	6	1	0	0	0	47.1	52
1000	303	0	223	58	0	9	0	0	3	10	0	0	0	0	46.5	52
1100	299	0	228	55	1	6	1	0	2	6	0	0	0	0	47.4	52
1200	366	1	297	56	0	3	1	0	2	5	0	1	0	0	46.5	52
1300	341	1	257	66	3	6	4	0	1	3	0	0	0	0	47.1	51
1400	363	0	277	71	0	9	1	0	2	3	0	0	0	0	47.1	53
1500	415	3	326	71	0	4	3	0	1	7	0	0	0	0	44.1	50
1600	356	0	290	57	0	2	3	0	0	4	0	0	0	0	44.4	49
1700	396	0	329	51	3	7	1	0	0	5	0	0	0	0	43.5	50
1800	282	0	240	38	0	2	1	0	0	1	0	0	0	0	46.2	51
1900	220	1	174	38	2	2	1	0	1	1	0	0	0	0	46.4	52
2000	199	0	173	25	0	0	0	0	0	1	0	0	0	0	47.6	53
2100	163	0	136	22	0	1	2	0	1	1	0	0	0	0	46.7	52
2200	135	1	113	18	0	1	0	0	0	2	0	0	0	0	46.2	51
2300	83	0	72	11	0	0	0	0	0	0	0	0	0	0	47.0	53
Tot.	**6104**	**10**	**4794**	**1045**	**21**	**95**	**28**	**0**	**20**	**87**	**1**	**2**	**0**	**1**	**46.3**	**52**

Peak Step: 0700, Volume at Peak Step: 433
AM Peak Step: 0700, Volume at AM Peak Step: 433
PM Peak Step: 1500, Volume at PM Peak Step: 415

TRAFFIC RESEARCH & ANALYSIS, INC.
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DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Sat 08 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	63	0	52	9	0	0	0	0	0	2	0	0	0	0	49.1	55
0100	41	0	32	4	0	0	1	0	0	4	0	0	0	0	42.6	49
0200	37	0	28	6	0	1	0	0	1	1	0	0	0	0	42.0	48
0300	25	0	17	3	0	2	1	0	0	2	0	0	0	0	44.7	50
0400	60	0	43	15	0	0	0	0	0	2	0	0	0	0	51.2	56
0500	120	0	88	28	0	3	0	0	1	0	0	0	0	0	49.5	55
0600	101	0	68	27	1	1	0	0	3	1	0	0	0	0	52.5	59
0700	121	0	88	28	0	1	0	0	4	0	0	0	0	0	50.0	54
0800	205	0	155	41	0	4	0	0	1	3	0	1	0	0	50.5	56
0900	256	0	200	47	0	2	0	0	1	6	0	0	0	0	48.7	53
1000	271	1	206	55	0	5	1	0	1	2	0	0	0	0	46.7	52
1100	323	0	246	68	0	5	1	0	0	3	0	0	0	0	48.5	53
1200	358	0	290	57	1	6	2	0	1	1	0	0	0	0	47.8	52
1300	339	1	262	69	0	5	1	0	0	1	0	0	0	0	48.0	53
1400	286	0	222	61	0	3	0	0	0	0	0	0	0	0	48.4	53
1500	273	0	219	47	0	2	1	0	0	4	0	0	0	0	46.3	51
1600	281	0	220	56	0	4	0	0	0	1	0	0	0	0	48.8	54
1700	311	0	260	44	0	2	1	0	0	4	0	0	0	0	47.6	52
1800	258	0	215	38	0	4	0	0	0	1	0	0	0	0	48.2	53
1900	203	0	169	33	0	0	0	0	1	0	0	0	0	0	46.3	52
2000	138	0	114	23	0	1	0	0	0	0	0	0	0	0	44.3	50
2100	107	0	79	23	0	3	0	0	0	2	0	0	0	0	45.7	49
2200	55	0	42	11	0	0	1	0	0	1	0	0	0	0	46.4	51
2300	28	0	21	3	0	2	0	0	0	2	0	0	0	0	46.8	53
Tot.	**4260**	**2**	**3336**	**796**	**2**	**56**	**10**	**0**	**14**	**43**	**0**	**1**	**0**	**0**	**47.9**	**53**

Peak Step: 1200, Volume at Peak Step: 358
AM Peak Step: 1100, Volume at AM Peak Step: 323
PM Peak Step: 1200, Volume at PM Peak Step: 358

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Sun 09 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	17	0	14	2	0	1	0	0	0	0	0	0	0	0	41.2	47
0100	13	0	9	4	0	0	0	0	0	0	0	0	0	0	49.2	56
0200	8	0	5	1	0	0	1	0	0	1	0	0	0	0	49.1	-
0300	3	0	2	1	0	0	0	0	0	0	0	0	0	0	48.6	-
0400	17	0	11	5	0	0	0	0	1	0	0	0	0	0	46.2	50
0500	40	0	29	8	0	2	1	0	0	0	0	0	0	0	51.1	56
0600	38	0	30	8	0	0	0	0	0	0	0	0	0	0	51.3	57
0700	21	0	14	6	0	1	0	0	0	0	0	0	0	0	44.7	50
0800	50	0	33	14	0	1	0	0	0	2	0	0	0	0	47.9	54
0900	68	0	49	15	0	2	0	0	1	1	0	0	0	0	49.3	57
1000	118	1	93	20	0	2	1	0	0	1	0	0	0	0	48.3	54
1100	112	0	84	26	1	1	0	0	0	0	0	0	0	0	48.3	53
1200	161	0	136	23	0	1	0	0	0	1	0	0	0	0	49.0	54
1300	191	0	152	33	1	2	0	0	0	3	0	0	0	0	48.0	52
1400	211	0	156	49	0	3	1	0	2	0	0	0	0	0	49.0	54
1500	180	1	147	29	0	1	0	0	0	2	0	0	0	0	47.6	53
1600	175	1	137	28	0	2	1	0	0	6	0	0	0	0	46.4	51
1700	228	0	190	36	0	2	0	0	0	0	0	0	0	0	46.9	52
1800	199	0	155	42	0	1	0	0	0	1	0	0	0	0	46.9	52
1900	157	0	133	21	1	2	0	0	0	0	0	0	0	0	46.7	51
2000	133	0	112	18	0	2	0	0	0	1	0	0	0	0	47.7	53
2100	110	0	97	10	0	0	0	0	0	3	0	0	0	0	48.2	54
2200	86	0	74	12	0	0	0	0	0	0	0	0	0	0	47.2	54
2300	33	0	24	8	0	0	0	0	0	1	0	0	0	0	46.9	53
Tot.	**2369**	**3**	**1886**	**419**	**3**	**26**	**5**	**0**	**4**	**23**	**0**	**0**	**0**	**0**	**47.8**	**53**

Peak Step: 1700, Volume at Peak Step: 228
AM Peak Step: 1000, Volume at AM Peak Step: 118
PM Peak Step: 1700, Volume at PM Peak Step: 228

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Mon 10 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	12	0	10	2	0	0	0	0	0	0	0	0	0	0	47.4	48
0100	12	0	9	2	0	0	0	0	0	1	0	0	0	0	48.7	51
0200	16	0	11	4	0	0	1	0	0	0	0	0	0	0	50.7	55
0300	46	0	32	9	0	2	1	0	0	2	0	0	0	0	50.4	55
0400	151	0	106	35	0	6	0	0	0	4	0	0	0	0	47.4	53
0500	263	0	195	63	0	3	0	0	0	2	0	0	0	0	47.8	53
0600	310	0	224	65	7	5	1	0	0	8	0	0	0	0	47.0	52
0700	401	1	307	72	2	9	3	0	1	4	0	2	0	0	47.2	53
0800	326	0	263	51	0	1	2	0	4	5	0	0	0	0	47.5	52
0900	312	0	233	56	0	5	1	0	3	12	0	2	0	0	46.7	52
1000	280	1	212	52	3	2	2	0	3	5	0	0	0	0	45.6	51
1100	331	0	260	55	1	3	2	0	1	9	0	0	0	0	45.4	51
1200	353	1	280	55	0	8	2	0	1	6	0	0	0	0	45.9	51
1300	334	0	249	66	1	4	2	0	2	9	0	1	0	0	46.1	51
1400	349	0	282	54	0	4	4	0	1	4	0	0	0	0	46.5	52
1500	381	1	293	70	1	6	4	0	0	5	0	0	0	1	46.2	51
1600	336	1	277	50	0	6	0	0	0	2	0	0	0	0	46.7	52
1700	334	0	268	53	0	8	1	0	1	3	0	0	0	0	46.1	51
1800	244	0	211	27	0	2	0	0	1	2	0	1	0	0	47.0	51
1900	185	2	147	26	0	4	1	0	0	5	0	0	0	0	46.5	51
2000	157	1	126	25	0	0	1	0	0	4	0	0	0	0	46.7	51
2100	130	0	121	5	0	0	0	0	1	3	0	0	0	0	46.9	52
2200	81	0	70	11	0	0	0	0	0	0	0	0	0	0	47.0	52
2300	58	0	53	4	0	0	0	0	0	1	0	0	0	0	47.5	53
Tot.	**5402**	**8**	**4239**	**912**	**15**	**78**	**28**	**0**	**19**	**96**	**0**	**6**	**0**	**1**	**46.6**	**52**

Peak Step: 0700, Volume at Peak Step: 401
AM Peak Step: 0700, Volume at AM Peak Step: 401
PM Peak Step: 1500, Volume at PM Peak Step: 381

TRAFFIC RESEARCH & ANALYSIS, INC.
961 WASHINGTON BLVD., #603
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PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Tue 11 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	38	0	34	4	0	0	0	0	0	0	0	0	0	0	47.1	51
0100	18	1	13	4	0	0	0	0	0	0	0	0	0	0	45.4	51
0200	28	0	13	11	0	0	0	0	0	3	0	1	0	0	49.4	57
0300	61	0	40	14	0	1	1	0	0	5	0	0	0	0	48.3	53
0400	121	0	84	29	0	3	1	0	0	4	0	0	0	0	48.6	52
0500	278	0	200	68	0	5	0	0	2	3	0	0	0	0	49.3	54
0600	297	0	222	60	0	4	1	0	3	7	0	0	0	0	47.4	52
0700	285	0	209	62	1	5	2	0	1	3	0	2	0	0	49.0	55
0800	203	0	152	40	0	4	1	0	1	5	0	0	0	0	48.2	54
0900	243	0	182	39	1	4	0	0	2	12	0	3	0	0	45.9	52
1000	226	0	176	36	0	4	2	0	3	5	0	0	0	0	47.3	52
1100	283	2	211	55	0	3	5	0	1	5	0	1	0	0	47.5	53
1200	290	1	225	48	3	5	2	0	0	5	0	1	0	0	46.6	52
1300	240	3	182	44	0	7	2	0	0	2	0	0	0	0	47.3	53
1400	268	1	205	44	1	9	1	0	1	5	0	1	0	0	47.8	53
1500	265	3	199	49	0	7	2	0	1	4	0	0	0	0	48.2	53
1600	244	0	195	42	0	3	3	0	0	1	0	0	0	0	48.0	53
1700	294	2	241	42	0	5	3	0	0	1	0	0	0	0	46.8	52
1800	247	0	200	43	0	1	0	0	0	3	0	0	0	0	47.2	52
1900	157	0	127	23	0	3	0	0	1	3	0	0	0	0	47.7	53
2000	114	0	88	20	0	2	0	0	0	4	0	0	0	0	47.8	53
2100	106	1	92	13	0	0	0	0	0	0	0	0	0	0	49.7	57
2200	27	0	16	7	0	2	0	0	0	2	0	0	0	0	50.6	57
2300	38	0	27	10	0	1	0	0	0	0	0	0	0	0	50.6	57
Tot.	**4371**	**14**	**3333**	**807**	**6**	**78**	**26**	**0**	**16**	**82**	**0**	**9**	**0**	**0**	**47.7**	**53**

Peak Step: 0600, Volume at Peak Step: 297
AM Peak Step: 0600, Volume at AM Peak Step: 297
PM Peak Step: 1700, Volume at PM Peak Step: 294

TRAFFIC RESEARCH & ANALYSIS, INC.
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ROSEVILLE, CA 95678
PH: (916) 772-0872 FAX: (916) 772-4706

DATASETS:

Site: [KH11002] LOUISE AVE W/O AIRPORT WAY
Filter time: 00:00 Wed 05 Nov 2003 to 00:00 Thu 13 Nov 2003
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Direction: West (bound)

*** Wed 12 Nov 2003**

Time	Total	nCL 1	nCL 2	nCL 3	nCL 4	nCL 5	nCL 6	nCL 7	nCL 8	nCL 9	nCL10	nCL11	nCL12	nCL13	MSPD	V85
0000	27	0	25	1	0	0	0	0	0	1	0	0	0	0	48.1	53
0100	4	1	2	0	0	0	0	0	0	1	0	0	0	0	45.7	-
0200	4	0	2	2	0	0	0	0	0	0	0	0	0	0	49.0	-
0300	14	0	7	6	0	0	0	0	0	1	0	0	0	0	49.1	52
0400	53	1	42	9	0	0	0	0	0	1	0	0	0	0	46.9	53
0500	275	0	195	72	0	4	1	0	0	2	0	1	0	0	48.8	53
0600	257	0	179	56	8	4	3	0	0	7	0	0	0	0	46.9	51
0700	304	0	221	60	2	11	3	0	1	5	0	1	0	0	48.5	53
0800	265	0	182	58	2	10	2	0	0	11	0	0	0	0	47.8	53
0900	286	2	199	67	0	8	2	0	2	6	0	0	0	0	47.0	53
1000	250	1	174	50	1	7	2	0	3	12	0	0	0	0	45.9	51
1100	250	0	179	54	0	6	1	0	1	7	0	1	1	0	46.0	51
1200	308	0	240	53	2	8	2	0	0	3	0	0	0	0	46.0	51
1300	303	1	236	52	1	3	0	0	0	8	0	2	0	0	46.2	50
1400	282	0	200	63	3	8	3	0	0	5	0	0	0	0	45.7	51
1500	340	1	252	65	1	7	3	0	4	7	0	0	0	0	46.1	52
1600	287	0	227	54	0	2	2	0	1	0	0	1	0	0	46.0	51
1700	258	0	206	41	1	4	1	0	1	4	0	0	0	0	46.5	52
1800	210	0	168	33	0	4	0	0	0	5	0	0	0	0	46.4	52
1900	138	0	113	20	0	2	1	0	1	1	0	0	0	0	48.0	54
2000	106	0	85	21	0	0	0	0	0	0	0	0	0	0	48.3	54
2100	79	0	66	9	0	2	0	0	0	2	0	0	0	0	49.0	55
2200	48	0	40	7	0	1	0	0	0	0	0	0	0	0	49.7	54
2300	34	0	28	4	0	1	0	0	0	1	0	0	0	0	49.3	54
Tot.	**4382**	**7**	**3268**	**857**	**21**	**92**	**26**	**0**	**14**	**90**	**0**	**6**	**1**	**0**	**46.9**	**52**

Peak Step: 1500, Volume at Peak Step: 340
AM Peak Step: 0700, Volume at AM Peak Step: 304
PM Peak Step: 1500, Volume at PM Peak Step: 340

Trip Generation Calculations

Project Assieh Industrial Development EIR
Trip generation for Warehousing
Designed by M Mowery Date Job No.
Checked by J West Date Sheet No. 1 of 1

Kimley-Horn and Associates, Inc.

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 6th Edition, Average Rate Equations

Land Use Code - 150

Independent Variable - 1,000 Sq Ft

Number of Units (X) - 1404.7

T = Trip Ends

Peak Hour **Adjacent Street Traffic**

AM Peak
T = (X) * 0.45 Trip Ends Per 1,000 Sq Ft
T = 632 Trip Ends

Directional Distribution:
82% Entering 18% Exiting
518 Entering 114 Exiting

Peak Hour **Adjacent Street Traffic**

PM Peak
T = (X) * 0.51 Trip Ends Per 1,000 Sq Ft
T = 716 Trip Ends

Directional Distribution:
24% Entering 76% Exiting
172 Entering 544 Exiting

Weekday

Daily Weekday
T = (X) * 4.96 Trip Ends Per 1,000 Sq Ft
T = 6967 Trip Ends

Directional Distribution:
50% Entering 50% Exiting
3484 Entering 3484 Exiting

Non-Pass-By Trip Percentage

AM 100%
PM 100%

Non-Pass-By Trip Volumes

AM Peak	518 Entering	114 Exiting
PM Peak	172 Entering	544 Exiting

Note: Rounding may occur in calculations

Existing
(Synchro Software and HCS)

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*36*	*11*	*312*	*44*	*0*
Peak-Hour Factor, PHF	*0.78*	*0.78*	*0.78*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*46*	*14*	*371*	*52*	*0*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*216*	*7*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*257*	*8*	*3*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*371*					*268*	
C (m) (vph)		*1531*					*251*	
v/c		*0.24*					*1.07*	
95% queue length		*0.95*					*11.14*	
Control Delay		*8.1*					*119.0*	
LOS		*A*					*F*	
Approach Delay	--	--				*119.0*		
Approach LOS	--	--				*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*Lathrop Road & I-5 NB Ramps*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 NB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*4*	*243*	*0*	*0*	*350*	*381*
Peak-Hour Factor, PHF	*0.83*	*0.83*	*0.83*	*0.83*	*0.83*	*0.83*
Hourly Flow Rate, HFR	*4*	*292*	*0*	*0*	*421*	*459*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*11*	*0*	*127*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*15*	*0*	*184*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*			*LTR*				
v (vph)	*4*			*199*				
C (m) (vph)	*760*			*662*				
v/c	*0.01*			*0.30*				
95% queue length	*0.02*			*1.26*				
Control Delay	*9.8*			*12.8*				
LOS	*A*			*B*				
Approach Delay	--	--	*12.8*					
Approach LOS	--	--	*B*					

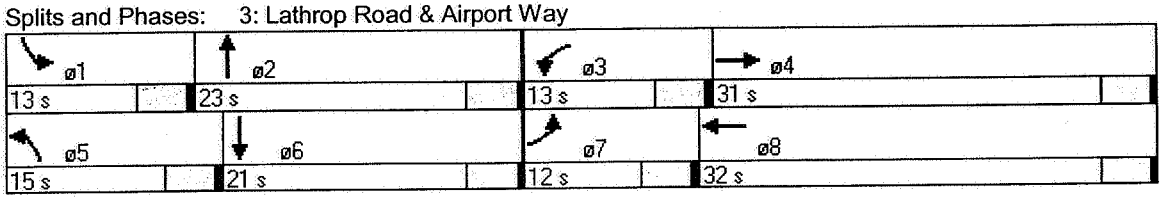
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1779	0	1736	1754	0	1736	1785	0	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1779	0	1736	1754	0	1736	1785	0	1736	1827	1553
Satd. Flow (RTOR)		14			25			11				28
Volume (vph)	29	172	35	52	236	86	61	166	30	52	98	23
Lane Group Flow (vph)	42	300	0	58	362	0	74	239	0	63	118	28
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	12.0	31.0	0.0	13.0	32.0	0.0	15.0	23.0	0.0	13.0	21.0	21.0
Act Effct Green (s)	7.8	15.1		8.0	17.4		8.5	19.7		8.1	19.3	19.3
Actuated g/C Ratio	0.14	0.29		0.15	0.34		0.16	0.40		0.15	0.39	0.39
v/c Ratio	0.17	0.56		0.22	0.59		0.27	0.33		0.24	0.17	0.04
Uniform Delay, d1	25.2	17.4		24.0	16.4		23.8	13.4		24.0	13.4	0.0
Delay	30.4	17.6		28.4	15.6		27.3	20.6		28.3	22.2	10.5
LOS	C	B		C	B		C	C		C	C	B
Approach Delay		19.2			17.3			22.2			22.5	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	13	88		18	75		23	69		20	35	0
Queue Length 95th (ft)	38	130		61	217		66	152		60	88	14
Internal Link Dist (ft)		2705			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		325
50th Bay Block Time %												
95th Bay Block Time %					18%							
Queuing Penalty (veh)					5							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 49.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 19.9
Intersection Capacity Utilization 46.2%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 3: Lathrop Road & Airport Way



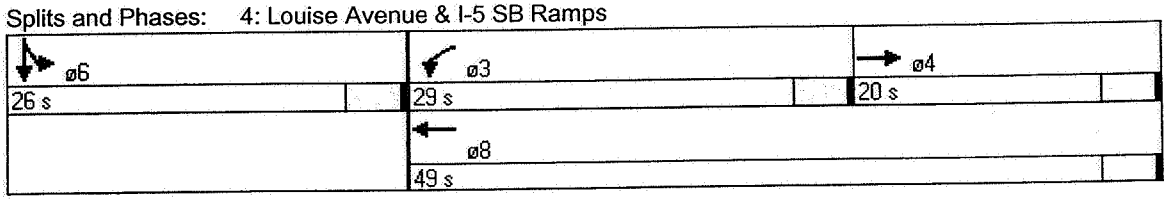
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1809	0	1736	1827	0	0	0	0	1736	1553	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1809	0	1736	1827	0	0	0	0	1736	1553	0
Satd. Flow (RTOR)		4									965	
Volume (vph)	0	40	3	392	46	0	0	0	0	305	0	8
Lane Group Flow (vph)	0	52	0	496	58	0	0	0	0	418	11	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	29.0	49.0	0.0	0.0	0.0	0.0	26.0	26.0	0.0
Act Effct Green (s)		7.3		20.0	25.8					18.1	18.1	
Actuated g/C Ratio		0.13		0.38	0.49					0.34	0.34	
v/c Ratio		0.22		0.76	0.07					0.71	0.01	
Uniform Delay, d1		22.0		15.0	6.5					15.7	0.0	
Delay		24.9		19.7	6.9					20.7	0.0	
LOS		C		B	A					C	A	
Approach Delay		24.9			18.4						20.2	
Approach LOS		C			B						C	
Queue Length 50th (ft)		18		167	10					146	0	
Queue Length 95th (ft)		44		240	21					189	0	
Internal Link Dist (ft)		108			1489			873			1479	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				2%								
95th Bay Block Time %				20%								
Queuing Penalty (veh)				6								

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 53.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 19.5
Intersection Capacity Utilization 64.0%

Intersection LOS: B
ICU Level of Service B

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



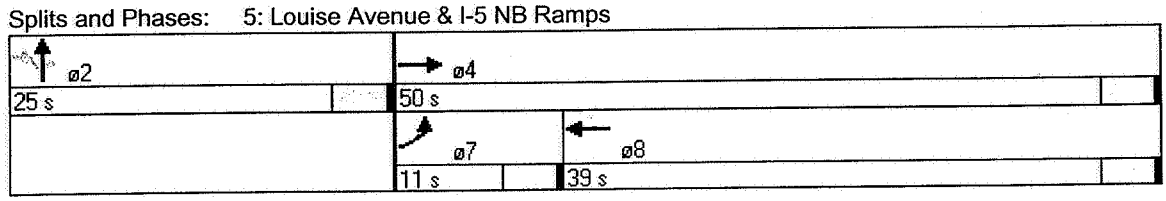
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1759	1553	0	0	0
Flt Permitted	0.950							0.963				
Satd. Flow (perm)	1736	3471	0	0	1827	1553	0	1759	1553	0	0	0
Satd. Flow (RTOR)						445			384			
Volume (vph)	4	340	0	0	399	338	17	5	280	0	0	0
Lane Group Flow (vph)	6	479	0	0	525	445	0	30	384	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	11.0	50.0	0.0	0.0	39.0	39.0	25.0	25.0	25.0	0.0	0.0	0.0
Act Effct Green (s)	6.2	18.0			16.9	16.9		8.3	8.3			
Actuated g/C Ratio	0.14	0.50			0.47	0.47		0.23	0.23			
v/c Ratio	0.02	0.27			0.61	0.46		0.07	0.59			
Uniform Delay, d1	18.3	4.1			8.1	0.0		11.8	0.0			
Delay	23.2	4.6			7.9	1.2		15.3	2.9			
LOS	C	A			A	A		B	A			
Approach Delay		4.8			4.8			3.8				
Approach LOS		A			A			A				
Queue Length 50th (ft)	1	16			41	0		3	0			
Queue Length 95th (ft)	10	42			184	18		24	21			
Internal Link Dist (ft)		1489			4043			683			1509	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 35.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 4.6
Intersection Capacity Utilization 44.2%

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps



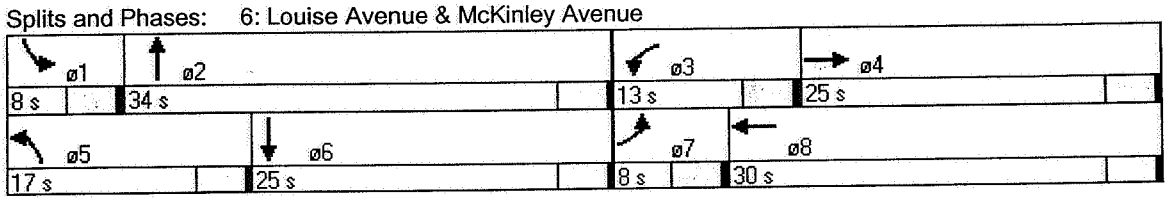
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	1553	1736	1805	0	1736	1683	0	1736	1792	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1827	1553	1736	1805	0	1736	1683	0	1736	1792	0
Satd. Flow (RTOR)			122		6			79			9	
Volume (vph)	30	223	96	60	308	27	127	117	129	26	135	20
Lane Group Flow (vph)	38	282	122	83	466	0	205	397	0	58	344	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	25.0	25.0	13.0	30.0	0.0	17.0	34.0	0.0	8.0	25.0	0.0
Act Effct Green (s)	4.6	17.4	17.4	8.3	22.1		11.4	24.5		4.6	16.9	
Actuated g/C Ratio	0.07	0.27	0.27	0.13	0.34		0.17	0.38		0.07	0.26	
v/c Ratio	0.32	0.57	0.24	0.38	0.75		0.69	0.58		0.50	0.72	
Uniform Delay, d1	32.0	20.8	0.0	28.9	19.6		28.4	13.2		32.3	21.4	
Delay	39.0	24.9	5.3	32.7	25.0		35.7	14.6		52.9	26.6	
LOS	D	C	A	C	C		D	B		D	C	
Approach Delay		20.7			26.2			21.8			30.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	19	120	0	38	202		96	122		29	151	
Queue Length 95th (ft)	43	170	27	64	232		109	116		32	101	
Internal Link Dist (ft)		1670			5286			3350			3407	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %		5%			30%			6%			15%	
95th Bay Block Time %		25%			35%			4%				
Queuing Penalty (veh)		6			27			10			4	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 64.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 24.5
Intersection Capacity Utilization 71.3%

Intersection LOS: C
ICU Level of Service C

Splits and Phases: 6: Louise Avenue & McKinley Avenue



ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*Louise Avenue & Airport Way*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Louise Avenue*

North/South Street: *Airport Way*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	27	158	53	70	281	33
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	103	148	29	24	157	78
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.83		0.83		0.82		0.93	
Flow Rate	285		461		340		276	
% Heavy Vehicles	4		4		4		4	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.1		0.2		0.4		0.1	
Prop. Right-Turns	0.2		0.1		0.1		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	8.05		8.05		8.05		8.05	

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.25		0.41		0.30		0.25	
hd, final value	8.05		8.05		8.05		8.05	
x, final value	0.64		0.96		0.76		0.62	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	6.1		6.1		6.1		6.1	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	417		474		430		413	
Delay	24.18		60.28		31.98		23.61	
LOS	C		F		D		C	
Approach: Delay	24.18		60.28		31.98		23.61	
LOS	C		F		D		C	
Intersection Delay	38.23							
Intersection LOS	E							

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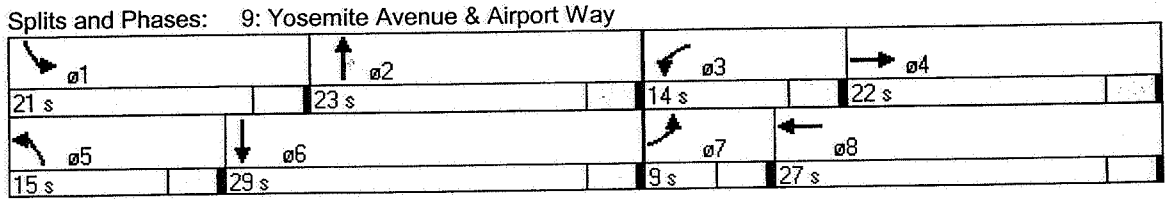
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3384	0	1736	3270	0	1736	1827	1553	1736	1790	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3384	0	1736	3270	0	1736	1827	1553	1736	1790	0
Satd. Flow (RTOR)		27			174				73		10	
Volume (vph)	11	242	48	75	248	156	87	159	66	151	191	29
Lane Group Flow (vph)	17	460	0	93	499	0	96	175	73	186	272	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	9.0	22.0	0.0	14.0	27.0	0.0	15.0	23.0	23.0	21.0	29.0	0.0
Act Effct Green (s)	5.8	13.0		8.3	18.0		8.6	11.7	11.7	11.2	17.1	
Actuated g/C Ratio	0.10	0.25		0.15	0.34		0.15	0.22	0.22	0.20	0.32	
v/c Ratio	0.10	0.54		0.37	0.41		0.37	0.43	0.18	0.52	0.46	
Uniform Delay, d1	27.8	17.0		25.3	9.5		25.2	18.5	0.0	22.5	15.4	
Delay	34.5	20.1		27.9	10.0		27.4	23.7	7.3	23.7	19.0	
LOS	C	C		C	B		C	C	A	C	B	
Approach Delay		20.6			12.8			21.2			20.9	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	6	74		31	37		32	58	0	61	85	
Queue Length 95th (ft)	19	93		77	91		88	132	28	125	153	
Internal Link Dist (ft)		3075			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100			250		
50th Bay Block Time %												
95th Bay Block Time %				26%	26%			24%				
Queuing Penalty (veh)				32	12			12				

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 53
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 18.3
Intersection Capacity Utilization 51.4%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 EB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 EB Ramps*
North/South Street: *Yosemite Avenue*
Intersection Orientation: *North-South*
Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*25*	*5*	*10*	*19*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.56*	*0.56*	*0.56*
Hourly Flow Rate, HFR	*0*	*27*	*5*	*17*	*33*	*0*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*76*	*3*	*5*
Peak-Hour Factor, PHF	*0.75*	*0.75*	*0.75*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*90*	*3*	*5*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LTR*	
v (vph)		*17*					*98*	
C (m) (vph)		*1567*					*890*	
v/c		*0.01*					*0.11*	
95% queue length		*0.03*					*0.37*	
Control Delay		*7.3*					*9.5*	
LOS		*A*					*A*	
Approach Delay	--	--				*9.5*		
Approach LOS	--	--				*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 WB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*24*	*72*	*0*	*0*	*19*	*126*
Peak-Hour Factor, PHF	*0.77*	*0.77*	*0.77*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR	*31*	*93*	*0*	*0*	*21*	*143*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*11*	*0*	*14*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*15*	*0*	*20*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LTR*				
v (vph)	*31*			*35*				
C (m) (vph)	*1402*			*840*				
v/c	*0.02*			*0.04*				
95% queue length	*0.07*			*0.13*				
Control Delay	*7.6*			*9.5*				
LOS	*A*			*A*				
Approach Delay	--	--	*9.5*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 EB Ramps & Airport Way*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 EB Ramps*	North/South Street: *Airport Way*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*238*	*67*	*91*	*176*	*0*
Peak-Hour Factor, PHF	*0.80*	*0.80*	*0.80*	*0.85*	*0.85*	*0.85*
Hourly Flow Rate, HFR	*0*	*297*	*83*	*107*	*207*	*0*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*101*	*2*	*45*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.76*	*0.76*	*0.76*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*132*	*2*	*59*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*107*					*193*	
C (m) (vph)		*1168*					*412*	
v/c		*0.09*					*0.47*	
95% queue length		*0.30*					*2.43*	
Control Delay		*8.4*					*21.2*	
LOS		*A*					*C*	
Approach Delay	--	--					*21.2*	
Approach LOS	--	--					*C*	

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 WB Ramps & Airport Way*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Airport Way*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*121*	*247*	*0*	*0*	*169*	*325*
Peak-Hour Factor, PHF	*0.81*	*0.81*	*0.81*	*0.87*	*0.87*	*0.87*
Hourly Flow Rate, HFR	*149*	*304*	*0*	*0*	*194*	*373*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*48*	*0*	*185*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*51*	*0*	*196*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*			*LTR*				
v (vph)	*149*			*247*				
C (m) (vph)	*995*			*507*				
v/c	*0.15*			*0.49*				
95% queue length	*0.53*			*2.64*				
Control Delay	*9.3*			*18.7*				
LOS	*A*			*C*				
Approach Delay	--	--	*18.7*					
Approach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*82*	*2*	*146*	*40*	*0*
Peak-Hour Factor, PHF	*0.72*	*0.72*	*0.72*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*113*	*2*	*156*	*43*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*421*	*2*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*452*	*2*	*3*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*156*					*457*	
C (m) (vph)		*1474*					*495*	
v/c		*0.11*					*0.92*	
95% queue length		*0.35*					*10.93*	
Control Delay		*7.7*					*52.6*	
LOS		*A*					*F*	
Approach Delay	--	--				*52.6*		
Approach LOS	--	--				*F*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*Lathrop Road & I-5 NB Ramps*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 NB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*13*	*486*	*0*	*0*	*177*	*283*
Peak-Hour Factor, PHF	*0.87*	*0.87*	*0.87*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*14*	*558*	*0*	*0*	*188*	*301*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*9*	*0*	*394*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.94*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*9*	*0*	*419*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

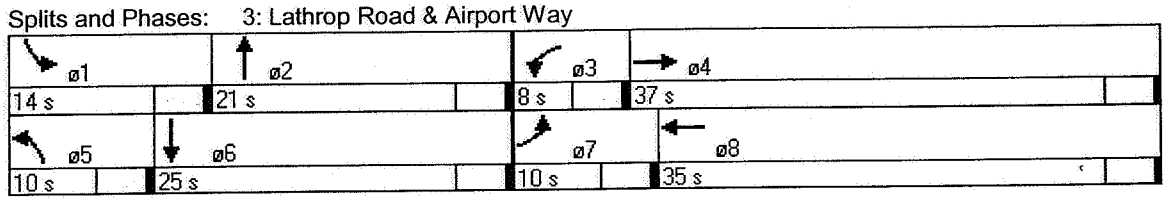
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*			*LTR*				
v (vph)	*14*			*428*				
C (m) (vph)	*1074*			*520*				
v/c	*0.01*			*0.82*				
95% queue length	*0.04*			*8.16*				
Control Delay	*8.4*			*36.5*				
LOS	*A*			*E*				
Approach Delay	--	--	*36.5*					
Approach LOS	--	--	*E*					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1816	0	1770	1801	0	1770	1753	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1816	0	1770	1801	0	1770	1753	0	1770	1863	1583
Satd. Flow (RTOR)		15			20			37				53
Volume (vph)	44	444	87	34	273	76	43	122	78	124	209	45
Lane Group Flow (vph)	49	597	0	38	392	0	49	228	0	146	246	53
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	10.0	37.0	0.0	8.0	35.0	0.0	10.0	21.0	0.0	14.0	25.0	25.0
Act Effct Green (s)	6.5	23.9		4.5	23.0		6.5	12.6		9.2	17.6	17.6
Actuated g/C Ratio	0.10	0.40		0.07	0.38		0.10	0.21		0.15	0.29	0.29
v/c Ratio	0.27	0.81		0.30	0.56		0.27	0.57		0.56	0.45	0.11
Uniform Delay, d1	29.1	17.0		29.9	14.8		29.1	17.9		26.9	18.4	0.0
Delay	33.9	19.9		36.8	16.4		33.9	22.5		35.1	22.3	7.5
LOS	C	B		D	B		C	C		D	C	A
Approach Delay		20.9			18.2			24.5			24.7	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	21	223		17	128		21	78		61	95	0
Queue Length 95th (ft)	56	#388		#53	223		56	152		#134	162	16
Internal Link Dist (ft)		2443			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		325
50th Bay Block Time %		16%										
95th Bay Block Time %		33%			19%							
Queuing Penalty (veh)		12			3							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 59.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 21.8 — Intersection LOS: C
Intersection Capacity Utilization 63.0% — ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

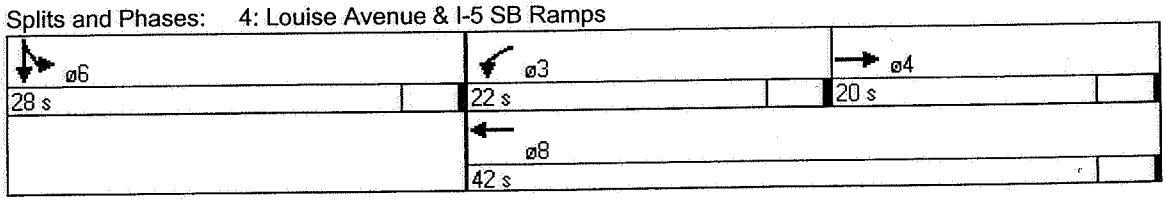


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1829	0	1770	1863	0	0	0	0	1770	1676	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1829	0	1770	1863	0	0	0	0	1770	1676	0
Satd. Flow (RTOR)		10									4	
Volume (vph)	0	57	9	342	52	0	0	0	0	400	2	3
Lane Group Flow (vph)	0	91	0	389	59	0	0	0	0	488	6	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	22.0	42.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Act Effct Green (s)		7.9		15.5	22.1					20.4	20.4	
Actuated g/C Ratio		0.14		0.30	0.43					0.40	0.40	
v/c Ratio		0.33		0.73	0.07					0.69	0.01	
Uniform Delay, d1		20.3		16.8	7.9					13.6	3.3	
Delay		21.6		23.6	8.2					17.7	9.8	
LOS		C		C	A					B	A	
Approach Delay		21.6			21.5						17.6	
Approach LOS		C			C						B	
Queue Length 50th (ft)		27		125	10					150	1	
Queue Length 95th (ft)		50		#265	26					236	0	
Internal Link Dist (ft)		108			1489			865			1467	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				190						300		
50th Bay Block Time %												
95th Bay Block Time %				29%								
Queuing Penalty (veh)				8								

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 51.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 19.7
Intersection LOS: B
Intersection Capacity Utilization 61.9%
ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps

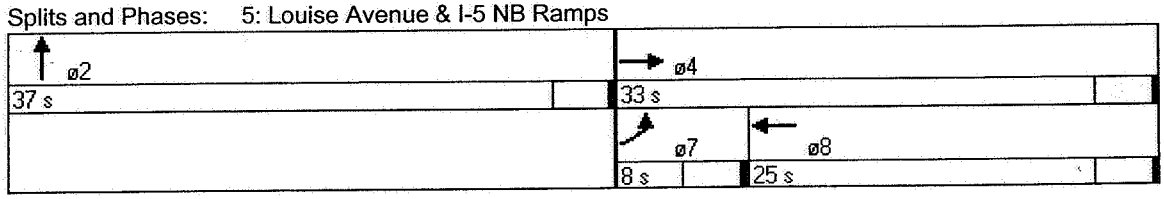


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	0	0	1863	1583	0	1801	1583	0	0	0
Flt Permitted	0.950							0.967				
Satd. Flow (perm)	1770	3539	0	0	1863	1583	0	1801	1583	0	0	0
Satd. Flow (RTOR)						540			215			
Volume (vph)	17	447	0	0	373	454	9	4	546	0	0	0
Lane Group Flow (vph)	20	514	0	0	444	540	0	16	682	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	8.0	33.0	0.0	0.0	25.0	25.0	37.0	37.0	37.0	0.0	0.0	0.0
Act Effct Green (s)	4.3	17.8			16.7	16.7		21.1	21.1			
Actuated g/C Ratio	0.08	0.37			0.35	0.35		0.44	0.44			
v/c Ratio	0.14	0.39			0.69	0.60		0.02	0.84			
Uniform Delay, d1	24.9	9.8			14.7	0.0		8.6	8.8			
Delay	30.5	12.2			20.0	2.3		8.8	10.9			
LOS	C	B			B	A		A	B			
Approach Delay		12.9			10.2			10.9				
Approach LOS		B			B			B				
Queue Length 50th (ft)	6	54			101	0		2	90			
Queue Length 95th (ft)	28	107			#278	47		11	211			
Internal Link Dist (ft)		1489			4055			679			1492	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %												
95th Bay Block Time %		10%										
Queuing Penalty (veh)		1										

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 48
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 63.1% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps



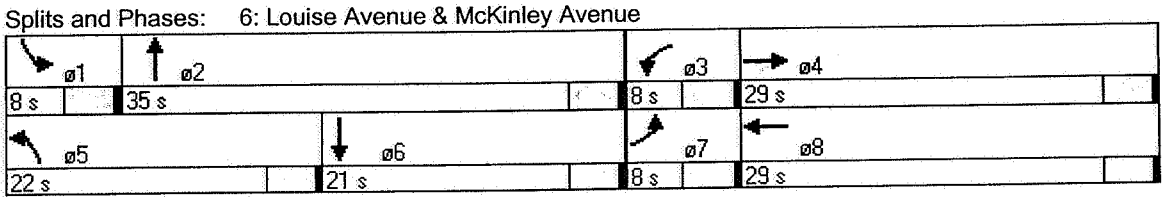
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1848	0	1770	1790	0	1770	1790	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1848	0	1770	1790	0	1770	1790	0
Satd. Flow (RTOR)			212		4			26			20	
Volume (vph)	27	390	210	8	377	21	232	61	21	14	59	21
Lane Group Flow (vph)	28	406	219	9	448	0	305	108	0	17	95	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	29.0	29.0	8.0	29.0	0.0	22.0	35.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	4.2	19.0	19.0	4.2	17.8		13.9	25.3		4.2	8.2	
Actuated g/C Ratio	0.07	0.34	0.34	0.07	0.32		0.25	0.46		0.07	0.15	
v/c Ratio	0.23	0.64	0.32	0.07	0.75		0.69	0.13		0.14	0.34	
Uniform Delay, d1	30.0	18.8	0.5	30.3	19.7		22.3	8.5		30.4	16.4	
Delay	32.6	16.7	3.2	34.0	19.3		24.1	10.3		34.1	21.7	
LOS	C	B	A	C	B		C	B		C	C	
Approach Delay		12.9			19.6			20.5			23.5	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	8	102	1	3	115		81	0		5	18	
Queue Length 95th (ft)	37	252	46	18	279		173	35		25	65	
Internal Link Dist (ft)		1668			5286			2621			2921	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %					7%							
95th Bay Block Time %		37%			39%		27%					
Queuing Penalty (veh)		5			2		14					

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 55.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 17.4
Intersection Capacity Utilization 54.0%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 6: Louise Avenue & McKinley Avenue



ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	Kimley-Horn and Associates
Agency/Co.	Manteca, CA
Date Performed	11/14/2003
Analysis Time Period	PM

Site Information

Intersection	Louise Avenue & Airport Way
Jurisdiction	
Analysis Year	Existing
Project ID	Assieh Industrial Development EIR

East/West Street: *Louise Avenue*

North/South Street: *Airport Way*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	48	315	86	54	257	25
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	64	184	22	73	293	25
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.96		0.86		0.89		0.88	
Flow Rate	467		389		301		442	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.1		0.2		0.2		0.2	
Prop. Right-Turns	0.2		0.1		0.1		0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	9.28		9.28		9.28		9.28	

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.42		0.35		0.27		0.39	
hd, final value	9.28		9.28		9.28		9.28	
x, final value	1.20		1.01		0.82		1.15	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	7.3		7.3		7.3		7.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	467		389		366		442	
Delay	142.41		80.27		45.43		123.81	
LOS	F		F		E		F	
Approach: Delay	142.41		80.27		45.43		123.81	
LOS	F		F		E		F	
Intersection Delay	103.89							
Intersection LOS	F							

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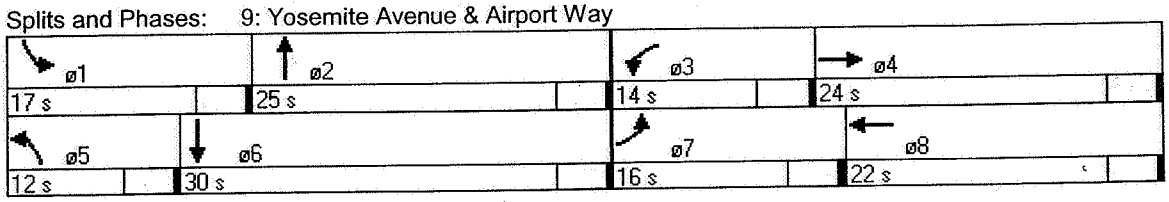
Version 4.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3419	0	1770	3345	0	1770	1863	1583	1770	1837	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3419	0	1770	3345	0	1770	1863	1583	1770	1837	0
Satd. Flow (RTOR)		45			136				170		7	
Volume (vph)	102	391	114	109	293	171	67	265	167	165	166	17
Lane Group Flow (vph)	136	673	0	122	521	0	68	270	170	183	203	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	16.0	24.0	0.0	14.0	22.0	0.0	12.0	25.0	25.0	17.0	30.0	0.0
Act Effct Green (s)	9.9	16.9		9.0	16.0		7.8	15.0	15.0	11.0	20.3	
Actuated g/C Ratio	0.15	0.27		0.14	0.26		0.12	0.24	0.24	0.17	0.32	
v/c Ratio	0.50	0.70		0.49	0.54		0.33	0.60	0.33	0.61	0.34	
Uniform Delay, d1	26.9	19.6		27.5	14.9		29.1	21.0	0.0	26.7	15.9	
Delay	30.4	22.6		31.6	17.8		33.1	25.3	4.7	30.9	19.0	
LOS	C	C		C	B		C	C	A	C	B	
Approach Delay		23.9			20.5			19.5			24.7	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	59	138		53	79		30	115	0	79	71	
Queue Length 95th (ft)	97	167		110	138		71	191	41	#164	128	
Internal Link Dist (ft)		2742			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100			250		
50th Bay Block Time %		23%			21%			17%				
95th Bay Block Time %	5%	32%		44%	44%			39%				
Queuing Penalty (veh)	8	37		57	40			19				

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 62.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.1 — Intersection LOS: C
Intersection Capacity Utilization 63.8% — ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*SR-120 EB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 EB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*17*	*6*	*11*	*7*	*0*
Peak-Hour Factor, PHF	*0.58*	*0.58*	*0.58*	*0.45*	*0.45*	*0.45*
Hourly Flow Rate, HFR	*0*	*29*	*10*	*24*	*15*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*171*	*1*	*10*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.63*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*271*	*1*	*15*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LTR*	
v (vph)		*24*					*287*	
C (m) (vph)		*1571*					*895*	
v/c		*0.02*					*0.32*	
95% queue length		*0.05*					*1.39*	
Control Delay		*7.3*					*10.9*	
LOS		*A*					*B*	
Approach Delay	--	--					*10.9*	
Approach LOS	--	--					*B*	

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*SR-120 WB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*16*	*248*	*0*	*0*	*19*	*137*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.80*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*17*	*263*	*0*	*0*	*23*	*171*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*2*	*0*	*9*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*2*	*0*	*13*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LTR*				
v (vph)	*17*			*15*				
C (m) (vph)	*1379*			*746*				
v/c	*0.01*			*0.02*				
95% queue length	*0.04*			*0.06*				
Control Delay	*7.6*			*9.9*				
LOS	*A*			*A*				
Approach Delay	--	--	*9.9*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	Kimley-Horn and Associates
Agency/Co.	Manteca, CA
Date Performed	11/14/2003
Analysis Time Period	PM

Site Information

Intersection	SR-120 EB Ramps & Airport Way
Jurisdiction	
Analysis Year	Existing
Project ID	Assieh Industrial Development EIR

East/West Street: *SR-120 EB Ramps* | North/South Street: *Airport Way*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	201	79	140	241	0
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86
Hourly Flow Rate, HFR	0	209	82	162	280	0
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	375	0	139
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88
Hourly Flow Rate, HFR	0	0	0	426	0	157
Percent Heavy Vehicles	2	2	2	2	2	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	1	0
Configuration					LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L					LTR	
v (vph)		162					583	
C (m) (vph)		1271					345	
v/c		0.13					1.69	
95% queue length		0.44					35.85	
Control Delay		8.2					349.6	
LOS		A					F	
Approach Delay	--	--				349.6		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*SR-120 WB Ramps & Airport Way*
Jurisdiction	
Analysis Year	*Existing*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Airport Way*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

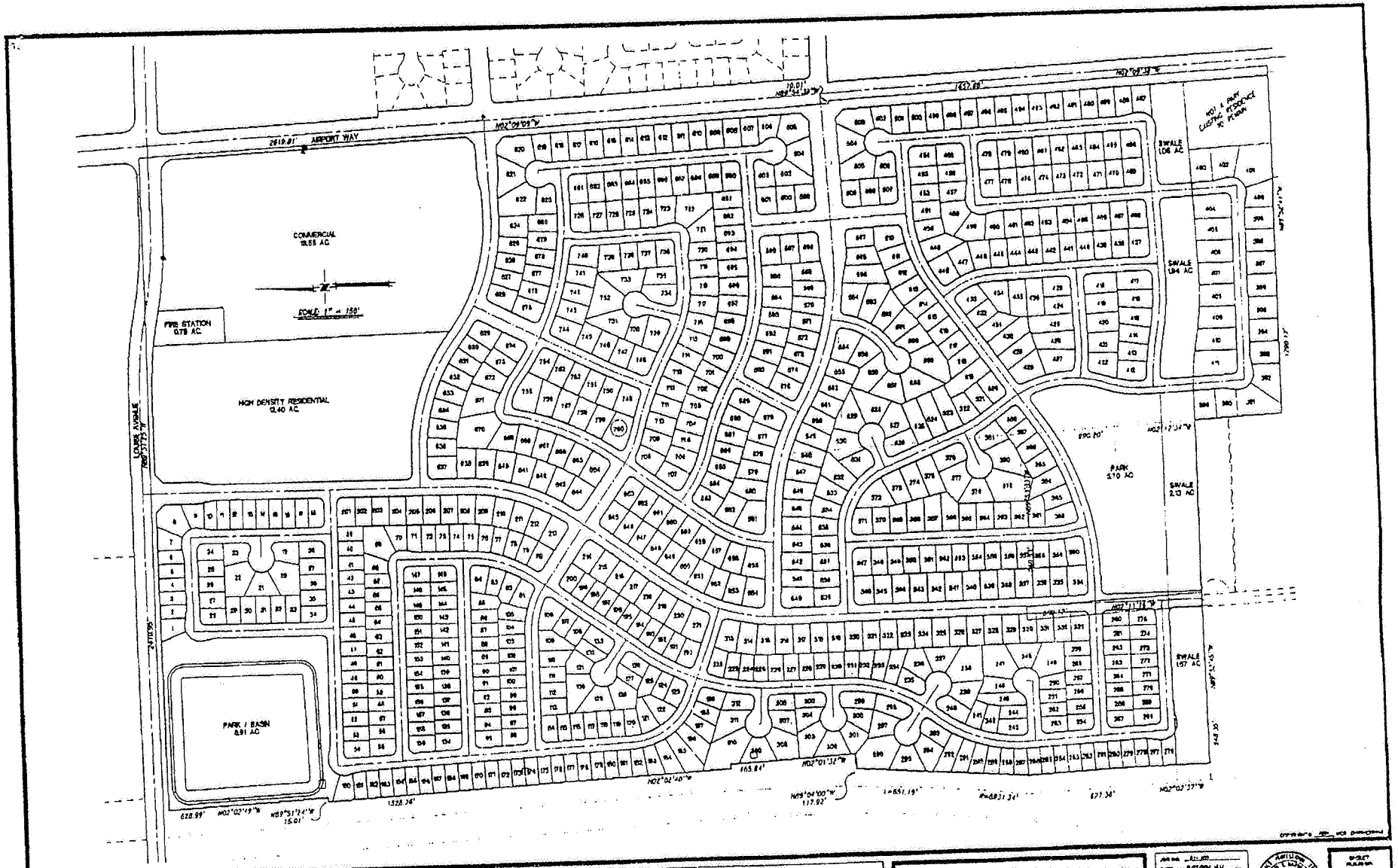
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*44*	*539*	*0*	*0*	*320*	*95*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.92*	*0.79*	*0.79*	*0.79*
Hourly Flow Rate, HFR	*51*	*626*	*0*	*0*	*405*	*120*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*76*	*2*	*116*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.84*	*0.84*	*0.84*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*90*	*2*	*138*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*			*LTR*				
v (vph)	*51*			*230*				
C (m) (vph)	*1042*			*304*				
v/c	*0.05*			*0.76*				
95% queue length	*0.15*			*5.75*				
Control Delay	*8.6*			*45.9*				
LOS	*A*			*E*				
Approach Delay	--	--	*45.9*					
Approach LOS	--	--	*E*					

Approved Development Data



LAYOUT MAP

VILLA TICINO WEST

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

MCH Engineering, Inc.
PLANNING • SURVEYING • SURVEYING

1

Approved Development Trip Generation

Kimley-Horn and Associates, Inc.

Project Assieh Industrial Development EIR
Trip generation for Single-Family Detached Housing
Designed by M Mowery *Date* November 01, 2003 *Job No.* Number
Checked by J West *Date* November 01, 2003 *Sheet No.* 1 *of* 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 6th Edition, Average Rate Equations

Land Use Code - 210

Independent Variable - Dwelling Unit(s)

Number of Units (X) - 760

T = Trip Ends

Peak Hour Adjacent Street Traffic

AM Peak
T = (X) * 0.75 Trip Ends Per Dwelling Unit(s)
T = 570 Trip Ends

Directional Distribution:
25% Entering 75% Exiting
143 Entering 427 Exiting

Peak Hour Adjacent Street Traffic

PM Peak
T = (X) * 1.01 Trip Ends Per Dwelling Unit(s)
T = 768 Trip Ends

Directional Distribution:
64% Entering 36% Exiting
492 Entering 276 Exiting

Weekday

Daily Weekday
T = (X) * 9.57 Trip Ends Per Dwelling Unit(s)
T = 7273 Trip Ends

Directional Distribution:
50% Entering 50% Exiting
3637 Entering 3637 Exiting

Non-Pass-By Trip Percentage

AM 100%
PM 100%

Non-Pass-By Trip Volumes

AM Peak	143 Entering	427 Exiting
PM Peak	492 Entering	276 Exiting

Note: Rounding may occur in calculations

Project	Assieh Industrial Development EIR				Kimley-Horn and Associates, Inc.
Trip generation for	Apartment				
Designed by	M Mowery	*Date*	November 01, 2003	*Job No.*	Number
Checked by	J West	*Date*	November 01, 2003	*Sheet No.*	1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 6th Edition, Average Rate Equations

Land Use Code - 220

Independent Variable - Dwelling Unit(s)

Number of Units (X) - 220

T = Trip Ends

Peak Hour Adjacent Street Traffic

AM Peak

				Directional Distribution:	
T =	(X) *	0.51	Trip Ends Per Dwelling Unit(s)	16% Entering	84% Exiting
T =	112		Trip Ends	18 Entering	94 Exiting

Peak Hour Adjacent Street Traffic

PM Peak

				Directional Distribution:	
T =	(X) *	0.62	Trip Ends Per Dwelling Unit(s)	67% Entering	33% Exiting
T =	136		Trip Ends	91 Entering	45 Exiting

Weekday

Daily Weekday

				Directional Distribution:	
T =	(X) *	6.63	Trip Ends Per Dwelling Unit(s)	50% Entering	50% Exiting
T =	1459		Trip Ends	730 Entering	730 Exiting

Non-Pass-By Trip Percentage

AM	100%
PM	100%

Non-Pass-By Trip Volumes

AM Peak	18 Entering	94 Exiting
PM Peak	91 Entering	45 Exiting

Note: Rounding may occur in calculations

Trip Generation Planner (ITE 6th Edition)

Kimley-Horn and Associates, Inc.

Weekday Trip Generation
Average Trip Rates

ITE Code	Land Use Description	Independent Variable	No. of Units	Daily Rate	AM Rate	PM Rate	Total Daily Trips	Total AM Trips	Total PM Trips	Total AM Trips In	Total AM Trips Out	Total PM Trips In	Total PM Trips Out	New Daily Trips	New AM Trips	New PM Trips	New AM Trips In	New AM Trips Out	New PM Trips In	New PM Trips Out
010	Waterport/Marine facility	Acre(s)		11.93	*	*														
021	Commercial Airport	Flights/Day		122.21	6.43	6.88														
022	General Aviation Airport *(1)*	Based Aircraft		5.00	0.41	0.52														
030	Truck Terminal	1,000 Sq Ft		9.85	0.90	0.82														
090	Park and Ride w/ Bus Service	Parking Space(s)		4.50	0.75	0.63														
093	Light Rail Transit Station w/ Parking	Parking Space(s)		2.51	1.07	1.24														
110	General Light Industrial	1,000 Sq Ft		6.97	0.92	0.98														
120	General Heavy Industrial	1,000 Sq Ft		1.50	0.51	0.68														
130	Industrial Park	1,000 Sq Ft		6.96	0.89	0.92														
140	Manufacturing	1,000 Sq Ft		3.82	0.73	0.74														
150	Warehousing	1,000 Sq Ft		4.96	0.45	0.51														
151	Mini-Warehouse	1,000 Sq Ft		2.50	0.15	0.26														
152	High-Cube Warehouse	1,000 Sq Ft		*	*	0.12														
170	Utilities	1,000 Sq Ft		*	*	0.49														
210	Single-Family Detached Housing	Dwelling Unit(s)		9.57	0.75	1.01														
220	Apartment	Dwelling Unit(s)		6.63	0.51	0.62														
221	Low-Rise Apartment	Occ. Dwelling Unit(s)		6.59	0.47	0.58														
222	High-Rise Apartment	Dwelling Unit(s)		4.20	0.30	0.35														
223	Mid-Rise Apartment	Dwelling Unit(s)		*	0.30	0.39														
224	Rental Townhouse	Dwelling Unit(s)		*	0.70	0.72														
230	Residential Condominium/Townhouse	Dwelling Unit(s)		5.86	0.44	0.54														
231	Low-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		*	0.66	0.83														
232	High-Rise Residential Condominium/Townhouse	Dwelling Unit(s)		4.18	0.34	0.38														
233	Luxury Condominium/Townhouse	Occ. Dwelling Unit(s)		*	0.56	0.55														
240	Mobile Home Park	Occ. Dwelling Unit(s)		4.81	0.40	0.56														
250	Retirement Community	Occ. Dwelling Unit(s)		*	0.17	0.27														
251	Elderly-Housing-Detached	Dwelling Unit(s)		*	0.21	0.23														
252	Congregate Care Facility	Occ. Dwelling Unit(s)		2.15	0.06	0.17														
253	Elderly-Housing-Attached	Occ. Dwelling Unit(s)		3.48	0.07	0.10														
260	Recreational Homes	Dwelling Unit(s)		3.16	0.16	0.26														
270	Residential Planned Unit Development	Dwelling Unit(s)		7.50	0.51	0.62														
310	Hotel	Room(s)		8.23	0.56	0.61														
311	All Suites Hotel	Room(s)		4.90	0.38	0.40														
312	Business Hotel	Occupied Room(s)		7.27	0.58	0.62														
320	Motel	Room(s)		5.63	0.45	0.47														
330	Resort Hotel	Room(s)		*	0.31	0.42														
411	City Park	Acre(s)	14.6	1.59	*	*	23							23						
412	County Park	Acre(s)		2.28	0.01	0.06														
413	State Park	Acre(s)		0.65	*	*														
414	Water Slide Park	Parking Space(s)		1.67	*	*														
415	Beach Park *(1)*	Acre(s)		29.81	0.48	0.60														

Trip Generation Planner (ITE 6th Edition)



Kimley-Horn
and Associates, Inc.

Weekday Trip Generation
Average Trip Rates

ITE Code	Land Use Description	Independent Variable	No. of Units	Daily Rate	AM Rate	PM Rate	Total Daily Trips	Total AM Trips	Total PM Trips	Total AM Trips In	Total AM Trips Out	Total PM Trips In	Total PM Trips Out	New Daily Trips	New AM Trips	New PM Trips	New AM Trips In	New AM Trips Out	New PM Trips In	New PM Trips Out
416	Campground/RV Park	Acre(s)		74.38	0.27	0.39														
417	Regional Park	Acre(s)		4.57	*	0.20														
418	National Monument	Acre(s)		5.37	0.23	0.42														
420	Marina	Berth(s)		2.96	0.08	0.19														
430	Golf Course	Acre(s)		5.04	0.21	0.30														
431	Miniature Golf Course	Hole(s)		*	*	0.33														
432	Golf Driving Range	Driving Position(s)		*	*	1.25														
435	Multipurpose Recreational Facility	Acre(s)		90.38	1.92	5.77														
441	Live Theater	Seat(s)		*	*	0.02														
443	Movie Theater w/o Matinee	Screen(s)		220.00	*	24.00														
444	Movie Theater w/ Matinee	Screen(s)		153.33	9.50	44.53														
452	Horse Race Track	Acre(s)		43.00	*	*														
453	Automobile Race Track	Attendee(s)		*	*	*														
454	Dog Racetrack	Attendee(s)		*	*	0.15														
460	Arena	Acre(s)		33.33	*	*														
465	Ice Rink	1,000 Sq Ft		*	*	2.36														
473	Casino/Video Lottery Establishment	1,000 Sq Ft		*	*	13.43														
XXX	Native American Gaming Facility	1,000 Sq Ft		56.40	*	6.77														
XXX	Native American Gaming Facility	1,000 Sq Ft		*	*	4.95														
XXX	Native American Gaming Facility	Gaming Position(s)		3.42	0.16	0.41														
480	Amusement Park	Acre(s)		75.76	0.21	3.95														
481	Zoo	Acre(s)		114.88	*	*														
491	Tennis Courts	Court(s)		31.04	1.67	3.88														
492	Racquet Club	1,000 Sq Ft		17.14	1.46	1.83														
493	Health Club	1,000 Sq Ft		*	0.30	4.30														
494	Bowling Alley	Lane(s)		33.33	3.13	3.54														
495	Recreational Community Center	1,000 Sq Ft		22.88	1.32	1.75														
501	Military Base	Employee(s)		1.78	0.39	0.39														
520	Elementary School *(1)*	Student(s)		1.02	0.29	0.26														
521	Private School (K-12)	Student(s)		*	0.92	0.20														
522	Middle School	Student(s)		1.45	0.46	0.16														
530	High School	Student(s)		1.79	0.46	0.15														
540	Junior/Community College	Student(s)		1.54	0.14	0.17														
550	University/College	Student(s)		2.38	0.21	0.21														
560	Church	1,000 Sq Ft		9.11	0.72	0.66														
561	Synagogue	1,000 Sq Ft		10.64	0.33	3.14														
565	Day Care Center	Student(s)		4.52	0.81	0.86														
566	Cemetery	Acre(s)		4.73	0.17	0.84														
571	Prison	1,000 Sq Ft		*	7.27	2.91														
590	Library	1,000 Sq Ft		54.00	1.06	7.09														
591	Lodge/Fraternal Organization	Member(s)		0.29	0.01	0.03														

Trip Generation Planner (ITE 6th Edition)



Kimley-Horn
and Associates, Inc.

Weekday Trip Generation
Average Trip Rates

ITE Code	Land Use Description	Independent Variable	No. of Units	Daily Rate	AM Rate	PM Rate	Total Daily Trips	Total AM Trips	Total PM Trips	Total AM Trips In	Total AM Trips Out	Total PM Trips In	Total PM Trips Out	New Daily Trips	New AM Trips	New PM Trips	New AM Trips In	New AM Trips Out	New PM Trips In	New PM Trips Out
610	Hospital	1,000 Sq Ft		16.78	1.20	1.46														
620	Nursing Home	Bed(s)		2.61	0.17	0.20														
630	Clinic	1,000 Sq Ft		31.45	*	5.18														
710	General Office Building *(1)*	1,000 Sq Ft		11.01	1.56	1.49														
714	Corporate Headquarters *(1)*	1,000 Sq Ft		7.72	1.47	1.39														
715	Single Tenant Office Building *(1)*	1,000 Sq Ft		11.57	1.78	1.72														
720	Medical-Dental Office Building	1,000 Sq Ft		36.13	2.43	3.66														
730	Government Office Building	1,000 Sq Ft		68.93	5.88	11.03														
731	State Motor Vehicles Department	1,000 Sq Ft		166.02	9.84	17.09														
732	US Post Office	1,000 Sq Ft		108.19	8.02	10.79														
733	Government Office Complex	1,000 Sq Ft		25.00	2.25	2.86														
750	Office Park *(1)*	1,000 Sq Ft		11.42	1.74	1.50														
760	Research and Development Center *(1)*	1,000 Sq Ft		8.11	1.24	1.08														
770	Business Park *(1)*	1,000 Sq Ft		12.76	1.43	1.29														
812	Building Materials and Lumber Store	1,000 Sq Ft		39.71	2.64	4.04														
813	Free Standing Discount Superstore	1,000 Sq Ft		46.96	1.84	3.82														
814	Specialty Retail Center	1,000 Sq Ft	190	40.67	0.98	2.59	7727	186	492	113	73	212	280	7727	186	492	113	73	212	280
815	Free Standing Discount Store	1,000 Sq Ft		56.63	0.99	4.24														
816	Hardware/Paint Store	1,000 Sq Ft		51.29	1.08	4.42														
817	Nursery/Garden Center	1,000 Sq Ft		36.08	1.31	3.80														
818	Nursery (Wholesale)	1,000 Sq Ft		39.00	2.40	5.17														
820	Shopping Center	1,000 Sq Ft		42.92	1.03	3.74														
823	Factory Outlet Center	1,000 Sq Ft		25.59	0.67	2.29														
831	Quality Restaurant	1,000 Sq Ft		89.95	0.81	7.49														
832	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	20	130.34	9.27	10.86	2607	185	217	96	89	130	87	1564	111	124	58	53	74	50
833	Fast-Food Restaurant w/o Drive-Thru	1,000 Sq Ft		716.00	43.87	26.15														
834	Fast-Food Restaurant w/ Drive-Thru	1,000 Sq Ft	12	496.12	49.86	33.48	5953	598	402	305	293	209	193	3155	317	213	162	155	111	102
835	Fast-Food Restaurant w/ D.T. No Indoor Seats	1,000 Sq Ft		*	*	153.85														
836	Drinking Place	1,000 Sq Ft		*	*	11.54														
837	Quick Lubrication Vehicle Shop	Servicing Position(s)		40.00	3.00	5.19														
840	Automobile Care Center	1,000 Sq Ft		*	2.94	3.38														
841	New Car Sales	1,000 Sq Ft		37.50	2.21	2.80														
843	Automobile Parts Sales	1,000 Sq Ft		61.91	2.21	5.98														
844	Gasoline Station	Fueling Position(s)	12	168.56	12.27	14.56	2023	147	175	75	72	89	86	2023	62	102	31	31	52	50
845	Gasoline Station w/ Convenience Market	Fueling Position(s)		162.78	10.06	13.38														
846	Gasoline Station w/ Conv. Mkt. & Car Wash	Fueling Position(s)		152.84	10.64	13.19														
847	Self-Service Car Wash *(1)*	Wash Stall(s)		108.00	8.00	5.79														
848	Tire Store	1,000 Sq Ft		24.87	2.85	4.12														
849	Wholesale Tire Store	1,000 Sq Ft		20.36	1.34	2.11														
850	Supermarket	1,000 Sq Ft	80	111.51	3.25	11.51	8921	260	921	159	101	470	451	8921	182	645	111	71	329	316
851	Convenience Market	1,000 Sq Ft		737.99	65.39	53.73														

Trip Generation Planner (ITE 6th Edition)

Weekday Trip Generation
Average Trip Rates

Kimley-Horn and Associates, Inc.

ITE Code	Land Use Description	Independent Variable	No. of Units	Daily Rate	AM Rate	PM Rate	Total Daily Trips	Total AM Trips	Total PM Trips	Total AM Trips In	Total AM Trips Out	Total PM Trips In	Total PM Trips Out	New Daily Trips	New AM Trips	New PM Trips	New AM Trips In	New AM Trips Out	New PM Trips In	New PM Trips Out
852	Convenience Market (Open 15-16 Hours)	1,000 Sq Ft		*	31.02	34.57														
853	Convenience Market w/ Gasoline Pumps	1,000 Sq Ft		845.60	45.58	60.61														
854	Discount Supermarket	1,000 Sq Ft		*	1.72	9.83														
860	Wholesale Market	1,000 Sq Ft		6.73	0.50	0.21														
861	Discount Club	1,000 Sq Ft		41.80	0.65	3.80														
862	Home Improvement Superstore	1,000 Sq Ft		35.05	1.48	2.87														
863	Electronics Superstore *(1)*	1,000 Sq Ft		45.04	3.46	4.50														
864	Toy/Children's Superstore	1,000 Sq Ft		*	*	4.99														
870	Apparel Store	1,000 Sq Ft		66.40	1.00	3.83														
880	Pharmacy/Drugstore w/o Drive-Through Window	1,000 Sq Ft		90.06	3.20	7.63														
881	Pharmacy/Drugstore w/ Drive-Through Window	1,000 Sq Ft		88.16	2.66	10.40														
890	Furniture Store	1,000 Sq Ft		5.06	0.17	0.45														
895	Video Arcade	1,000 Sq Ft		*	*	10.64														
896	Video Rental Store	1,000 Sq Ft		*	*	13.60														
911	Walk-In Bank	1,000 Sq Ft		156.48	4.07	33.15														
912	Drive-In Bank	1,000 Sq Ft		265.21	12.63	54.77														
						Totals	**27254**	**1376**	**2207**	**748**	**628**	**1110**	**1097**	**23413**	**858**	**1575**	**475**	**383**	**778**	**797**

Notes:

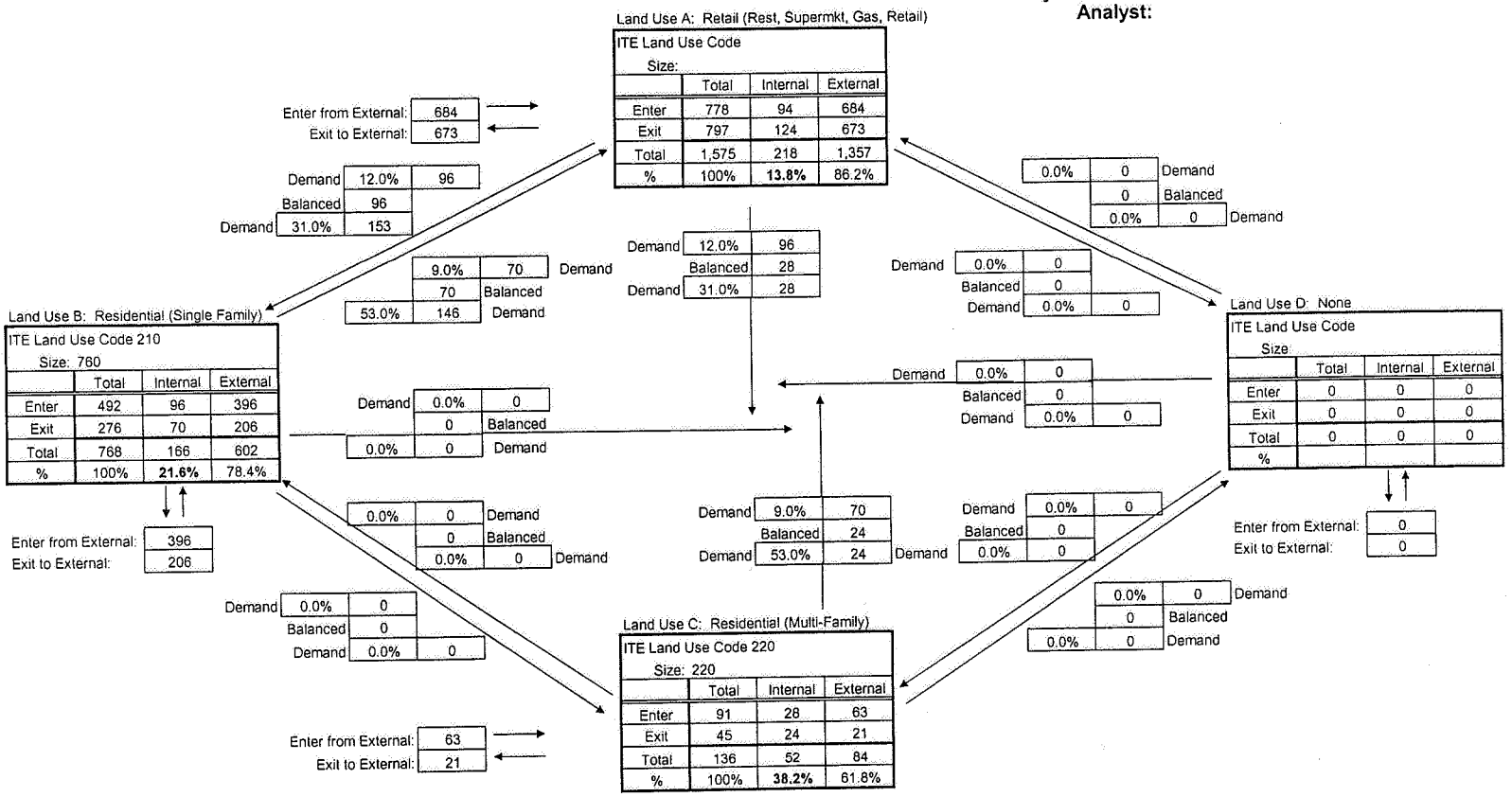
(1) Rates correspond to peak hour of generator

A Trip Generation data from ITE Trip Generation, 6th Edition
B AM/PM rates correspond to peak of adjacent street traffic (if data available)
C Includes weekday rates only
D Total trips include pass-by trips
E Pass-by rates from ITE Trip Generation Handbook and ITE Trip Generation, 5th Edition
F Worksheet is intended as a planning tool. Verify results w/ ITE Trip Generation 6th Edition
G Enter data only in shaded cells

ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

(Source: Chapter 7, ITE *Trip Generation Handbook*, October 1998)

Project Number:
Project Name:
Scenario:
Analysis Period: PM Peak
Analyst:



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category	Land Use A	B	C	D	Total
Enter	684	396	63	0	1,143
Exit	673	206	21	0	900
Total	1,357	602	84	0	2,043
Single Use Trip Gen Estimate	1,575	768	136	0	2,479

Overall Internal Capture = 17.59%

Existing + Approved Development
(Synchro Software and HCS)

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*36*	*11*	*312*	*44*	*0*
Peak-Hour Factor, PHF	*0.78*	*0.78*	*0.78*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*46*	*14*	*371*	*52*	*0*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*216*	*7*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*257*	*8*	*3*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

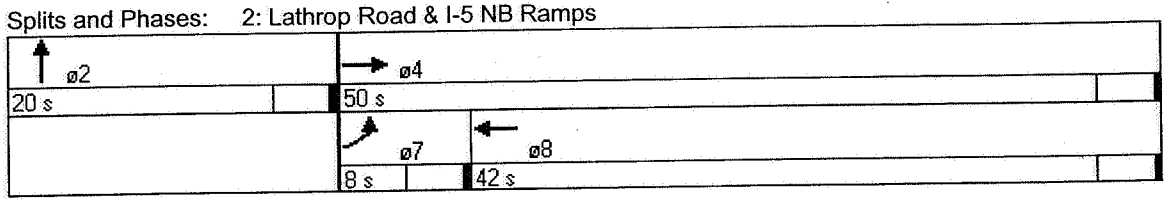
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*371*					*268*	
C (m) (vph)		*1531*					*251*	
v/c		*0.24*					*1.07*	
95% queue length		*0.95*					*11.14*	
Control Delay		*8.1*					*119.0*	
LOS		*A*					*F*	
Approach Delay	--	--				*119.0*		
Approach LOS	--	--				*F*		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1699	0	0	1594	0	0	0	0
Flt Permitted	0.950							0.996				
Satd. Flow (perm)	1736	1827	0	0	1699	0	0	1594	0	0	0	0
Satd. Flow (RTOR)					122			184				
Volume (vph)	4	243	0	0	350	381	11	0	127	0	0	0
Lane Group Flow (vph)	5	293	0	0	881	0	0	200	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Total Split (s)	8.0	50.0	0.0	0.0	42.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	4.2	28.5			27.4			7.5				
Actuated g/C Ratio	0.08	0.64			0.61			0.17				
v/c Ratio	0.03	0.25			0.81			0.48				
Uniform Delay, d1	23.2	3.0			7.0			1.4				
Delay	27.8	3.3			9.8			5.7				
LOS	C	A			A			A				
Approach Delay		3.8			9.8			5.7				
Approach LOS		A			A			A				
Queue Length 50th (ft)	1	19			77			0				
Queue Length 95th (ft)	11	53			#347			24				
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 44.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 7.9
Intersection LOS: A
Intersection Capacity Utilization 69.2%
ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps

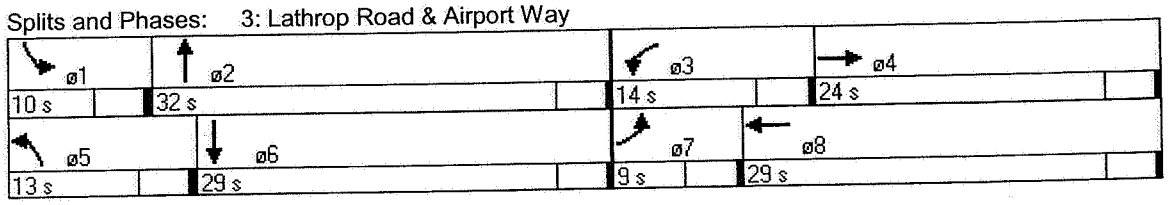


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1779	0	1736	1754	0	1736	1734	0	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1779	0	1736	1754	0	1736	1734	0	1736	1827	1553
Satd. Flow (RTOR)		12			24			36				28
Volume (vph)	29	172	35	154	236	86	61	256	133	52	162	23
Lane Group Flow (vph)	42	300	0	173	362	0	74	474	0	63	195	28
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	9.0	24.0	0.0	14.0	29.0	0.0	13.0	32.0	0.0	10.0	29.0	29.0
Act Effct Green (s)	6.0	14.6		10.2	20.7		8.3	27.8		6.9	26.5	26.5
Actuated g/C Ratio	0.10	0.24		0.17	0.34		0.13	0.47		0.11	0.45	0.45
v/c Ratio	0.26	0.69		0.60	0.60		0.32	0.57		0.34	0.24	0.04
Uniform Delay, d1	30.1	23.5		27.8	19.6		29.0	14.3		30.0	13.7	0.0
Delay	35.1	23.9		41.8	19.2		32.0	20.4		34.7	19.8	8.2
LOS	D	C		D	B		C	C		C	B	A
Approach Delay		25.3			26.5			22.0			21.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	18	119		76	131		31	125		28	69	0
Queue Length 95th (ft)	40	151		#184	231		68	191		64	117	11
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			125			300			325		325
50th Bay Block Time %					11%							
95th Bay Block Time %				38%	35%							
Queuing Penalty (veh)				69	39							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 59.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 24.1
Intersection LOS: C
Intersection Capacity Utilization 68.9%
ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

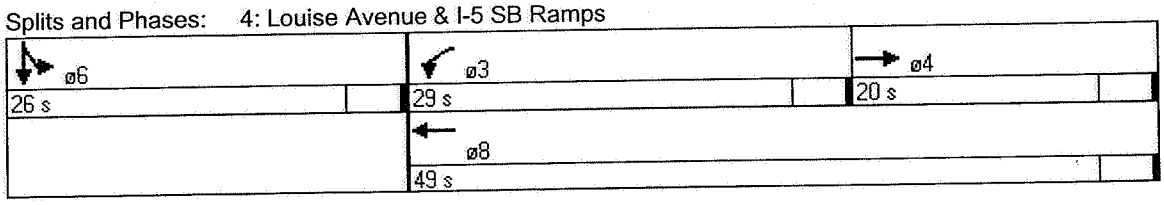


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1809	0	1736	1827	0	0	0	0	1736	1553	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1809	0	1736	1827	0	0	0	0	1736	1553	0
Satd. Flow (RTOR)		4									965	
Volume (vph)	0	40	3	489	46	0	0	0	0	353	0	8
Lane Group Flow (vph)	0	52	0	619	58	0	0	0	0	484	11	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	29.0	49.0	0.0	0.0	0.0	0.0	26.0	26.0	0.0
Act Effct Green (s)		7.2		25.4	32.1					20.8	20.8	
Actuated g/C Ratio		0.11		0.42	0.53					0.34	0.34	
v/c Ratio		0.25		0.86	0.06					0.82	0.01	
Uniform Delay, d1		25.6		17.2	6.8					19.4	0.0	
Delay		25.5		34.4	7.1					27.9	0.0	
LOS		C		C	A					C	A	
Approach Delay		25.5			32.1						27.3	
Approach LOS		C			C						C	
Queue Length 50th (ft)		18		235	10					178	0	
Queue Length 95th (ft)		44		#365	21					224	0	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				19%								
95th Bay Block Time %				38%								
Queuing Penalty (veh)				16								

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 61.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 29.9 — Intersection LOS: C
Intersection Capacity Utilization 74.4% — ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



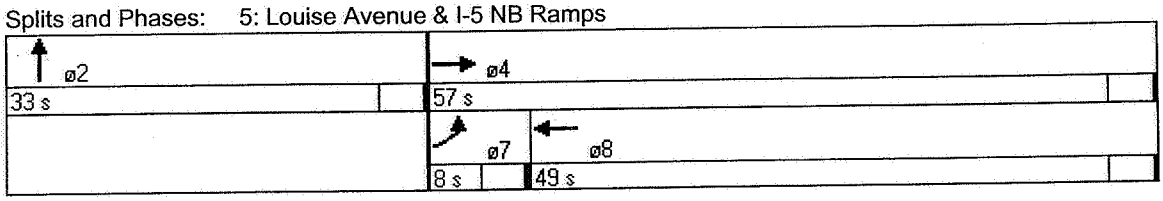
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1759	1553	0	0	0
Flt Permitted	0.950							0.963				
Satd. Flow (perm)	1736	3471	0	0	1827	1553	0	1759	1553	0	0	0
Satd. Flow (RTOR)						572			328			
Volume (vph)	4	388	0	0	496	435	17	5	328	0	0	0
Lane Group Flow (vph)	6	546	0	0	653	572	0	30	449	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	8.0	57.0	0.0	0.0	49.0	49.0	33.0	33.0	33.0	0.0	0.0	0.0
Act Effct Green (s)	4.6	23.9			23.1	23.1		11.4	11.4			
Actuated g/C Ratio	0.09	0.53			0.51	0.51		0.25	0.25			
v/c Ratio	0.04	0.30			0.70	0.53		0.07	0.71			
Uniform Delay, d1	23.2	4.8			9.4	0.0		13.7	4.0			
Delay	32.8	5.9			9.9	1.1		17.0	6.2			
LOS	C	A			A	A		B	A			
Approach Delay		6.2			5.8			6.8				
Approach LOS		A			A			A				
Queue Length 50th (ft)	1	25			77	0		5	18			
Queue Length 95th (ft)	13	70			289	14		25	67			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 45.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 6.1
Intersection Capacity Utilization 52.1%

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

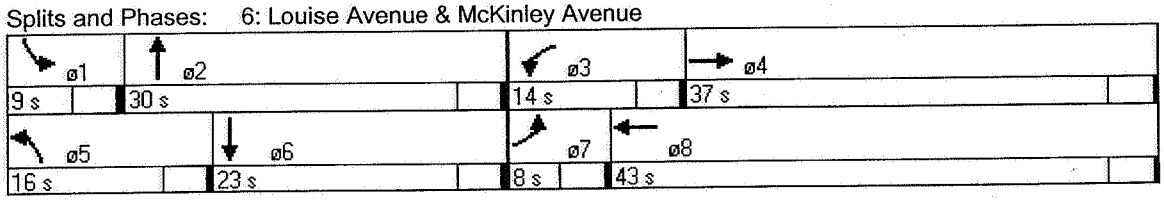


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	1553	1736	1814	0	1736	1675	0	1736	1792	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1827	1553	1736	1814	0	1736	1675	0	1736	1792	0
Satd. Flow (RTOR)			99		4			70			7	
Volume (vph)	30	367	96	60	540	27	127	117	145	26	135	20
Lane Group Flow (vph)	38	465	122	83	788	0	205	423	0	58	344	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	37.0	37.0	14.0	43.0	0.0	16.0	30.0	0.0	9.0	23.0	0.0
Act Effct Green (s)	4.0	33.3	33.3	8.6	39.1		11.8	27.0		5.0	18.2	
Actuated g/C Ratio	0.04	0.39	0.39	0.10	0.46		0.14	0.31		0.06	0.21	
v/c Ratio	0.49	0.66	0.18	0.49	0.95		0.86	0.73		0.59	0.89	
Uniform Delay, d1	42.8	22.3	3.2	39.0	24.0		37.6	22.8		41.8	32.8	
Delay	49.8	23.7	6.2	37.9	44.4		60.0	27.3		53.4	48.8	
LOS	D	C	A	D	D		E	C		D	D	
Approach Delay		21.9			43.8			38.0			49.4	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	22	219	8	45	433		116	149		33	188	
Queue Length 95th (ft)	#51	274	33	71	424		125	134		35	122	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %		31%			41%		1%	14%			26%	
95th Bay Block Time %		37%			41%		7%	9%			5%	
Queuing Penalty (veh)		13			34		14	23			9	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 85.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 37.8 — Intersection LOS: D
Intersection Capacity Utilization 88.2% — ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/25/2003*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*Louise Ave & Villa Ticino Dwy*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Louise Avenue* | North/South Street: *Villa Ticino Dwy*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*217*	*251*	*45*	*429*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.92*	*0.92*	*0.92*	*0.92*	*1.00*
Hourly Flow Rate, HFR	*0*	*235*	*272*	*48*	*466*	*0*
Percent Heavy Vehicles	*0*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*313*	*0*	*100*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.92*	*1.00*	*0.92*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*340*	*0*	*108*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

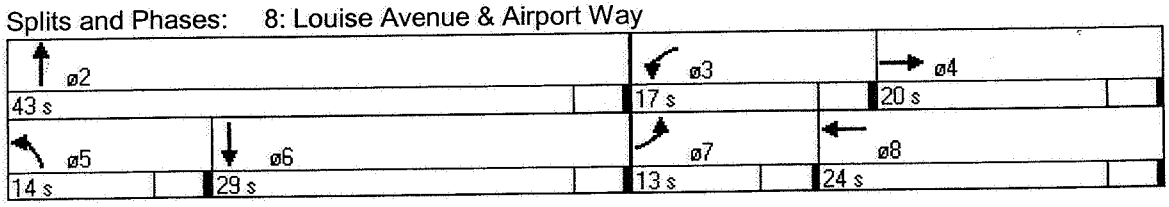
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*48*	*340*		*108*			
C (m) (vph)		*1040*	*352*		*739*			
v/c		*0.05*	*0.97*		*0.15*			
95% queue length		*0.14*	*10.57*		*0.51*			
Control Delay		*8.6*	*74.7*		*10.7*			
LOS		*A*	*F*		*B*			
Approach Delay	--	--	*59.2*					
Approach LOS	--	--	*F*					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3367	0	1736	3423	0	1736	3471	1553	1736	1774	0
Flt Permitted	0.950			0.950			0.950			0.538		
Satd. Flow (perm)	1736	3367	0	1736	3423	0	1736	3471	1553	983	1774	0
Satd. Flow (RTOR)		35			13				226		16	
Volume (vph)	75	210	53	160	326	33	103	293	185	24	323	78
Lane Group Flow (vph)	90	317	0	193	433	0	126	357	226	26	431	0
Turn Type	Prot			Prot			Prot		Perm	Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases									2	6		
Total Split (s)	13.0	20.0	0.0	17.0	24.0	0.0	14.0	43.0	43.0	29.0	29.0	0.0
Act Effct Green (s)	8.3	12.0		11.2	14.6		9.0	29.1	29.1	19.7	19.7	
Actuated g/C Ratio	0.13	0.19		0.17	0.23		0.14	0.47	0.47	0.32	0.32	
v/c Ratio	0.40	0.47		0.64	0.53		0.52	0.22	0.27	0.08	0.75	
Uniform Delay, d1	27.2	19.9		26.4	20.4		27.1	9.4	0.0	15.2	18.6	
Delay	31.7	24.1		32.6	23.5		32.1	10.3	1.9	19.0	23.9	
LOS	C	C		C	C		C	B	A	B	C	
Approach Delay		25.8			26.3			11.5			23.6	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	38	62		81	90		54	44	0	8	168	
Queue Length 95th (ft)	80	94		#147	126		102	67	23	27	#213	
Internal Link Dist (ft)		1578			3753			1825			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340			340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 62.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 20.9 Intersection LOS: C
Intersection Capacity Utilization 63.4% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way



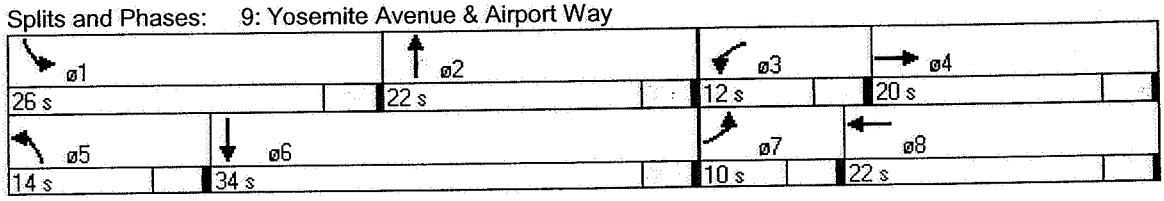
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3384	0	1736	3200	0	1736	1827	1553	1736	1745	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3384	0	1736	3200	0	1736	1827	1553	1736	1745	0
Satd. Flow (RTOR)		26			312				73		31	
Volume (vph)	59	242	48	75	248	266	87	175	66	248	243	104
Lane Group Flow (vph)	94	460	0	93	634	0	96	192	73	306	428	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	10.0	20.0	0.0	12.0	22.0	0.0	14.0	22.0	22.0	26.0	34.0	0.0
Act Effct Green (s)	6.7	13.4		7.8	14.6		8.7	13.5	13.5	15.3	19.6	
Actuated g/C Ratio	0.11	0.22		0.13	0.24		0.14	0.22	0.22	0.25	0.32	
v/c Ratio	0.50	0.60		0.43	0.63		0.40	0.47	0.18	0.72	0.73	
Uniform Delay, d1	27.8	20.0		26.6	10.0		25.8	20.5	0.0	23.3	16.8	
Delay	45.3	23.7		32.2	12.4		30.3	26.1	7.3	24.0	19.0	
LOS	D	C		C	B		C	C	A	C	B	
Approach Delay		27.3			14.9			23.4			21.1	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	38	86		36	59		37	73	0	115	148	
Queue Length 95th (ft)	65	100		81	104		91	146	29	190	218	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %					6%							
95th Bay Block Time %		4%		29%	33%			30%				
Queuing Penalty (veh)				46	18			14				

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 60.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 21.0
Intersection Capacity Utilization 66.4%

Intersection LOS: C
ICU Level of Service B

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	Kimley-Horn and Associates
Agency/Co.	Manteca, CA
Date Performed	11/14/2003
Analysis Time Period	AM

Site Information

Intersection	SR-120 EB Ramps & Yosemite Ave
Jurisdiction	
Analysis Year	Existing + Approved Devp.
Project ID	Assieh Industrial Development EIR

East/West Street: SR-120 EB Ramps | North/South Street: Yosemite Avenue

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	33	5	10	45	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.56	0.56	0.56
Hourly Flow Rate, HFR	0	35	5	17	80	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	84	3	5
Peak-Hour Factor, PHF	0.75	0.75	0.75	0.84	0.84	0.84
Hourly Flow Rate, HFR	0	0	0	100	3	5
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	1	0
Configuration					LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT					LTR	
v (vph)		17					108	
C (m) (vph)		1557					829	
v/c		0.01					0.13	
95% queue length		0.03					0.45	
Control Delay		7.3					10.0-	
LOS		A					A	
Approach Delay	--	--				10.0-		
Approach LOS	--	--				A		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 WB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps*

North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*24*	*88*	*0*	*0*	*45*	*152*
Peak-Hour Factor, PHF	*0.77*	*0.77*	*0.77*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR	*31*	*114*	*0*	*0*	*51*	*172*
Percent Heavy Vehicles	*4*	--	--	*4*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*11*	*0*	*14*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*15*	*0*	*20*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*4*	*4*	*4*	*4*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LTR*				
v (vph)	*31*			*35*				
C (m) (vph)	*1334*			*793*				
v/c	*0.02*			*0.04*				
95% queue length	*0.07*			*0.14*				
Control Delay	*7.8*			*9.7*				
LOS	*A*			*A*				
Approach Delay	--	--	*9.7*					
Approach LOS	--	--	*A*					

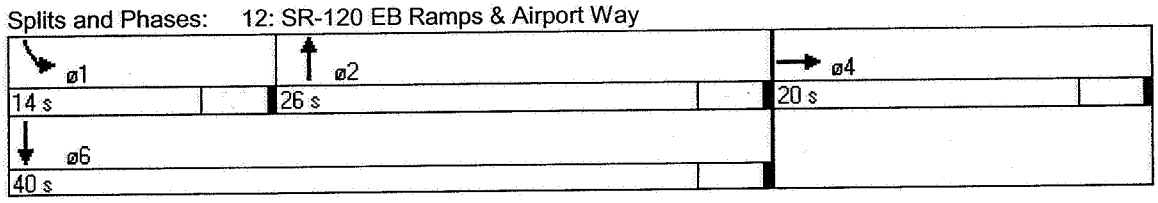
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1696	0	0	0	0	0	1774	0	1736	1827	0
Flt Permitted		0.966								0.950		
Satd. Flow (perm)	0	1696	0	0	0	0	0	1774	0	1736	1827	0
Satd. Flow (RTOR)		33						26				
Volume (vph)	109	2	45	0	0	0	0	246	67	117	176	0
Lane Group Flow (vph)	0	205	0	0	0	0	0	392	0	138	207	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	20.0	20.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	14.0	40.0	0.0
Act Effct Green (s)		10.7						23.7		8.7	34.7	
Actuated g/C Ratio		0.20						0.46		0.16	0.68	
v/c Ratio		0.56						0.47		0.48	0.17	
Uniform Delay, d1		16.3						9.6		20.6	3.3	
Delay		14.2						12.7		19.2	4.5	
LOS		B						B		B	A	
Approach Delay		14.2						12.7			10.4	
Approach LOS		B						B			B	
Queue Length 50th (ft)		39						80		32	19	
Queue Length 95th (ft)		82						152		87	51	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 51.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 12.2
Intersection Capacity Utilization 50.6%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

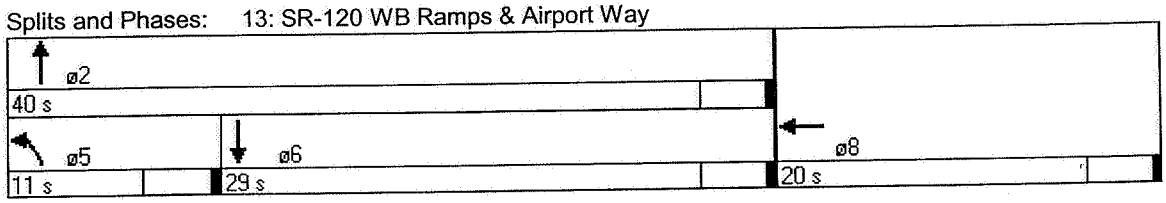


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1615	0	1736	1827	0	0	1668	0
Flt Permitted					0.990		0.950					
Satd. Flow (perm)	0	0	0	0	1615	0	1736	1827	0	0	1668	0
Satd. Flow (RTOR)					197						185	
Volume (vph)	0	0	0	48	0	185	121	263	0	0	195	351
Lane Group Flow (vph)	0	0	0	0	248	0	149	325	0	0	627	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	11.0	40.0	0.0	0.0	29.0	0.0
Act Effct Green (s)					8.2		7.1	35.6			26.5	
Actuated g/C Ratio					0.16		0.14	0.72			0.54	
v/c Ratio					0.58		0.62	0.25			0.64	
Uniform Delay, d1					4.0		21.6	2.7			6.1	
Delay					6.0		29.5	3.7			10.1	
LOS					A		C	A			B	
Approach Delay					6.0			11.8			10.1	
Approach LOS					A			B			B	
Queue Length 50th (ft)					12		37	25			86	
Queue Length 95th (ft)					64		#107	65			#102	
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 49.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 9.9 Intersection LOS: A
Intersection Capacity Utilization 69.8% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: SR-120 WB Ramps & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*82*	*2*	*146*	*40*	*0*
Peak-Hour Factor, PHF	*0.72*	*0.72*	*0.72*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*113*	*2*	*156*	*43*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*421*	*2*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*452*	*2*	*3*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*156*					*457*	
C (m) (vph)		*1474*					*495*	
v/c		*0.11*					*0.92*	
95% queue length		*0.35*					*10.93*	
Control Delay		*7.7*					*52.6*	
LOS		*A*					*F*	
Approach Delay	--	--				*52.6*		
Approach LOS	--	--				*F*		

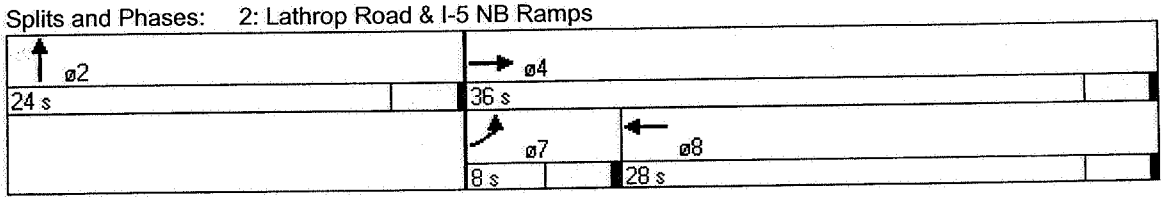
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	0	0	1708	0	0	1615	0	0	0	0
Flt Permitted	0.950							0.999				
Satd. Flow (perm)	1770	1863	0	0	1708	0	0	1615	0	0	0	0
Satd. Flow (RTOR)					160			279				
Volume (vph)	13	486	0	0	177	283	9	0	394	0	0	0
Lane Group Flow (vph)	15	559	0	0	489	0	0	429	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Total Split (s)	8.0	36.0	0.0	0.0	28.0	0.0	24.0	24.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	4.3	16.2			15.2			10.1				
Actuated g/C Ratio	0.10	0.46			0.43			0.29				
v/c Ratio	0.08	0.66			0.59			0.65				
Uniform Delay, d1	18.5	6.2			5.8			4.0				
Delay	23.2	8.0			6.5			5.3				
LOS	C	A			A			A				
Approach Delay		8.4			6.5			5.3				
Approach LOS		A			A			A				
Queue Length 50th (ft)	2	58			29			0				
Queue Length 95th (ft)	20	191			176			104				
Internal Link Dist (ft)		1048			1859			1245			1334	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %		18%										
Queuing Penalty (veh)		1										

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 35.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 6.9
Intersection Capacity Utilization 62.6%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1816	0	1770	1801	0	1770	1719	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1816	0	1770	1801	0	1770	1719	0	1770	1863	1583
Satd. Flow (RTOR)		13			20			65				53
Volume (vph)	44	444	87	195	273	76	43	213	225	124	325	45
Lane Group Flow (vph)	49	597	0	219	392	0	49	498	0	146	382	53
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	10.0	31.0	0.0	13.0	34.0	0.0	8.0	25.0	0.0	11.0	28.0	28.0
Act Effct Green (s)	5.9	26.9		9.0	33.8		4.0	21.0		7.0	27.2	27.2
Actuated g/C Ratio	0.07	0.34		0.11	0.42		0.05	0.26		0.09	0.34	0.34
v/c Ratio	0.39	0.96		1.10	0.51		0.57	1.00		0.94	0.60	0.09
Uniform Delay, d1	39.1	25.9		37.1	17.4		40.2	25.9		38.0	23.6	0.0
Delay	36.3	47.3		112.7	17.7		49.2	59.2		84.8	23.6	6.6
LOS	D	D		F	B		D	E		F	C	A
Approach Delay		46.5			51.7			58.3			37.5	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	24	283		~126	145		24	164		74	167	0
Queue Length 95th (ft)	56	#487		#254	228		#71	#412		#169	243	13
Internal Link Dist (ft)		2740			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		325
50th Bay Block Time %		26%										
95th Bay Block Time %		50%		37%	20%			24%				
Queuing Penalty (veh)		18		72	21			6				

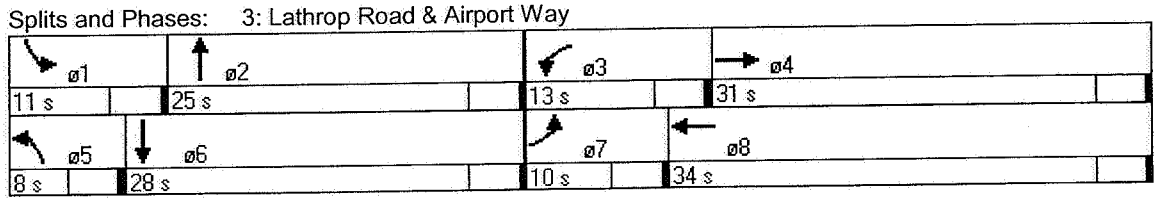
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 79.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 48.3 — Intersection LOS: D
Intersection Capacity Utilization 94.1% — ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

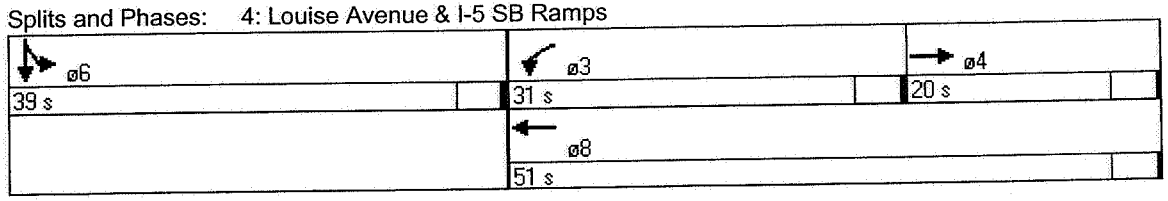


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1829	0	1770	1863	0	0	0	0	1770	1676	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1829	0	1770	1863	0	0	0	0	1770	1676	0
Satd. Flow (RTOR)		7									4	
Volume (vph)	0	57	9	412	52	0	0	0	0	507	2	3
Lane Group Flow (vph)	0	91	0	468	59	0	0	0	0	618	6	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	31.0	51.0	0.0	0.0	0.0	0.0	39.0	39.0	0.0
Act Effct Green (s)		9.0		22.8	32.8					30.1	30.1	
Actuated g/C Ratio		0.12		0.32	0.46					0.42	0.42	
v/c Ratio		0.40		0.83	0.07					0.83	0.01	
Uniform Delay, d1		28.3		22.8	10.4					18.7	4.0	
Delay		31.6		30.7	11.2					26.2	11.4	
LOS		C		C	B					C	B	
Approach Delay		31.6			28.5						26.1	
Approach LOS		C			C						C	
Queue Length 50th (ft)		42		222	16					278	1	
Queue Length 95th (ft)		67		#390	34					#399	0	
Internal Link Dist (ft)		108			1489			879			1479	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				16%						3%		
95th Bay Block Time %				40%						20%		
Queuing Penalty (veh)				16								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 71.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 27.5
Intersection LOS: C
Intersection Capacity Utilization 73.5%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps

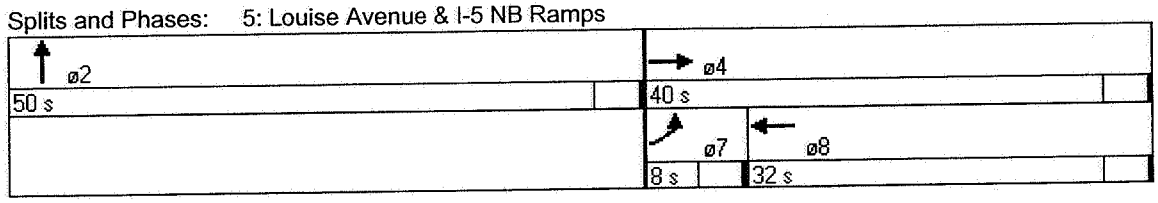


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	0	0	1863	1583	0	1801	1583	0	0	0
Flt Permitted	0.950							0.967				
Satd. Flow (perm)	1770	3539	0	0	1863	1583	0	1801	1583	0	0	0
Satd. Flow (RTOR)						624			134			
Volume (vph)	17	554	0	0	443	524	9	4	653	0	0	0
Lane Group Flow (vph)	20	637	0	0	527	624	0	16	816	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	8.0	40.0	0.0	0.0	32.0	32.0	50.0	50.0	50.0	0.0	0.0	0.0
Act Effct Green (s)	4.2	27.4			24.8	24.8		38.8	38.8			
Actuated g/C Ratio	0.05	0.37			0.33	0.33		0.52	0.52			
v/c Ratio	0.21	0.49			0.86	0.66		0.02	0.92			
Uniform Delay, d1	37.6	17.3			24.6	0.0		9.5	14.9			
Delay	41.9	19.3			36.2	2.5		10.5	23.9			
LOS	D	B			D	A		B	C			
Approach Delay		20.0			17.9			23.7				
Approach LOS		B			B			C				
Queue Length 50th (ft)	10	136			245	0		3	258			
Queue Length 95th (ft)	33	176			#422	50		13	#436			
Internal Link Dist (ft)		1489			4042			691			1473	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %		21%										
95th Bay Block Time %		28%							5%			
Queuing Penalty (veh)		5										

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 20.2 Intersection LOS: C
Intersection Capacity Utilization 74.8% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

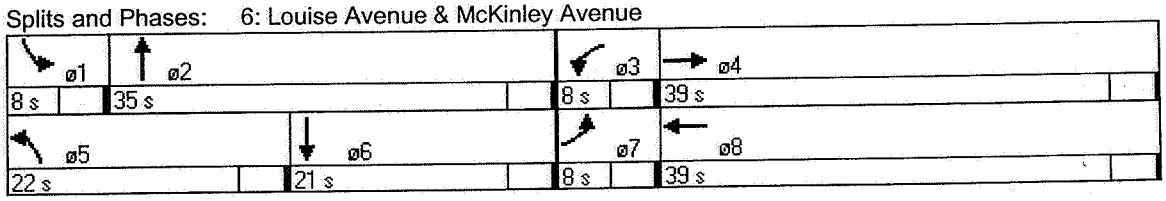


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1863	1583	1770	1853	0	1770	1714	0	1770	1790	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1853	0	1770	1714	0	1770	1790	0
Satd. Flow (RTOR)			123		2			69			18	
Volume (vph)	27	672	210	8	584	21	232	61	69	14	59	21
Lane Group Flow (vph)	28	700	219	9	680	0	305	171	0	17	95	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	39.0	39.0	8.0	39.0	0.0	22.0	35.0	0.0	8.0	21.0	0.0
Act Effct Green (s)	4.1	33.2	33.2	4.1	31.8		16.0	26.1		4.1	8.7	
Actuated g/C Ratio	0.05	0.46	0.46	0.05	0.44		0.22	0.36		0.05	0.12	
v/c Ratio	0.29	0.81	0.27	0.10	0.83		0.77	0.26		0.18	0.41	
Uniform Delay, d1	37.9	20.2	5.9	38.1	20.5		29.4	10.8		37.6	23.7	
Delay	39.1	23.3	6.5	40.1	25.2		35.5	12.6		39.0	27.4	
LOS	D	C	A	D	C		D	B		D	C	
Approach Delay		19.9			25.3			27.3			29.2	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	13	253	23	4	242		127	26		8	30	
Queue Length 95th (ft)	42	#573	79	19	#541		#204	65		28	76	
Internal Link Dist (ft)		1681			3618			2399			2617	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %		30%			29%		9%					
95th Bay Block Time %		50%			49%		35%					
Queuing Penalty (veh)		11			3		37					

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 71.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 23.6 — Intersection LOS: C
Intersection Capacity Utilization 67.1% — ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/25/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Louise Ave & Villa Ticino Dwy*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Louise Avenue*

North/South Street: *Villa Ticino Driveway*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*327*	*440*	*86*	*376*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.92*	*0.92*	*0.92*	*0.92*	*1.00*
Hourly Flow Rate, HFR	*0*	*355*	*478*	*93*	*408*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*307*	*0*	*109*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.92*	*1.00*	*0.92*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*333*	*0*	*118*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

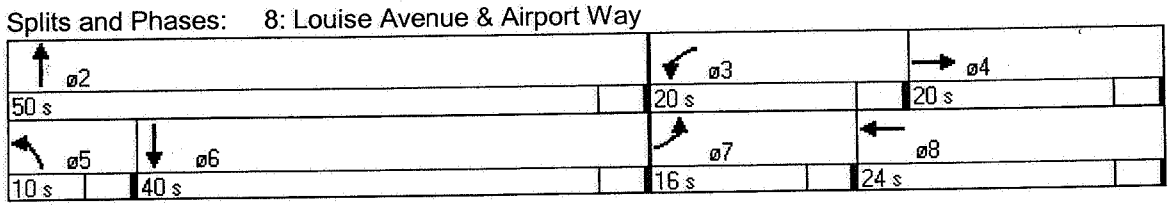
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*93*	*333*		*118*			
C (m) (vph)		*796*	*217*		*585*			
v/c		*0.12*	*1.53*		*0.20*			
95% queue length		*0.40*	*20.57*		*0.75*			
Control Delay		*10.1*	*302.9*		*12.7*			
LOS		*B*	*F*		*B*			
Approach Delay	--	--	*227.0*					
Approach LOS	--	--	*F*					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3437	0	1770	3504	0	1770	3539	1583	1770	1852	0
Flt Permitted	0.950			0.950			0.950			0.513		
Satd. Flow (perm)	1770	3437	0	1770	3504	0	1770	3539	1583	956	1852	0
Satd. Flow (RTOR)		28			8				189		3	
Volume (vph)	108	364	86	227	343	25	64	362	168	73	570	25
Lane Group Flow (vph)	112	469	0	264	428	0	72	407	189	83	676	0
Turn Type	Prot			Prot			Prot		Perm	Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases									2	6		
Total Split (s)	16.0	20.0	0.0	20.0	24.0	0.0	10.0	50.0	50.0	40.0	40.0	0.0
Act Effct Green (s)	9.8	14.2		14.7	22.3		6.2	39.2	39.2	32.0	32.0	
Actuated g/C Ratio	0.12	0.18		0.18	0.28		0.07	0.48	0.48	0.40	0.40	
v/c Ratio	0.54	0.75		0.82	0.44		0.55	0.24	0.22	0.22	0.92	
Uniform Delay, d1	35.9	29.3		32.8	24.5		38.7	12.2	0.0	17.0	24.2	
Delay	37.3	32.5		45.4	28.2		49.4	12.0	2.0	18.4	33.4	
LOS	D	C		D	C		D	B	A	B	C	
Approach Delay		33.4			34.8			13.2			31.8	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	61	126		147	110		41	63	0	30	261	
Queue Length 95th (ft)	113	180		#257	151		#99	90	28	63	#474	
Internal Link Dist (ft)		1588			3753			2316			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340			340			190			340		
50th Bay Block Time %											21%	
95th Bay Block Time %											8	
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 80.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 28.3 — Intersection LOS: C
Intersection Capacity Utilization 81.1% — ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way

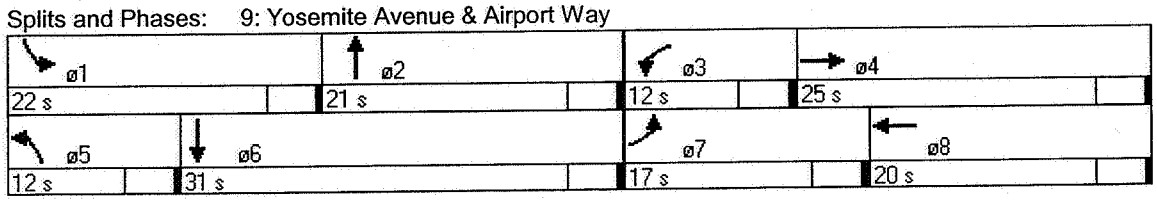


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3419	0	1770	3249	0	1770	1863	1583	1770	1762	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3419	0	1770	3249	0	1770	1863	1583	1770	1762	0
Satd. Flow (RTOR)		46			346				152		39	
Volume (vph)	170	391	114	109	293	356	67	313	167	324	190	108
Lane Group Flow (vph)	227	673	0	122	729	0	68	319	170	360	331	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	17.0	25.0	0.0	12.0	20.0	0.0	12.0	21.0	21.0	22.0	31.0	0.0
Act Effct Green (s)	12.1	20.9		7.6	13.7		7.3	15.5	15.5	17.1	27.8	
Actuated g/C Ratio	0.16	0.28		0.10	0.18		0.10	0.21	0.21	0.23	0.37	
v/c Ratio	0.79	0.68		0.69	0.83		0.40	0.83	0.38	0.89	0.49	
Uniform Delay, d1	31.1	23.1		34.9	15.0		34.0	28.4	2.5	28.9	16.5	
Delay	40.7	24.1		43.6	16.8		34.3	37.1	6.8	45.1	18.3	
LOS	D	C		D	B		C	D	A	D	B	
Approach Delay		28.3			20.6			27.5			32.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	110	150		60	95		32	153	6	176	115	
Queue Length 95th (ft)	#155	164		#136	156		71	#281	55	#330	195	
Internal Link Dist (ft)		2477			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %	15%	26%		8%	30%			32%				
95th Bay Block Time %	34%	30%		54%	48%			55%		31%		
Queuing Penalty (veh)	82	64		112	47			29		50		

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 74.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 26.9
Intersection LOS: C
Intersection Capacity Utilization 84.6%
ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*SR-120 EB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 EB Ramps*	North/South Street: *Yosemite Avenue*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*41*	*6*	*11*	*19*	*0*
Peak-Hour Factor, PHF	*0.58*	*0.58*	*0.58*	*0.45*	*0.45*	*0.45*
Hourly Flow Rate, HFR	*0*	*70*	*10*	*24*	*42*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*195*	*1*	*10*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.63*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*309*	*1*	*15*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LTR*	
v (vph)		*24*					*325*	
C (m) (vph)		*1518*					*821*	
v/c		*0.02*					*0.40*	
95% queue length		*0.05*					*1.91*	
Control Delay		*7.4*					*12.2*	
LOS		*A*					*B*	
Approach Delay	--	--				*12.2*		
Approach LOS	--	--				*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*SR-120 WB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Existing + Approved Devp.*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*16*	*296*	*0*	*0*	*31*	*149*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.80*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*17*	*314*	*0*	*0*	*38*	*186*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*2*	*0*	*9*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*2*	*0*	*13*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LTR*				
v (vph)	*17*			*15*				
C (m) (vph)	*1345*			*694*				
v/c	*0.01*			*0.02*				
95% queue length	*0.04*			*0.07*				
Control Delay	*7.7*			*10.3*				
LOS	*A*			*B*				
Approach Delay	--	--	*10.3*					
Approach LOS	--	--	*B*					

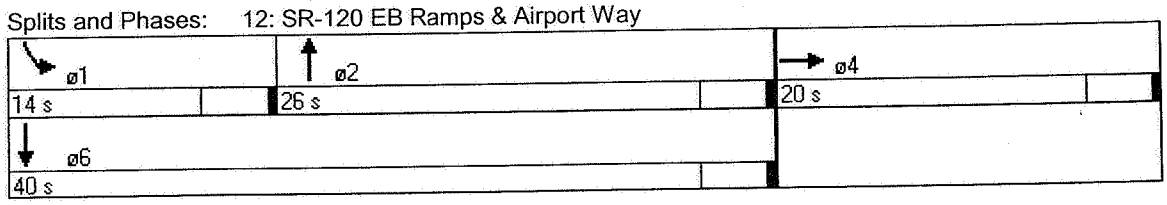
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1733	0	0	0	0	0	1798	0	1770	1863	0
Flt Permitted		0.964								0.950		
Satd. Flow (perm)	0	1733	0	0	0	0	0	1798	0	1770	1863	0
Satd. Flow (RTOR)		29						33				
Volume (vph)	399	0	139	0	0	0	0	225	79	152	241	0
Lane Group Flow (vph)	0	611	0	0	0	0	0	316	0	177	280	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	20.0	20.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	14.0	40.0	0.0
Act Effct Green (s)		16.8						12.8		8.8	22.8	
Actuated g/C Ratio		0.35						0.27		0.18	0.47	
v/c Ratio		0.98						0.63		0.57	0.32	
Uniform Delay, d1		15.1						14.1		19.7	7.4	
Delay		64.0						14.6		21.1	6.8	
LOS		E						B		C	A	
Approach Delay		64.0						14.6			12.4	
Approach LOS		E						B			B	
Queue Length 50th (ft)		~211						75		48	41	
Queue Length 95th (ft)		#428						139		106	69	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 48.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 35.7 — Intersection LOS: D
Intersection Capacity Utilization 71.9% — ICU Level of Service C

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: SR-120 EB Ramps & Airport Way



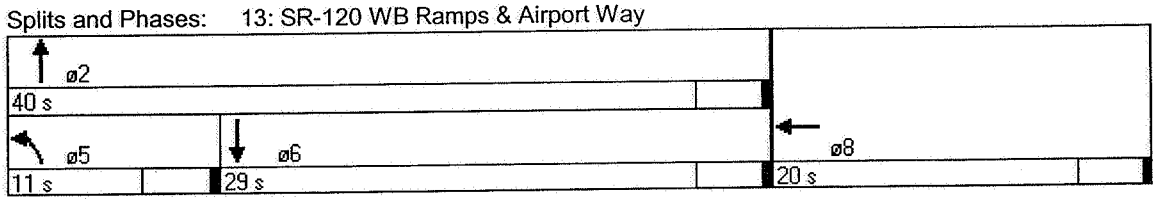
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1679	0	1770	1863	0	0	1801	0
Flt Permitted					0.981		0.950					
Satd. Flow (perm)	0	0	0	0	1679	0	1770	1863	0	0	1801	0
Satd. Flow (RTOR)					123						33	
Volume (vph)	0	0	0	76	2	116	44	587	0	0	332	107
Lane Group Flow (vph)	0	0	0	0	230	0	51	683	0	0	555	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	11.0	40.0	0.0	0.0	29.0	0.0
Act Effct Green (s)					9.0		6.4	28.8			25.2	
Actuated g/C Ratio					0.19		0.12	0.62			0.54	
v/c Ratio					0.54		0.23	0.59			0.56	
Uniform Delay, d1					8.0		22.6	4.7			7.5	
Delay					8.7		21.3	6.0			9.5	
LOS					A		C	A			A	
Approach Delay					8.7			7.1			9.5	
Approach LOS					A			A			A	
Queue Length 50th (ft)					15		8	72			36	
Queue Length 95th (ft)					72		42	193			197	
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 46.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 8.2
Intersection Capacity Utilization 56.2%

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 13: SR-120 WB Ramps & Airport Way



Existing + Approved Development + Project
(Synchro Software and HCS)

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Exist + Approved + Project (S)*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*36*	*11*	*312*	*44*	*0*
Peak-Hour Factor, PHF	*0.78*	*0.78*	*0.78*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*46*	*14*	*371*	*52*	*0*
Percent Heavy Vehicles	*8*	--	--	*8*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*216*	*7*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*257*	*8*	*3*
Percent Heavy Vehicles	*8*	*8*	*8*	*8*	*8*	*8*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*371*					*268*	
C (m) (vph)		*1506*					*245*	
v/c		*0.25*					*1.09*	
95% queue length		*0.97*					*11.57*	
Control Delay		*8.2*					*128.4*	
LOS		*A*					*F*	
Approach Delay	--	--					*128.4*	

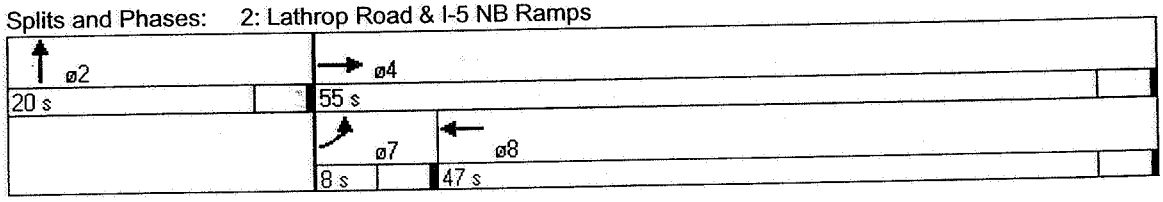
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1759	0	0	1636	0	0	1535	0	0	0	0
Flt Permitted	0.950							0.996				
Satd. Flow (perm)	1671	1759	0	0	1636	0	0	1535	0	0	0	0
Satd. Flow (RTOR)					122			184				
Volume (vph)	4	243	0	0	350	381	11	0	127	0	0	0
Lane Group Flow (vph)	5	293	0	0	881	0	0	200	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Total Split (s)	8.0	55.0	0.0	0.0	47.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	4.3	30.1			29.1			7.7				
Actuated g/C Ratio	0.08	0.64			0.62			0.16				
v/c Ratio	0.04	0.26			0.83			0.49				
Uniform Delay, d1	24.2	3.0			7.1			1.4				
Delay	29.8	3.3			9.9			6.1				
LOS	C	A			A			A				
Approach Delay		3.7			9.9			6.1				
Approach LOS		A			A			A				
Queue Length 50th (ft)	1	19			79			0				
Queue Length 95th (ft)	11	55			363			25				
Internal Link Dist (ft)		1048			1873			1252			1337	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 46.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 8.0
Intersection Capacity Utilization 69.2%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps

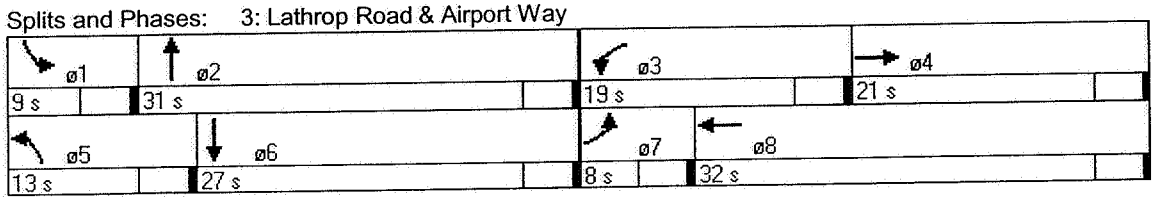


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1714	0	1671	1689	0	1671	1663	0	1671	1759	1495
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	1714	0	1671	1689	0	1671	1663	0	1671	1759	1495
Satd. Flow (RTOR)		12			25			40				28
Volume (vph)	29	172	35	231	236	86	61	256	149	52	162	23
Lane Group Flow (vph)	42	300	0	260	362	0	74	494	0	63	195	28
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	8.0	21.0	0.0	19.0	32.0	0.0	13.0	31.0	0.0	9.0	27.0	27.0
Act Effct Green (s)	4.2	15.0		13.8	28.9		8.0	22.8		5.2	20.2	20.2
Actuated g/C Ratio	0.06	0.21		0.19	0.41		0.11	0.32		0.07	0.28	0.28
v/c Ratio	0.44	0.81		0.80	0.52		0.41	0.88		0.53	0.39	0.06
Uniform Delay, d1	35.5	24.8		28.6	15.7		32.3	22.2		34.5	21.6	0.0
Delay	45.1	35.0		41.0	18.5		33.6	28.5		47.2	23.1	8.6
LOS	D	C		D	B		C	C		D	C	A
Approach Delay		36.2			27.9			29.2			27.0	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	21	138		126	136		35	157		31	78	0
Queue Length 95th (ft)	40	161		#246	220		69	#233		#77	123	12
Internal Link Dist (ft)		2567			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		325
50th Bay Block Time %												
95th Bay Block Time %				35%	19%							
Queuing Penalty (veh)				63	24							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 71
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 29.7
Intersection LOS: C
Intersection Capacity Utilization 74.9%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

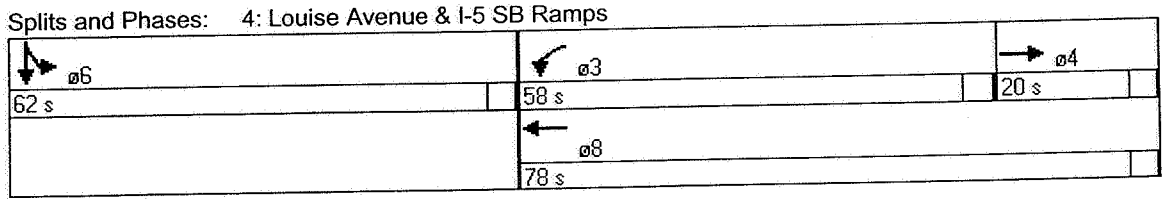


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1742	0	1671	1759	0	0	0	0	1671	1495	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1742	0	1671	1759	0	0	0	0	1671	1495	0
Satd. Flow (RTOR)		2									949	
Volume (vph)	0	40	3	518	46	0	0	0	0	483	0	8
Lane Group Flow (vph)	0	52	0	656	58	0	0	0	0	662	11	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	58.0	78.0	0.0	0.0	0.0	0.0	62.0	62.0	0.0
Act Effct Green (s)		9.0		53.4	64.0					53.0	53.0	
Actuated g/C Ratio		0.07		0.43	0.51					0.42	0.42	
v/c Ratio		0.41		0.92	0.06					0.94	0.01	
Uniform Delay, d1		55.1		34.4	15.2					35.0	0.0	
Delay		57.5		56.9	16.8					45.1	0.0	
LOS		E		E	B					D	A	
Approach Delay		57.5			53.6						44.4	
Approach LOS		E			D						D	
Queue Length 50th (ft)		42		549	25					527	0	
Queue Length 95th (ft)		80		#664	42					528	0	
Internal Link Dist (ft)		108			1489			875			1470	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				40%						27%		
95th Bay Block Time %				45%						27%		
Queuing Penalty (veh)				24						3		

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 125.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 49.4 Intersection LOS: D
Intersection Capacity Utilization 86.3% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps

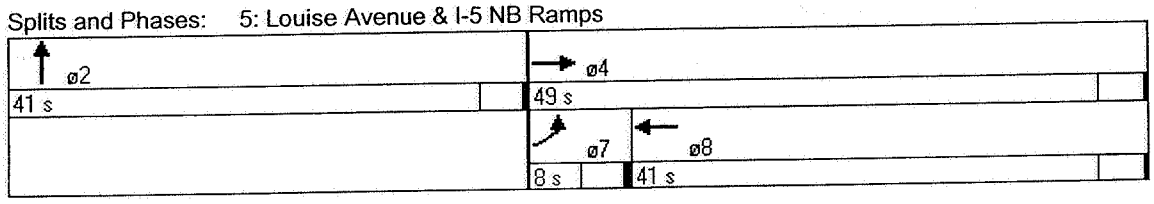


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3343	0	0	1759	1495	0	1694	1495	0	0	0
Flt Permitted	0.950							0.963				
Satd. Flow (perm)	1671	3343	0	0	1759	1495	0	1694	1495	0	0	0
Satd. Flow (RTOR)						611			160			
Volume (vph)	4	518	0	0	525	464	17	5	458	0	0	0
Lane Group Flow (vph)	6	730	0	0	691	611	0	30	627	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	8.0	49.0	0.0	0.0	41.0	41.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)	4.2	34.9			33.6	33.6		29.4	29.4			
Actuated g/C Ratio	0.05	0.48			0.46	0.46		0.40	0.40			
v/c Ratio	0.07	0.46			0.85	0.60		0.04	0.90			
Uniform Delay, d1	37.3	11.8			19.2	0.0		14.4	16.2			
Delay	41.5	13.8			28.7	1.8		14.4	21.4			
LOS	D	B			C	A		B	C			
Approach Delay		14.1			16.1			21.1				
Approach LOS		B			B			C				
Queue Length 50th (ft)	3	130			302	0		8	193			
Queue Length 95th (ft)	12	130			#420	17		22	255			
Internal Link Dist (ft)		1489			4042			680			1521	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %		16%										
95th Bay Block Time %		15%										
Queuing Penalty (veh)		1										

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 73
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 16.7
Intersection LOS: B
Intersection Capacity Utilization 65.7%
ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1759	1495	1671	1747	0	1671	1603	0	1671	1726	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	1759	1495	1671	1747	0	1671	1603	0	1671	1726	0
Satd. Flow (RTOR)			58		3			76			7	
Volume (vph)	30	627	96	66	598	27	127	117	171	26	135	20
Lane Group Flow (vph)	38	794	122	92	869	0	205	465	0	58	344	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	47.0	47.0	10.0	49.0	0.0	20.0	35.0	0.0	8.0	23.0	0.0
Act Effct Green (s)	4.0	43.0	43.0	6.0	48.3		14.9	29.9		4.0	19.0	
Actuated g/C Ratio	0.04	0.43	0.43	0.06	0.49		0.15	0.30		0.04	0.19	
v/c Ratio	0.58	1.04	0.18	0.91	1.02		0.82	0.87		0.85	1.02	
Uniform Delay, d1	49.0	28.0	8.5	47.1	26.0		41.6	27.9		48.0	39.9	
Delay	62.4	70.1	9.8	105.2	71.8		48.6	33.6		112.5	89.0	
LOS	E	E	A	F	E		D	C		F	F	
Approach Delay		62.1			75.0			38.2			92.4	
Approach LOS		E			E			D			F	
Queue Length 50th (ft)	24	~555	24	60	~635		127	195		38	~233	
Queue Length 95th (ft)	#59	#625	48	#113	#589		134	166		39	139	
Internal Link Dist (ft)		1681			3624			2312			2721	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %		46%			47%		7%	23%			37%	
95th Bay Block Time %		48%			45%		11%	17%			11%	
Queuing Penalty (veh)		17			42		42	42			13	

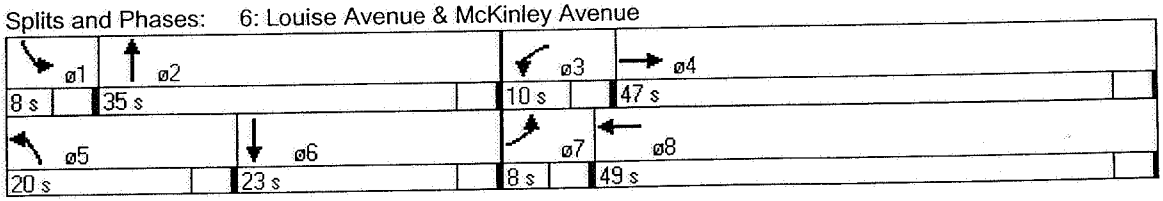
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 65.0 Intersection LOS: E
Intersection Capacity Utilization 92.8% ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

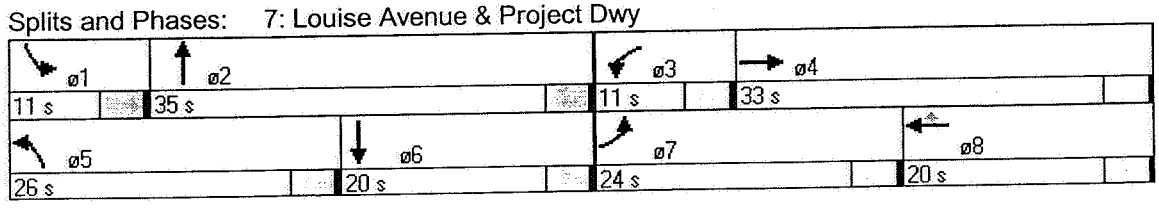


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3075	0	1671	3343	1495	1671	1508	0	1671	1513	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3075	0	1671	3343	1495	1671	1508	0	1671	1513	0
Satd. Flow (RTOR)		273				252		109			70	
Volume (vph)	286	217	251	45	429	232	313	5	100	50	5	64
Lane Group Flow (vph)	311	509	0	49	466	252	340	114	0	54	75	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	24.0	33.0	0.0	11.0	20.0	20.0	26.0	35.0	0.0	11.0	20.0	0.0
Act Effct Green (s)	17.3	29.6		6.6	14.1	14.1	18.7	23.7		6.6	6.8	
Actuated g/C Ratio	0.24	0.40		0.09	0.19	0.19	0.25	0.32		0.09	0.09	
v/c Ratio	0.79	0.36		0.34	0.73	0.51	0.80	0.20		0.38	0.37	
Uniform Delay, d1	28.4	7.4		35.8	27.9	0.0	27.6	0.8		35.9	2.0	
Delay	32.9	8.3		36.0	29.6	4.6	31.0	5.8		36.1	11.0	
LOS	C	A		D	C	A	C	A		D	B	
Approach Delay		17.6			21.8			24.7			21.5	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	143	41		23	114	0	153	1		26	2	
Queue Length 95th (ft)	#279	84		59	175	61	#295	31		64	38	
Internal Link Dist (ft)		3624			1582			172			150	
50th Up Block Time (%)												
95th Up Block Time (%)							36%					
Turn Bay Length (ft)	400			150		150						
50th Bay Block Time %												
95th Bay Block Time %					14%							
Queuing Penalty (veh)					3							

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 73.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 20.8 — Intersection LOS: C
Intersection Capacity Utilization 65.6% — ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy

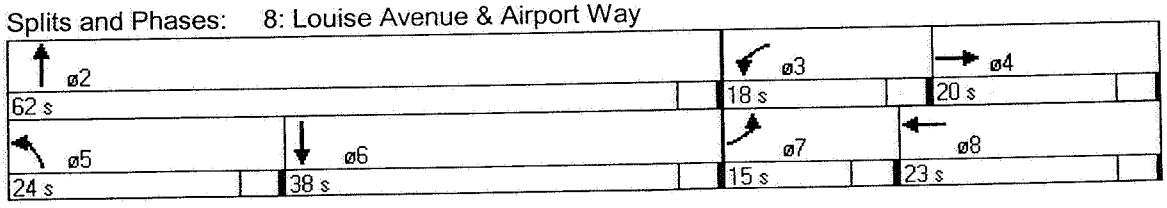


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3206	0	1671	3299	0	1671	3343	1495	1671	1673	0
Flt Permitted	0.950			0.950			0.950			0.538		
Satd. Flow (perm)	1671	3206	0	1671	3299	0	1671	3343	1495	946	1673	0
Satd. Flow (RTOR)		47			9				220		26	
Volume (vph)	91	216	81	160	352	33	232	293	180	24	323	155
Lane Group Flow (vph)	110	358	0	193	464	0	283	357	220	26	514	0
Turn Type	Prot			Prot			Prot		Perm	Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases									2	6		
Total Split (s)	15.0	20.0	0.0	18.0	23.0	0.0	24.0	62.0	62.0	38.0	38.0	0.0
Act Effct Green (s)	9.6	13.5		13.0	19.8		18.0	51.5	51.5	29.3	29.3	
Actuated g/C Ratio	0.10	0.15		0.14	0.22		0.20	0.57	0.57	0.32	0.32	
v/c Ratio	0.64	0.69		0.80	0.64		0.85	0.19	0.23	0.08	0.92	
Uniform Delay, d1	40.7	30.9		37.9	31.8		35.4	9.7	0.0	21.5	28.1	
Delay	44.2	33.2		53.4	35.0		47.3	9.6	1.4	22.8	36.2	
LOS	D	C		D	D		D	A	A	C	D	
Approach Delay		35.8			40.4			19.9			35.6	
Approach LOS		D			D			B			D	
Queue Length 50th (ft)	68	98		121	144		175	52	0	11	292	
Queue Length 95th (ft)	115	133		#209	182		#268	67	20	31	#335	
Internal Link Dist (ft)		1582			3753			2057			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340			340			190			340		
50th Bay Block Time %												
95th Bay Block Time %							28%				5%	
Queuing Penalty (veh)							25					

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 90.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 78.4% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way

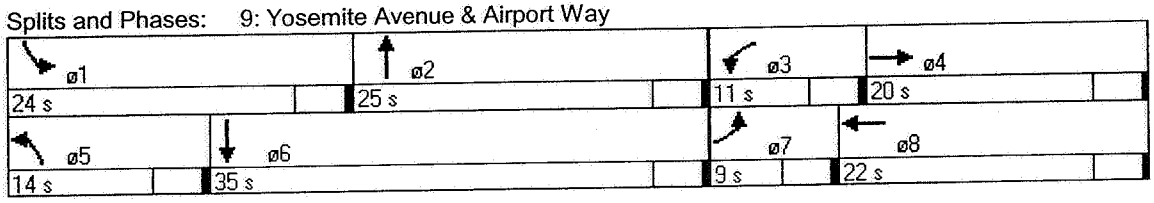


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3259	0	1671	3072	0	1671	1759	1495	1671	1677	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3259	0	1671	3072	0	1671	1759	1495	1671	1677	0
Satd. Flow (RTOR)		26			343				73		33	
Volume (vph)	59	242	48	75	248	292	87	278	66	286	265	119
Lane Group Flow (vph)	94	460	0	93	666	0	96	305	73	353	474	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	9.0	20.0	0.0	11.0	22.0	0.0	14.0	25.0	25.0	24.0	35.0	0.0
Act Effct Green (s)	5.2	15.6		6.8	14.3		8.5	16.2	16.2	17.7	28.2	
Actuated g/C Ratio	0.07	0.22		0.09	0.20		0.12	0.23	0.23	0.25	0.40	
v/c Ratio	0.75	0.62		0.59	0.74		0.49	0.75	0.18	0.84	0.68	
Uniform Delay, d1	32.7	24.0		32.7	12.1		31.1	25.0	0.0	25.9	16.9	
Delay	74.3	26.1		42.9	12.9		32.5	26.6	6.5	35.4	18.8	
LOS	E	C		D	B		C	C	A	D	B	
Approach Delay		34.3			16.6			24.7			25.9	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	46	101		44	71		43	134	0	158	178	
Queue Length 95th (ft)	#79	100		#93	106		92	221	28	#259	246	
Internal Link Dist (ft)		2260			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %		5%			15%			25%				
95th Bay Block Time %		4%		36%	33%			44%		11%	7%	
Queuing Penalty (veh)		4		60	22			33		25	11	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 70.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 24.8
Intersection LOS: C
Intersection Capacity Utilization 74.2%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 EB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Exist + Approved + Project (S)*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 EB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*33*	*5*	*10*	*45*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.56*	*0.56*	*0.56*
Hourly Flow Rate, HFR	*0*	*35*	*5*	*17*	*80*	*0*
Percent Heavy Vehicles	*8*	--	--	*8*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*110*	*3*	*5*
Peak-Hour Factor, PHF	*0.75*	*0.75*	*0.75*	*0.84*	*0.84*	*0.84*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*130*	*3*	*5*
Percent Heavy Vehicles	*8*	*8*	*8*	*8*	*8*	*8*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LTR*	
v (vph)		*17*					*138*	
C (m) (vph)		*1532*					*819*	
v/c		*0.01*					*0.17*	
95% queue length		*0.03*					*0.60*	
Control Delay		*7.4*					*10.3*	
LOS		*A*					*B*	
Approach Delay	--	--					*10.3*	

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*AM*

Site Information

Intersection	*SR-120 WB Ramps & Yosemite Ave*
Jurisdiction	
Analysis Year	*Exist + Approved + Project (S)*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *SR-120 WB Ramps* | North/South Street: *Yosemite Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*24*	*114*	*0*	*0*	*45*	*158*
Peak-Hour Factor, PHF	*0.77*	*0.77*	*0.77*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR	*31*	*148*	*0*	*0*	*51*	*179*
Percent Heavy Vehicles	*8*	--	--	*8*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*11*	*0*	*14*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.69*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*15*	*0*	*20*	*0*	*0*	*0*
Percent Heavy Vehicles	*8*	*8*	*8*	*8*	*8*	*8*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LTR*				
v (vph)	*31*			*35*				
C (m) (vph)	*1303*			*747*				
v/c	*0.02*			*0.05*				
95% queue length	*0.07*			*0.15*				
Control Delay	*7.8*			*10.1*				
LOS	*A*			*B*				
Approach Delay	--	--	*10.1*					

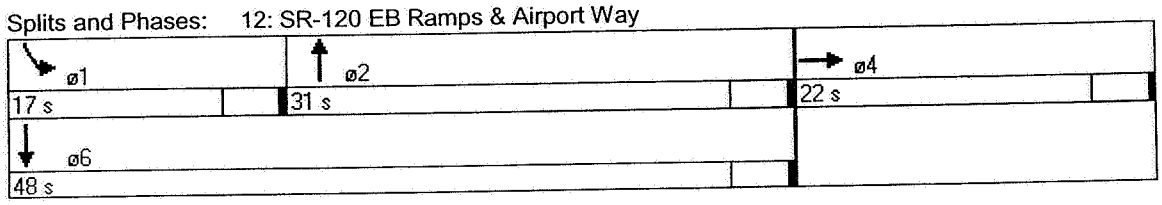
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1640	0	0	0	0	0	1708	0	1671	1759	0
Flt Permitted		0.964								0.950		
Satd. Flow (perm)	0	1640	0	0	0	0	0	1708	0	1671	1759	0
Satd. Flow (RTOR)		23						23				
Volume (vph)	135	2	45	0	0	0	0	246	67	133	176	0
Lane Group Flow (vph)	0	240	0	0	0	0	0	392	0	156	207	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	22.0	22.0	0.0	0.0	0.0	0.0	0.0	31.0	0.0	17.0	48.0	0.0
Act Effct Green (s)		12.0						25.2		9.8	37.0	
Actuated g/C Ratio		0.21						0.47		0.18	0.69	
v/c Ratio		0.65						0.48		0.53	0.17	
Uniform Delay, d1		18.9						10.4		21.8	3.5	
Delay		17.4						14.4		21.3	4.9	
LOS		B						B		C	A	
Approach Delay		17.4						14.4			12.0	
Approach LOS		B						B			B	
Queue Length 50th (ft)		54						90		40	22	
Queue Length 95th (ft)		117						173		108	54	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 54
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 14.2
Intersection Capacity Utilization 53.5%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

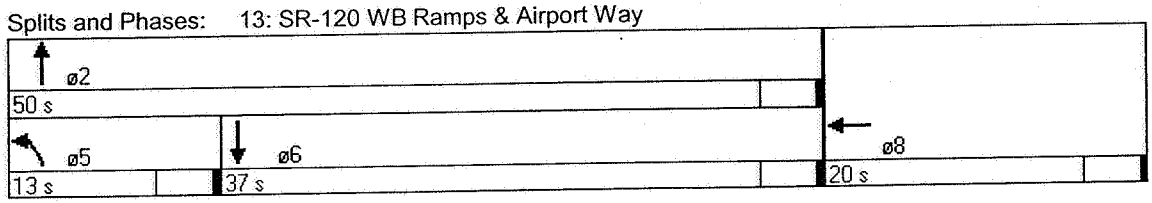


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1546	0	1671	1759	0	0	1610	0
Flt Permitted					0.992		0.950					
Satd. Flow (perm)	0	0	0	0	1546	0	1671	1759	0	0	1610	0
Satd. Flow (RTOR)					279						164	
Volume (vph)	0	0	0	48	0	262	121	289	0	0	211	357
Lane Group Flow (vph)	0	0	0	0	330	0	149	357	0	0	653	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	13.0	50.0	0.0	0.0	37.0	0.0
Act Effct Green (s)					8.8		8.4	35.1			25.3	
Actuated g/C Ratio					0.17		0.15	0.67			0.48	
v/c Ratio					0.67		0.58	0.30			0.76	
Uniform Delay, d1					2.9		22.1	3.3			8.1	
Delay					6.0		31.3	4.0			11.5	
LOS					A		C	A			B	
Approach Delay					6.0			12.0			11.5	
Approach LOS					A			B			B	
Queue Length 50th (ft)					14		41	29			117	
Queue Length 95th (ft)					86		#119	80			135	
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 52.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 10.4
Intersection LOS: B
Intersection Capacity Utilization 76.2%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: SR-120 WB Ramps & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kimley-Horn and Associates*
Agency/Co.	*Manteca, CA*
Date Performed	*11/14/2003*
Analysis Time Period	*PM*

Site Information

Intersection	*Lathrop Road & I-5 SB Ramps*
Jurisdiction	
Analysis Year	*Exist + Approved + Project (S)*
Project ID	*Assieh Industrial Development EIR*

East/West Street: *Lathrop Road* | North/South Street: *I-5 SB Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*82*	*2*	*146*	*40*	*0*
Peak-Hour Factor, PHF	*0.72*	*0.72*	*0.72*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*113*	*2*	*156*	*43*	*0*
Percent Heavy Vehicles	*8*	--	--	*8*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*421*	*2*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.93*	*0.93*	*0.93*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*452*	*2*	*3*
Percent Heavy Vehicles	*8*	*8*	*8*	*8*	*8*	*8*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*					*LTR*	
v (vph)		*156*					*457*	
C (m) (vph)		*1437*					*484*	
v/c		*0.11*					*0.94*	
95% queue length		*0.36*					*11.51*	
Control Delay		*7.8*					*57.5*	
LOS		*A*					*F*	
Approach Delay	--	--					*57.5*	

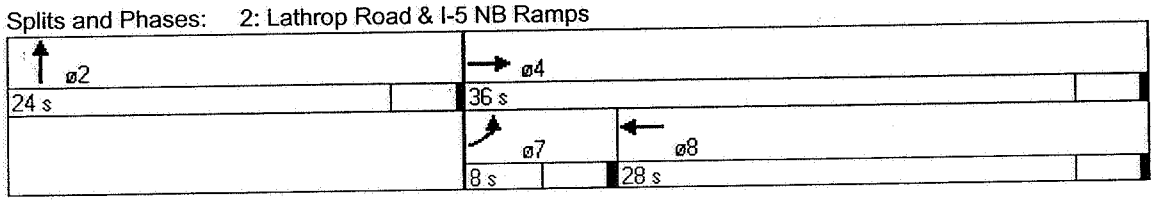
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1759	0	0	1613	0	0	1526	0	0	0	0
Flt Permitted	0.950							0.999				
Satd. Flow (perm)	1671	1759	0	0	1613	0	0	1526	0	0	0	0
Satd. Flow (RTOR)					160			279				
Volume (vph)	13	486	0	0	177	283	9	0	394	0	0	0
Lane Group Flow (vph)	15	559	0	0	489	0	0	429	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Total Split (s)	8.0	36.0	0.0	0.0	28.0	0.0	24.0	24.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	4.3	16.9			15.9			10.4				
Actuated g/C Ratio	0.10	0.46			0.44			0.29				
v/c Ratio	0.09	0.69			0.62			0.67				
Uniform Delay, d1	19.1	6.4			5.9			4.1				
Delay	23.8	8.3			6.7			5.5				
LOS	C	A			A			A				
Approach Delay		8.7			6.7			5.5				
Approach LOS		A			A			A				
Queue Length 50th (ft)	2	62			31			16				
Queue Length 95th (ft)	20	199			184			108				
Internal Link Dist (ft)		1048			2053			1194			1343	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %		19%										
Queuing Penalty (veh)		1										

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 36.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 7.1
Intersection Capacity Utilization 62.6%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1715	0	1671	1701	0	1671	1604	0	1671	1759	1495
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	1715	0	1671	1701	0	1671	1604	0	1671	1759	1495
Satd. Flow (RTOR)		10			16			74				53
Volume (vph)	44	444	87	220	273	76	43	213	301	124	325	45
Lane Group Flow (vph)	49	597	0	247	392	0	49	584	0	146	382	53
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Total Split (s)	11.0	36.0	0.0	17.0	42.0	0.0	9.0	35.0	0.0	12.0	38.0	38.0
Act Effct Green (s)	6.7	32.0		13.0	40.2		5.0	31.0		8.0	35.8	35.8
Actuated g/C Ratio	0.07	0.32		0.13	0.40		0.05	0.31		0.08	0.36	0.36
v/c Ratio	0.45	1.07		1.14	0.57		0.59	1.07		1.09	0.61	0.09
Uniform Delay, d1	46.7	33.8		44.3	22.9		48.3	30.2		46.8	27.2	0.0
Delay	45.3	80.2		118.1	23.6		58.6	75.4		122.1	27.8	6.6
LOS	D	F		F	C		E	E		F	C	A
Approach Delay		77.6			60.1			74.1			49.5	
Approach LOS		E			E			E			D	
Queue Length 50th (ft)	31	~422		~185	189		31	~304		~106	204	0
Queue Length 95th (ft)	68	#625		#333	283		#83	#577		#211	282	15
Internal Link Dist (ft)		2588			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		325
50th Bay Block Time %		41%		11%	10%			7%				
95th Bay Block Time %		62%		52%	27%			37%				
Queuing Penalty (veh)		25		122	45			10				

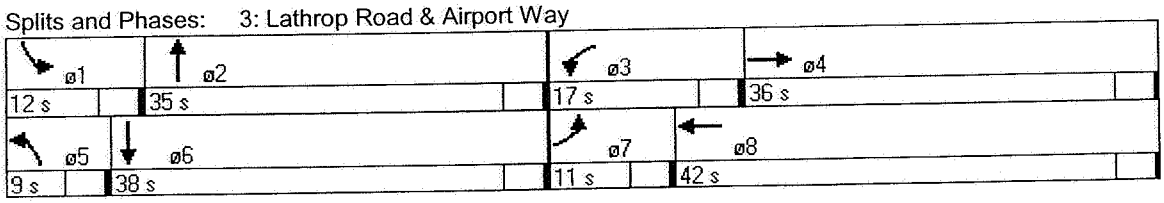
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 65.7 — Intersection LOS: E
Intersection Capacity Utilization 101.0% — ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

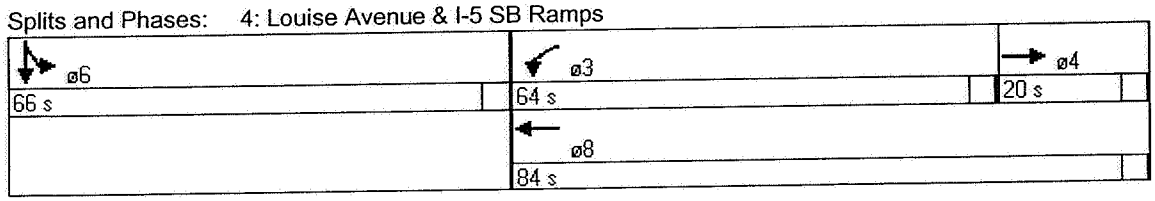


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1728	0	1671	1759	0	0	0	0	1671	1583	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1728	0	1671	1759	0	0	0	0	1671	1583	0
Satd. Flow (RTOR)		4									4	
Volume (vph)	0	57	9	548	52	0	0	0	0	550	2	3
Lane Group Flow (vph)	0	91	0	623	59	0	0	0	0	671	6	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	20.0	0.0	64.0	84.0	0.0	0.0	0.0	0.0	66.0	66.0	0.0
Act Effct Green (s)		11.7		51.5	63.8					56.1	56.1	
Actuated g/C Ratio		0.09		0.40	0.49					0.43	0.43	
v/c Ratio		0.58		0.93	0.07					0.92	0.01	
Uniform Delay, d1		55.8		37.2	16.5					34.5	6.8	
Delay		61.5		49.7	17.4					52.6	17.8	
LOS		E		D	B					D	B	
Approach Delay		61.5			46.9						52.3	
Approach LOS		E			D						D	
Queue Length 50th (ft)		82		557	27					613	0	
Queue Length 95th (ft)		112		#793	50					#764	0	
Internal Link Dist (ft)		108			1489			860			1467	
50th Up Block Time (%)												
95th Up Block Time (%)		7%										
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				40%						31%		
95th Bay Block Time %				48%						38%		
Queuing Penalty (veh)				26						2		

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 129
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 50.3 Intersection LOS: D
Intersection Capacity Utilization 85.0% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3343	0	0	1759	1495	0	1701	1495	0	0	0
Flt Permitted	0.950							0.967				
Satd. Flow (perm)	1671	3343	0	0	1759	1495	0	1701	1495	0	0	0
Satd. Flow (RTOR)						706			140			
Volume (vph)	17	597	0	0	579	660	9	4	696	0	0	0
Lane Group Flow (vph)	20	686	0	0	689	786	0	16	870	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	8.0	48.0	0.0	0.0	40.0	40.0	52.0	52.0	52.0	0.0	0.0	0.0
Act Effct Green (s)	4.0	39.1			36.0	36.0		48.1	48.1			
Actuated g/C Ratio	0.04	0.41			0.38	0.38		0.51	0.51			
v/c Ratio	0.30	0.50			1.03	0.78		0.02	1.06			
Uniform Delay, d1	47.9	20.2			30.8	2.2		12.7	20.5			
Delay	47.2	20.8			72.8	4.4		13.2	65.9			
LOS	D	C			E	A		B	E			
Approach Delay		21.6			36.4			65.0				
Approach LOS		C			D			E				
Queue Length 50th (ft)	12	157			~394	29		4	~453			
Queue Length 95th (ft)	36	199			#640	115		14	#668			
Internal Link Dist (ft)		1489			4038			689			1512	
50th Up Block Time (%)									3%			
95th Up Block Time (%)									460			
Turn Bay Length (ft)	100								6%			
50th Bay Block Time %		25%							30%			
95th Bay Block Time %		30%							3			
Queuing Penalty (veh)		5										

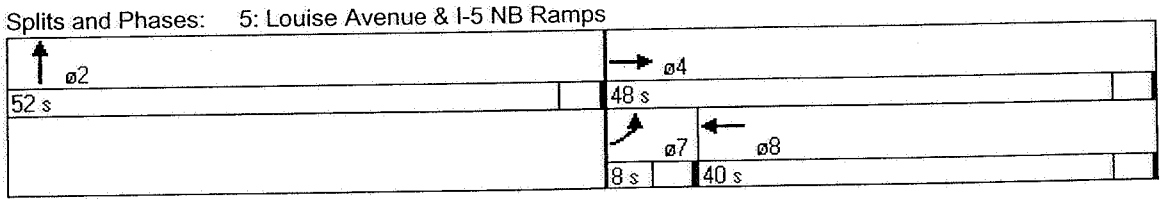
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 95.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 79.5% ICU Level of Service C

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	1759	1495	1671	1752	0	1671	1611	0	1671	1691	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	1759	1495	1671	1752	0	1671	1611	0	1671	1691	0
Satd. Flow (RTOR)			78		1			45			10	
Volume (vph)	27	758	210	35	856	21	232	61	78	14	59	21
Lane Group Flow (vph)	28	790	219	39	986	0	305	183	0	17	95	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Total Split (s)	8.0	77.0	77.0	14.0	83.0	0.0	38.0	50.0	0.0	9.0	21.0	0.0
Act Effct Green (s)	4.0	75.9	75.9	8.2	79.7		28.7	41.4		5.0	12.0	
Actuated g/C Ratio	0.03	0.55	0.55	0.06	0.58		0.21	0.30		0.03	0.09	
v/c Ratio	0.58	0.82	0.26	0.40	0.98		0.88	0.36		0.29	0.61	
Uniform Delay, d1	69.1	28.0	11.0	65.8	31.1		55.3	29.5		69.9	53.9	
Delay	95.0	36.5	12.7	66.4	62.6		58.6	29.1		71.1	56.2	
LOS	F	D	B	E	E		E	C		E	E	
Approach Delay		33.0			62.7			47.5			58.5	
Approach LOS		C			E			D			E	
Queue Length 50th (ft)	26	630	69	36	~976		274	91		16	78	
Queue Length 95th (ft)	#85	#988	136	77	#1306		325	121		42	131	
Internal Link Dist (ft)		1685			3618			2536			2644	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125		125	125			125			125		
50th Bay Block Time %		39%			39%		44%					
95th Bay Block Time %		46%	7%		53%		49%	3%			7%	
Queuing Penalty (veh)		12	27		17		85	4				

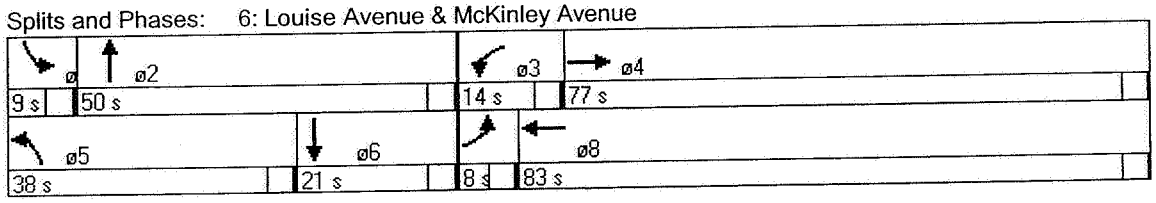
Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 138.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 48.2
Intersection LOS: D
Intersection Capacity Utilization 82.3%
ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

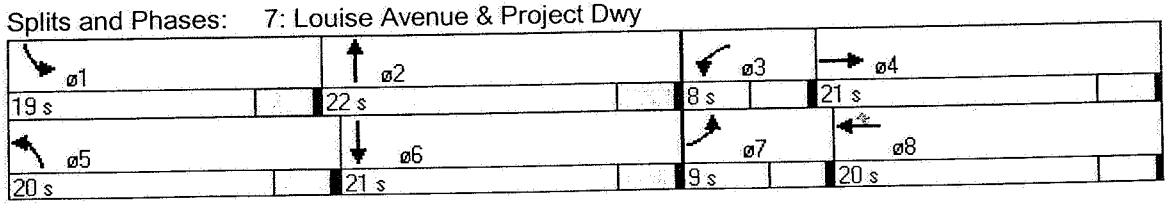


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3055	0	1671	3343	1495	1671	1506	0	1671	1499	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3055	0	1671	3343	1495	1671	1506	0	1671	1499	0
Satd. Flow (RTOR)		457				84		118			240	
Volume (vph)	95	327	440	86	376	77	307	5	109	245	5	299
Lane Group Flow (vph)	103	833	0	93	409	84	334	123	0	266	330	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	9.0	21.0	0.0	8.0	20.0	20.0	20.0	22.0	0.0	19.0	21.0	0.0
Act Effct Green (s)	5.1	13.5		4.1	12.5	12.5	14.8	11.8		12.9	9.9	
Actuated g/C Ratio	0.09	0.23		0.07	0.21	0.21	0.25	0.20		0.22	0.17	
v/c Ratio	0.71	0.79		0.79	0.57	0.22	0.79	0.31		0.72	0.73	
Uniform Delay, d1	25.8	9.1		26.6	20.5	0.0	20.3	0.8		21.0	5.9	
Delay	57.8	10.2		80.9	21.7	6.1	32.4	5.7		28.0	7.9	
LOS	E	B		F	C	A	C	A		C	A	
Approach Delay		15.5			28.9			25.2			16.9	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)	38	62		34	68	0	111	1		86	27	
Queue Length 95th (ft)	#130	142		#127	123	32	#279	35		#214	107	
Internal Link Dist (ft)		3618			1588			243			259	
50th Up Block Time (%)												
95th Up Block Time (%)							21%					
Turn Bay Length (ft)	400			150		150						
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 58.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 20.6 Intersection LOS: C
Intersection Capacity Utilization 82.6% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3162	0	1671	3309	0	1671	3343	1495	1671	1738	0
Flt Permitted	0.950			0.950			0.950			0.513		
Satd. Flow (perm)	1671	3162	0	1671	3309	0	1671	3343	1495	903	1738	0
Satd. Flow (RTOR)		97			6				183		5	
Volume (vph)	190	391	222	227	352	25	107	362	163	73	570	50
Lane Group Flow (vph)	198	638	0	264	438	0	120	407	183	83	705	0
Turn Type	Prot			Prot			Prot		Perm	Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases									2	6		
Total Split (s)	23.0	22.0	0.0	23.0	22.0	0.0	14.0	55.0	55.0	41.0	41.0	0.0
Act Effct Green (s)	15.7	18.0		18.0	20.3		9.5	50.6	50.6	37.0	37.0	
Actuated g/C Ratio	0.16	0.18		0.18	0.21		0.10	0.51	0.51	0.38	0.38	
v/c Ratio	0.75	0.97		0.87	0.64		0.74	0.24	0.21	0.24	1.07	
Uniform Delay, d1	39.5	33.9		39.1	35.2		43.3	13.3	0.0	21.1	30.5	
Delay	39.5	57.6		50.3	36.5		54.6	13.6	2.1	22.6	82.7	
LOS	D	E		D	D		D	B	A	C	F	
Approach Delay		53.3			41.7			17.6			76.4	
Approach LOS		D			D			B			E	
Queue Length 50th (ft)	121	185		163	133		75	72	0	36	~400	
Queue Length 95th (ft)	193	#305		#275	183		#159	101	30	72	#708	
Internal Link Dist (ft)		1588			3753			1835			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340			340			190			340		
50th Bay Block Time %											13%	
95th Bay Block Time %											37%	
Queuing Penalty (veh)											20	

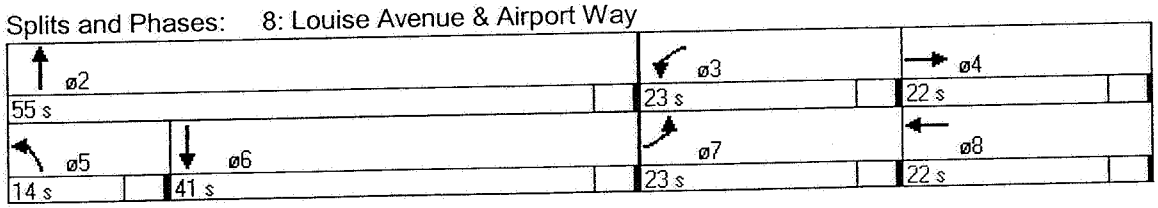
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 48.2 — Intersection LOS: D
Intersection Capacity Utilization 90.8% — ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3229	0	1671	3065	0	1671	1759	1495	1671	1698	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3229	0	1671	3065	0	1671	1759	1495	1671	1698	0
Satd. Flow (RTOR)		45			355				142		23	
Volume (vph)	170	391	114	109	293	365	67	347	167	317	299	91
Lane Group Flow (vph)	227	673	0	122	739	0	68	354	170	352	433	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	14.0	24.0	0.0	10.0	20.0	0.0	10.0	23.0	23.0	23.0	36.0	0.0
Act Effct Green (s)	10.1	18.2		6.1	14.1		5.9	17.7	17.7	17.9	31.9	
Actuated g/C Ratio	0.13	0.24		0.08	0.19		0.08	0.23	0.23	0.24	0.42	
v/c Ratio	1.02	0.83		0.92	0.86		0.54	0.87	0.37	0.90	0.60	
Uniform Delay, d1	33.4	26.0		35.1	15.4		35.4	27.6	3.7	28.6	16.4	
Delay	100.1	28.1		94.7	18.4		41.3	38.5	7.3	43.4	17.9	
LOS	F	C		F	B		D	D	A	D	B	
Approach Delay		46.3			29.2			29.8			29.4	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	~130	155		62	96		34	169	10	170	159	
Queue Length 95th (ft)	#201	170		#163	#182		#85	#314	59	#322	180	
Internal Link Dist (ft)		2615			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %	25%	28%		10%	30%			36%				
95th Bay Block Time %	51%	32%		64%	50%			56%		29%		
Queuing Penalty (veh)	127	68		137	49			31		62		

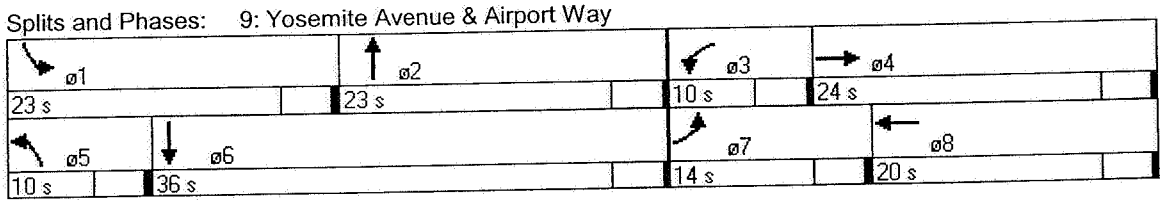
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 75.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 34.3 — Intersection LOS: C
Intersection Capacity Utilization 86.3% — ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	Kimley-Horn and Associates
Agency/Co.	Manteca, CA
Date Performed	11/14/2003
Analysis Time Period	PM

Site Information

Intersection	SR-120 EB Ramps & Yosemite Ave
Jurisdiction	
Analysis Year	Exist + Approved + Project (S)
Project ID	Assieh Industrial Development EIR

East/West Street: SR-120 EB Ramps | North/South Street: Yosemite Avenue

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	41	6	11	19	0
Peak-Hour Factor, PHF	0.58	0.58	0.58	0.45	0.45	0.45
Hourly Flow Rate, HFR	0	70	10	24	42	0
Percent Heavy Vehicles	8	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	204	1	10
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.63	0.63	0.63
Hourly Flow Rate, HFR	0	0	0	323	1	15
Percent Heavy Vehicles	8	8	8	8	8	8
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	1	0
Configuration					LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT					LTR	
v (vph)		24					339	
C (m) (vph)		1481					806	
v/c		0.02					0.42	
95% queue length		0.05					2.10	
Control Delay		7.5					12.7	
LOS		A					B	
Approach Delay	--	--					12.7	

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	Kimley-Horn and Associates
Agency/Co.	Manteca, CA
Date Performed	11/14/2003
Analysis Time Period	PM

Site Information

Intersection	SR-120 WB Ramps & Yosemite Ave
Jurisdiction	
Analysis Year	Exist + Approved + Project (S)
Project ID	Assieh Industrial Development EIR

East/West Street: SR-120 WB Ramps | North/South Street: Yosemite Avenue

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	16	305	0	0	31	176
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.80	0.80	0.80
Hourly Flow Rate, HFR	17	324	0	0	38	219
Percent Heavy Vehicles	8	--	--	8	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2	0	9	0	0	0
Peak-Hour Factor, PHF	0.69	0.69	0.69	0.92	0.92	0.92
Hourly Flow Rate, HFR	2	0	13	0	0	0
Percent Heavy Vehicles	8	8	8	8	8	8
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration		LTR				

Delay, Queue Length, and Level of Service

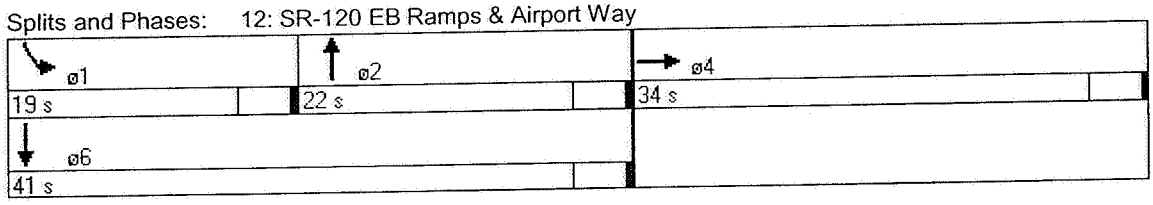
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT			LTR				
v (vph)	17			15				
C (m) (vph)	1274			669				
v/c	0.01			0.02				
95% queue length	0.04			0.07				
Control Delay	7.9			10.5				
LOS	A			B				
Approach Delay	--	--	10.5					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1638	0	0	0	0	0	1698	0	1671	1759	0
Flt Permitted		0.964								0.950		
Satd. Flow (perm)	0	1638	0	0	0	0	0	1698	0	1671	1759	0
Satd. Flow (RTOR)		27						22				
Volume (vph)	408	0	139	0	0	0	0	225	79	234	241	0
Lane Group Flow (vph)	0	, 622	0	0	0	0	0	316	0	272	280	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	34.0	34.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	19.0	41.0	0.0
Act Effct Green (s)		27.6						15.4		13.8	33.3	
Actuated g/C Ratio		0.40						0.22		0.20	0.48	
v/c Ratio		0.93						0.80		0.82	0.33	
Uniform Delay, d1		18.8						23.3		26.3	10.9	
Delay		33.7						28.9		37.9	11.7	
LOS		C						C		D	B	
Approach Delay		33.7						28.9			24.6	
Approach LOS		C						C			C	
Queue Length 50th (ft)		258						127		122	74	
Queue Length 95th (ft)		#450						#244		#226	117	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 69.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 29.3
Intersection LOS: C
Intersection Capacity Utilization 77.7%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

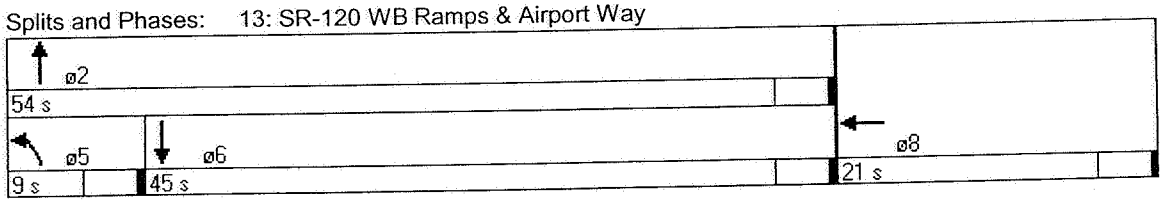


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1579	0	1671	1759	0	0	1701	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	1579	0	1671	1759	0	0	1701	0
Satd. Flow (RTOR)					113						34	
Volume (vph)	0	0	0	76	2	141	44	596	0	0	414	134
Lane Group Flow (vph)	0	0	0	0	260	0	51	693	0	0	694	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Total Split (s)	0.0	0.0	0.0	21.0	21.0	0.0	9.0	54.0	0.0	0.0	45.0	0.0
Act Effct Green (s)					10.7		5.2	35.9			31.3	
Actuated g/C Ratio					0.19		0.09	0.65			0.57	
v/c Ratio					0.66		0.34	0.61			0.71	
Uniform Delay, d1					11.7		26.5	5.1			8.9	
Delay					13.2		31.0	6.2			10.8	
LOS					B		C	A			B	
Approach Delay					13.2			7.9			10.8	
Approach LOS					B			A			B	
Queue Length 50th (ft)					42		16	100			165	
Queue Length 95th (ft)					117		#56	219			158	
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

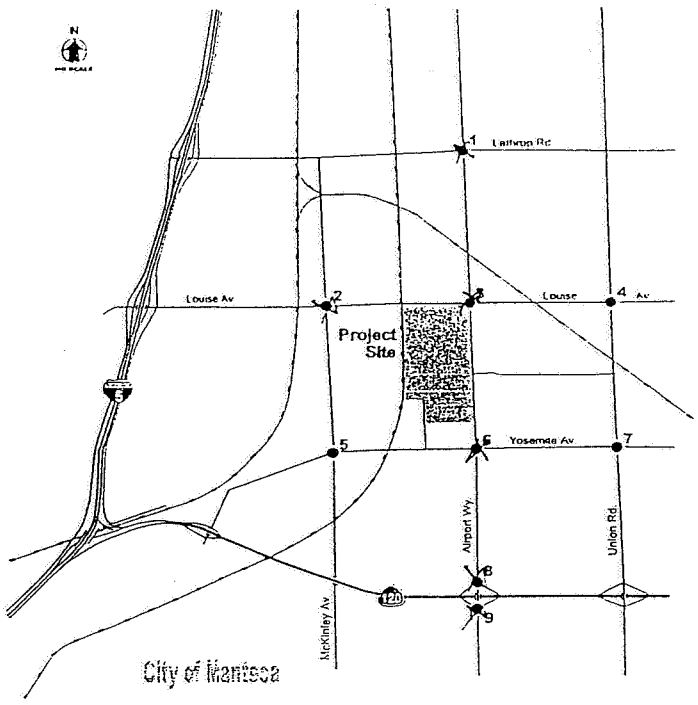
Intersection Summary

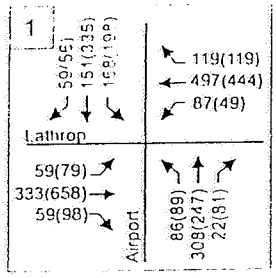
Cycle Length: 75
Actuated Cycle Length: 55.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 9.9
Intersection LOS: A
Intersection Capacity Utilization 60.0%
ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

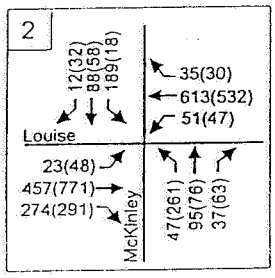
Splits and Phases: 13: SR-120 WB Ramps & Airport Way

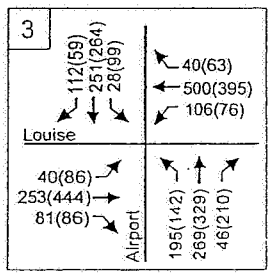


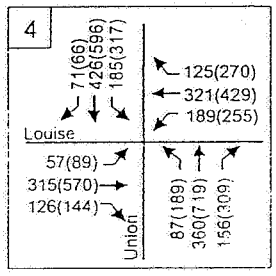
Cumulative 2025 Volume Forecast
(City of Manteca General Plan Traffic Model)

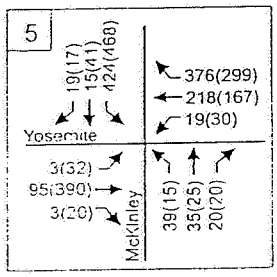


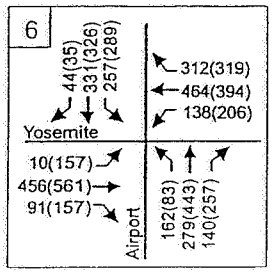


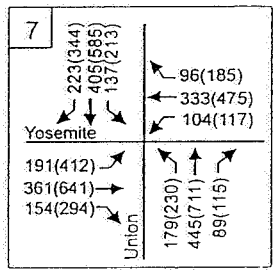


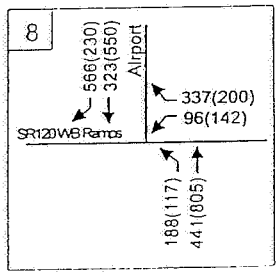


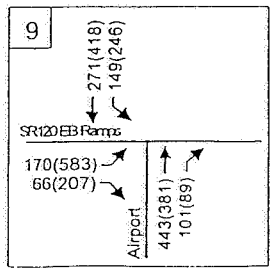


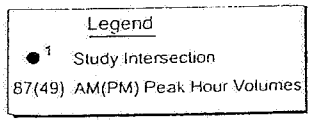












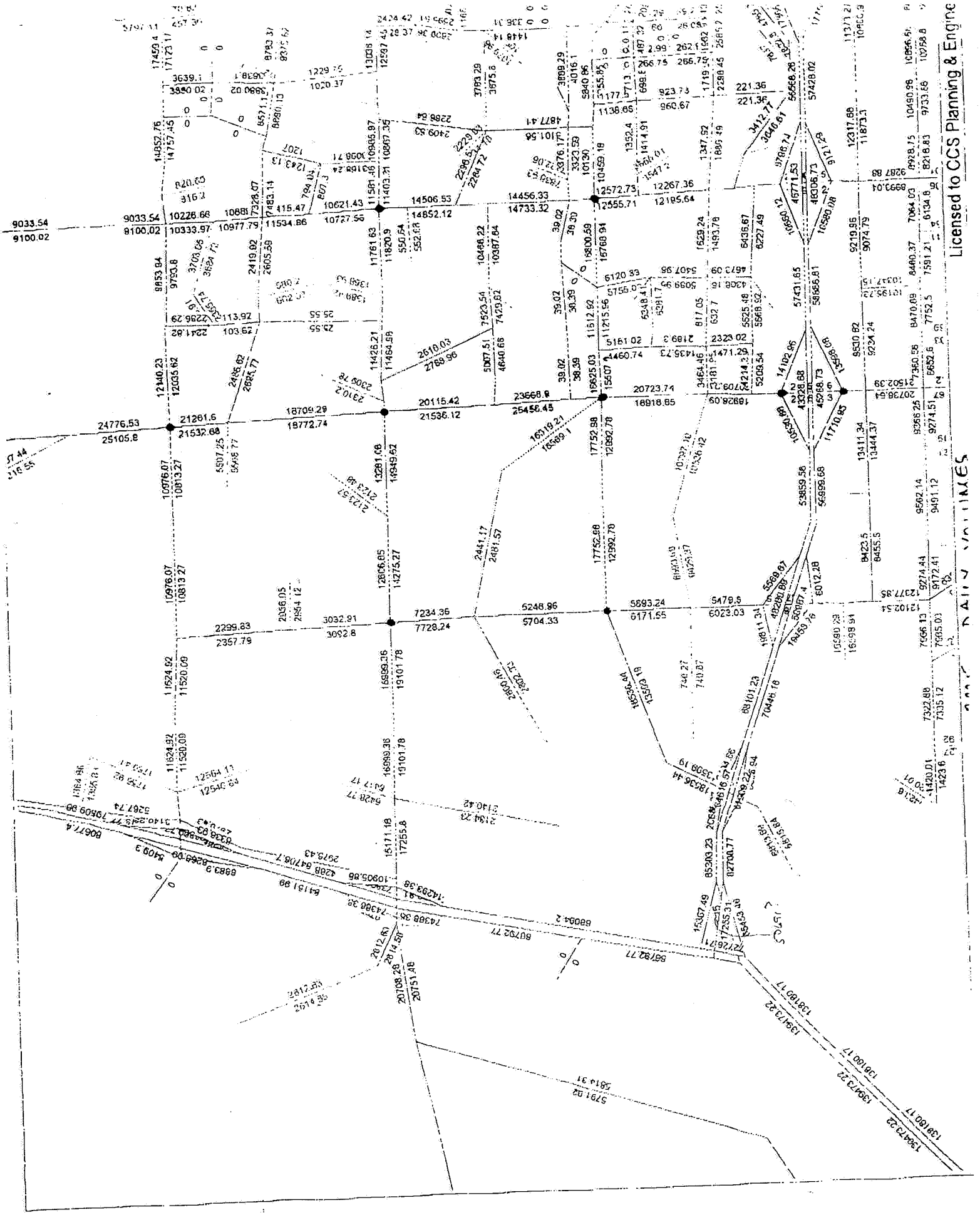
Villa Ticino West TIS
Manteca, CA

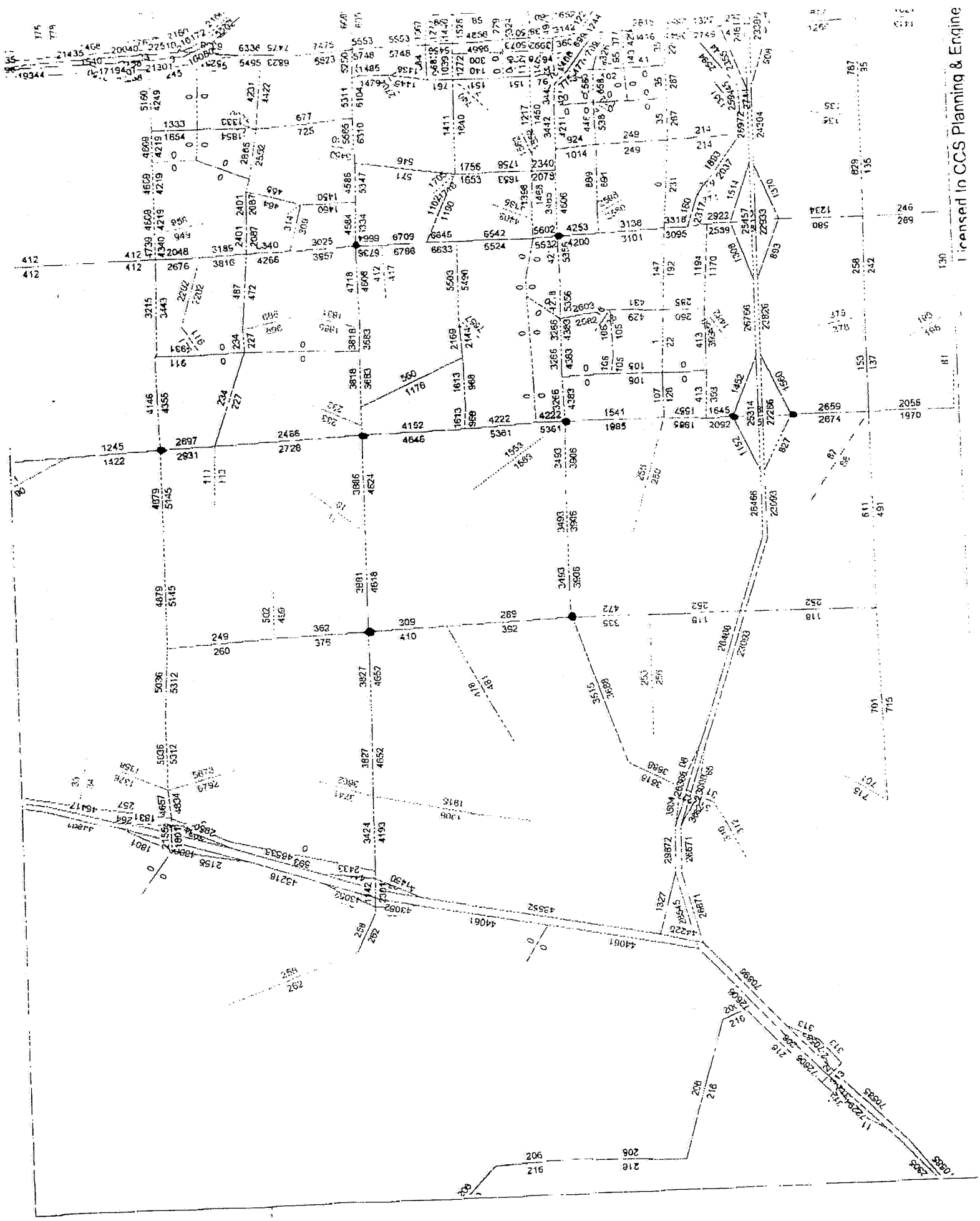
Cumulative + Project Peak Hour Volumes

Figure 6

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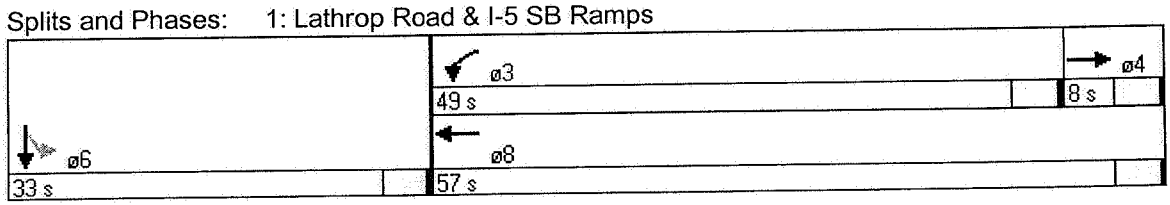
Cumulative 2025
(Synchro Software)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Flt Permitted				0.950							0.954	
Satd. Flow (perm)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Satd. Flow (RTOR)		13									1	
Volume (vph)	0	36	11	637	44	0	0	0	0	390	7	3
Lane Group Flow (vph)	0	60	0	758	52	0	0	0	0	0	476	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	8.0	0.0	49.0	57.0	0.0	0.0	0.0	0.0	33.0	33.0	0.0
Act Effct Green (s)		4.4		36.2	41.9						24.0	
Actuated g/C Ratio		0.06		0.48	0.56						0.32	
v/c Ratio		0.53		0.91	0.05						0.85	
Uniform Delay, d1		27.9		17.8	7.0						23.8	
Delay		49.0		23.9	7.8						32.5	
LOS		D		C	A						C	
Approach Delay		49.0			22.9						32.5	
Approach LOS		D			C						C	
Queue Length 50th (ft)		27		365	12						238	
Queue Length 95th (ft)		#70		#491	25						#353	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				32%								
95th Bay Block Time %				37%								
Queuing Penalty (veh)				18								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 75.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 81.7% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps

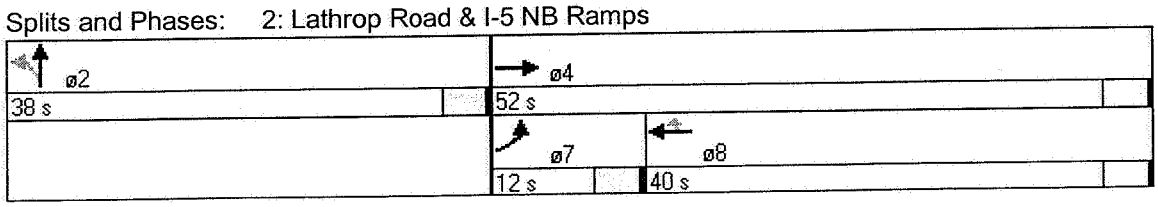


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1643	0	0	0	0
Flt Permitted	0.950							0.981				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1643	0	0	0	0
Satd. Flow (RTOR)						569		101				
Volume (vph)	38	383	0	0	531	472	155	0	244	0	0	0
Lane Group Flow (vph)	46	461	0	0	640	569	0	579	0	0	0	0
Turn Type	Prot					Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases						8	2					
Total Split (s)	12.0	52.0	0.0	0.0	40.0	40.0	38.0	38.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	7.4	34.1			28.6	28.6		25.5				
Actuated g/C Ratio	0.10	0.49			0.41	0.41		0.37				
v/c Ratio	0.26	0.51			0.85	0.58		0.87				
Uniform Delay, d1	32.1	10.8			18.7	0.0		16.8				
Delay	37.8	12.4			27.1	1.9		23.4				
LOS	D	B			C	A		C				
Approach Delay		14.7			15.3			23.4				
Approach LOS		B			B			C				
Queue Length 50th (ft)	25	153			324	0		236				
Queue Length 95th (ft)	54	206			#458	39		232				
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %		7%										
95th Bay Block Time %		18%										
Queuing Penalty (veh)		5										

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 69.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 17.2 Intersection LOS: B
Intersection Capacity Utilization 82.7% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



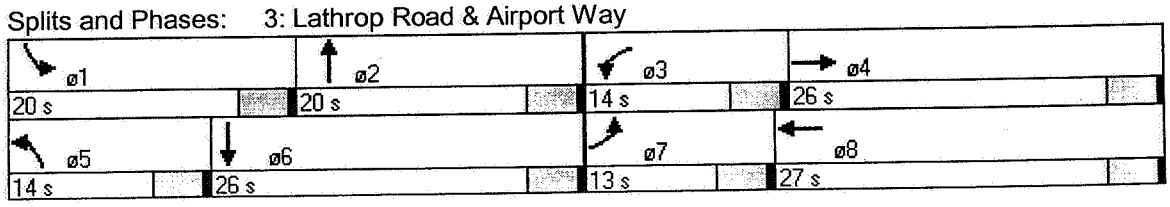
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3391	0	1736	3370	0	1736	4938	0	1736	4778	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3391	0	1736	3370	0	1736	4938	0	1736	4778	0
Satd. Flow (RTOR)		25			37			13			71	
Volume (vph)	59	333	59	87	497	119	86	308	22	168	151	59
Lane Group Flow (vph)	86	569	0	98	692	0	105	403	0	202	253	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	26.0	0.0	14.0	27.0	0.0	14.0	20.0	0.0	20.0	26.0	0.0
Act Effct Green (s)	8.2	16.8		8.6	19.6		8.7	11.2		11.9	14.2	
Actuated g/C Ratio	0.13	0.28		0.14	0.33		0.14	0.19		0.19	0.24	
v/c Ratio	0.38	0.58		0.40	0.61		0.43	0.43		0.60	0.21	
Uniform Delay, d1	27.4	17.3		25.7	16.2		25.8	21.0		24.5	13.2	
Delay	30.9	20.1		29.8	18.7		29.8	24.5		26.3	15.7	
LOS	C	C		C	B		C	C		C	B	
Approach Delay		21.6			20.1			25.6			20.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	33	101		38	126		40	50		77	17	
Queue Length 95th (ft)	62	121		90	203		87	82		141	34	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %												
95th Bay Block Time %					13%							
Queuing Penalty (veh)					6							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 59.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 21.7
Intersection Capacity Utilization 56.8%

Intersection LOS: C
ICU Level of Service A

Splits and Phases: 3: Lathrop Road & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1699	0	1736	1827	0	0	0	0	1736	1553	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1699	0	1736	1827	0	0	0	0	1736	1553	0
Satd. Flow (RTOR)		75									187	
Volume (vph)	0	567	602	408	744	0	0	0	0	310	0	420
Lane Group Flow (vph)	0	1408	0	516	942	0	0	0	0	425	575	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	53.0	0.0	21.0	74.0	0.0	0.0	0.0	0.0	26.0	26.0	0.0
Act Effct Green (s)		49.0		17.0	70.0					22.0	22.0	
Actuated g/C Ratio		0.49		0.17	0.70					0.22	0.22	
v/c Ratio		1.62		1.75	0.74					1.11	1.18	
Uniform Delay, d1		23.3		41.5	9.3					39.0	24.1	
Delay		208.9		234.7	9.9					99.4	102.5	
LOS		F		F	A					F	F	
Approach Delay		208.9			89.5						101.2	
Approach LOS		F			F						F	
Queue Length 50th (ft)		~1311		~492	325					~312	~346	
Queue Length 95th (ft)		#1404		#584	356					#356	#371	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		10%										
95th Up Block Time (%)		10%										
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				62%	16%					10%	18%	
95th Bay Block Time %				68%	17%					21%	23%	
Queuing Penalty (veh)				608	86					88	86	

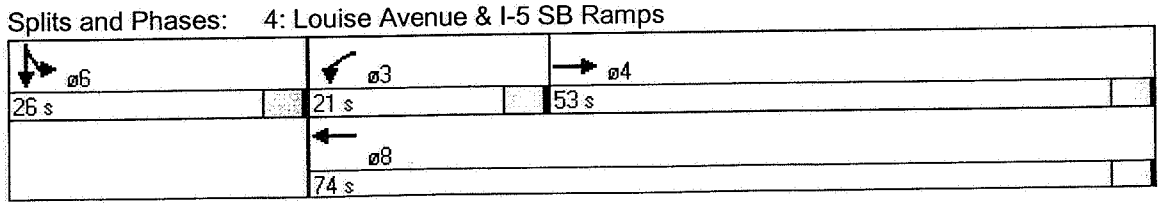
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.75
Intersection Signal Delay: 136.0 Intersection LOS: F
Intersection Capacity Utilization 154.6% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Satd. Flow (RTOR)						452			126			
Volume (vph)	214	662	0	0	785	529	345	5	583	0	0	0
Lane Group Flow (vph)	301	932	0	0	1033	696	0	480	799	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	16.0	61.0	0.0	0.0	45.0	45.0	39.0	39.0	39.0	0.0	0.0	0.0
Act Effct Green (s)	12.0	57.0			41.0	41.0		35.0	35.0			
Actuated g/C Ratio	0.12	0.57			0.41	0.41		0.35	0.35			
v/c Ratio	1.45	0.47			1.38	0.77		0.79	1.28			
Uniform Delay, d1	44.0	12.6			29.5	7.8		29.2	25.9			
Delay	184.4	12.8			159.6	8.8		32.2	131.4			
LOS	F	B			F	A		C	F			
Approach Delay		54.7			98.9			94.2				
Approach LOS		D			F			F				
Queue Length 50th (ft)	~263	172			~878	129		272	~599			
Queue Length 95th (ft)	#308	158			#869	155		294	#582			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %	60%	20%							31%			
95th Bay Block Time %	65%	18%							28%			
Queuing Penalty (veh)	290	58							142			

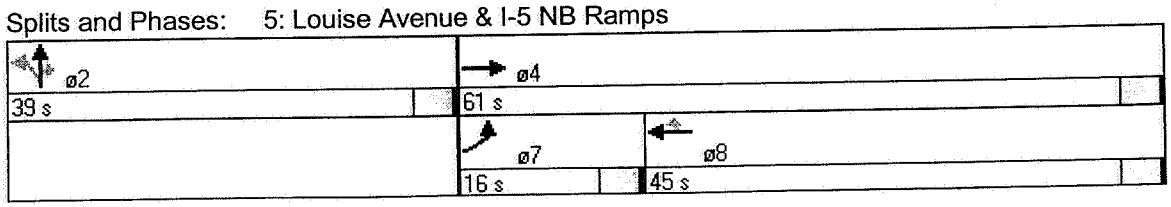
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 84.6
Intersection LOS: F
Intersection Capacity Utilization 107.6%
ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

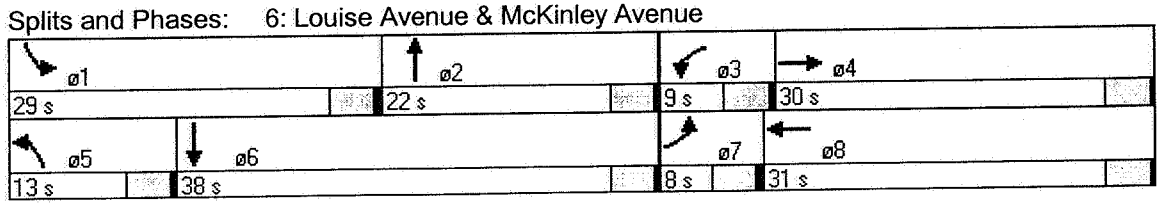


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3277	0	1736	3443	0	1736	1750	0	1736	1794	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3277	0	1736	3443	0	1736	1750	0	1736	1794	0
Satd. Flow (RTOR)		139			7			20			9	
Volume (vph)	23	457	274	51	613	35	47	95	37	189	88	12
Lane Group Flow (vph)	29	925	0	71	900	0	76	213	0	420	223	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	8.0	30.0	0.0	9.0	31.0	0.0	13.0	22.0	0.0	29.0	38.0	0.0
Act Effct Green (s)	4.2	22.8		5.3	26.5		8.0	13.3		21.7	30.4	
Actuated g/C Ratio	0.05	0.29		0.07	0.34		0.10	0.17		0.28	0.39	
v/c Ratio	0.32	0.87		0.62	0.76		0.43	0.67		0.86	0.31	
Uniform Delay, d1	39.5	22.2		38.3	24.3		35.9	27.2		28.3	17.0	
Delay	42.7	27.4		60.5	27.2		38.0	30.1		37.1	19.2	
LOS	D	C		E	C		D	C		D	B	
Approach Delay		27.9			29.7			32.1			30.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	16	215		39	202		40	100		215	85	
Queue Length 95th (ft)	39	250		#79	241		58	108		140	57	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		29%			25%					34%		
95th Bay Block Time %		35%			35%					13%		
Queuing Penalty (veh)		9			21					52		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 79.3% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue



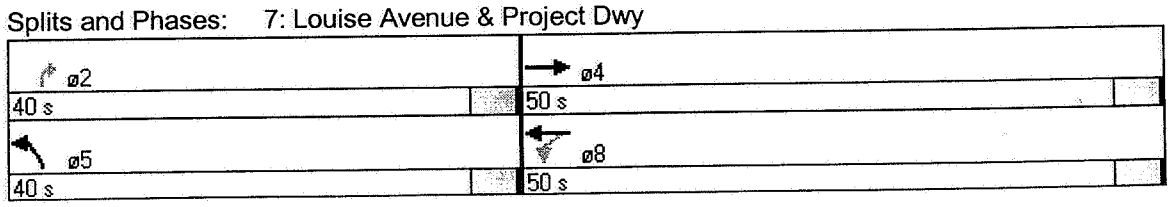
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3280	0	1736	3471	0	1736	0	1553	0	0	0
Flt Permitted				0.450			0.950					
Satd. Flow (perm)	0	3280	0	822	3471	0	1736	0	1553	0	0	0
Satd. Flow (RTOR)		174							109			
Volume (vph)	0	274	160	45	762	0	232	0	100	0	0	0
Lane Group Flow (vph)	0	472	0	49	828	0	252	0	109	0	0	0
Turn Type				Perm			custom		custom			
Protected Phases		4			8		5					
Permitted Phases				8			5		2			
Total Split (s)	0.0	50.0	0.0	50.0	50.0	0.0	40.0	0.0	40.0	0.0	0.0	0.0
Act Effct Green (s)		14.3		14.3	14.3		10.2		10.2			
Actuated g/C Ratio		0.43		0.43	0.43		0.31		0.31			
v/c Ratio		0.31		0.14	0.55		0.47		0.20			
Uniform Delay, d1		3.6		5.4	6.7		8.9		0.0			
Delay		4.0		6.5	7.3		10.5		3.1			
LOS		A		A	A		B		A			
Approach Delay		4.0			7.3							
Approach LOS		A			A							
Queue Length 50th (ft)		13		4	46		32		0			
Queue Length 95th (ft)		42		21	111		99		21			
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 33.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.6
Intersection Capacity Utilization 43.5%

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 7: Louise Avenue & Project Dwy



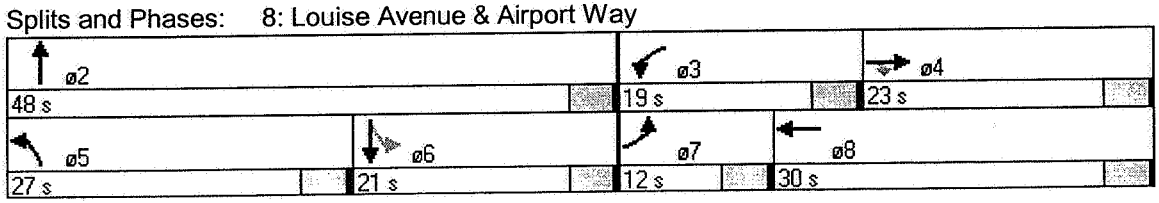
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3433	0	1736	4878	0	1736	4758	0
Flt Permitted	0.950			0.950			0.950			0.516		
Satd. Flow (perm)	1736	3471	1553	1736	3433	0	1736	4878	0	943	4758	0
Satd. Flow (RTOR)			98		9			52			110	
Volume (vph)	40	253	81	106	500	40	195	269	46	28	251	112
Lane Group Flow (vph)	48	305	98	128	650	0	238	384	0	30	390	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	12.0	23.0	23.0	19.0	30.0	0.0	27.0	48.0	0.0	21.0	21.0	0.0
Act Effct Green (s)	7.4	14.2	14.2	10.1	19.1		13.6	24.2		10.4	10.4	
Actuated g/C Ratio	0.12	0.24	0.24	0.17	0.32		0.22	0.41		0.18	0.18	
v/c Ratio	0.23	0.37	0.22	0.44	0.58		0.62	0.19		0.18	0.42	
Uniform Delay, d1	27.2	18.5	0.0	24.6	17.0		23.3	9.3		21.2	15.7	
Delay	32.5	23.3	6.7	28.5	19.8		24.6	9.9		29.5	19.4	
LOS	C	C	A	C	B		C	A		C	B	
Approach Delay		20.7			21.2			15.5			20.1	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	17	52	0	46	116		85	31		11	32	
Queue Length 95th (ft)	54	104	32	107	196		165	45		40	80	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 59.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 19.3
Intersection Capacity Utilization 55.9%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 8: Louise Avenue & Airport Way

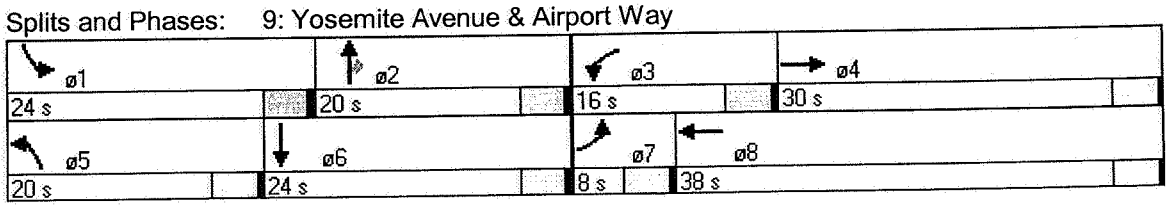


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3384	0	1736	3263	0	1736	4988	1553	1736	4903	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3384	0	1736	3263	0	1736	4988	1553	1736	4903	0
Satd. Flow (RTOR)		26			208				154		24	
Volume (vph)	10	456	91	138	464	312	162	279	140	257	331	44
Lane Group Flow (vph)	16	868	0	170	958	0	178	307	154	317	463	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	8.0	30.0	0.0	16.0	38.0	0.0	20.0	20.0	20.0	24.0	24.0	0.0
Act Effct Green (s)	4.1	23.0		10.8	36.6		12.5	10.3	10.3	17.4	18.3	
Actuated g/C Ratio	0.05	0.29		0.14	0.47		0.16	0.13	0.13	0.22	0.23	
v/c Ratio	0.19	0.85		0.71	0.58		0.66	0.47	0.45	0.82	0.40	
Uniform Delay, d1	40.7	24.5		34.3	13.1		34.7	32.4	0.0	31.2	25.9	
Delay	42.2	28.8		40.7	12.8		32.9	32.9	6.5	36.5	27.0	
LOS	D	C		D	B		C	C	A	D	C	
Approach Delay		29.1			17.0			26.5			30.8	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	8	216		87	135		89	56	0	158	75	
Queue Length 95th (ft)	21	187		#153	207		157	83	50	#247	97	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %		38%		31%	29%							
95th Bay Block Time %		34%		55%	43%		34%			5%		
Queuing Penalty (veh)		5		206	60		17			4		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 78.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 70.9% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way

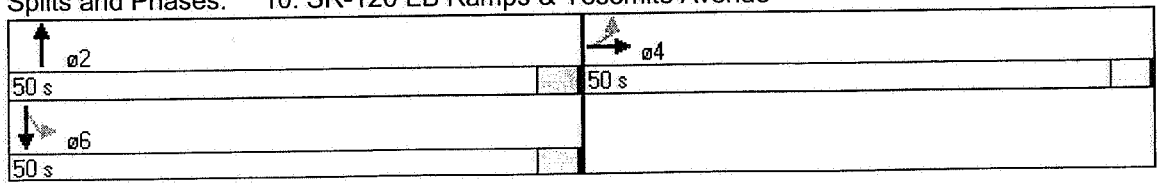


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1698	0	0	0	0	0	1662	0	0	1765	0
Flt Permitted		0.966									0.448	
Satd. Flow (perm)	0	1698	0	0	0	0	0	1662	0	0	818	0
Satd. Flow (RTOR)		27						134				
Volume (vph)	652	3	261	0	0	0	0	115	231	193	78	0
Lane Group Flow (vph)	0	1091	0	0	0	0	0	376	0	0	484	0
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Total Split (s)	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	50.0	0.0
Act Effct Green (s)		46.0						46.0			46.0	
Actuated g/C Ratio		0.46						0.46			0.46	
v/c Ratio		1.37						0.45			1.29	
Uniform Delay, d1		26.1						11.1			27.0	
Delay		155.7						11.6			136.5	
LOS		F						B			F	
Approach Delay		155.7						11.6			136.5	
Approach LOS		F						B			F	
Queue Length 50th (ft)		~923						92			~395	
Queue Length 95th (ft)		#791						164			#273	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)		21%									22%	
95th Up Block Time (%)		5%						3%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)											52	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.37
Intersection Signal Delay: 123.2 Intersection LOS: F
Intersection Capacity Utilization 120.6% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue



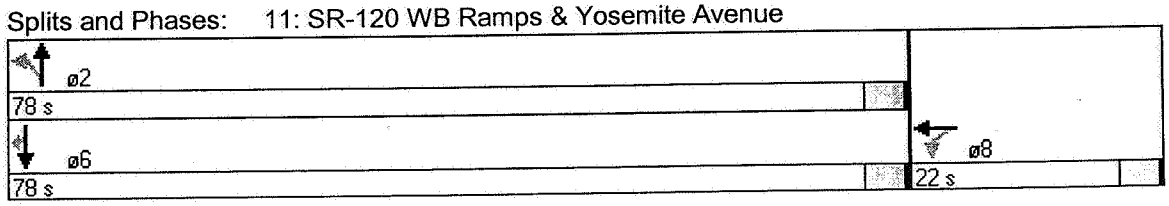
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1685	0	0	1796	0	0	1827	1553
Flt Permitted					0.969			0.817				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1493	0	0	1827	1553
Satd. Flow (RTOR)					24							818
Volume (vph)	0	0	0	121	0	66	262	500	0	0	151	720
Lane Group Flow (vph)	0	0	0	0	271	0	0	989	0	0	172	818
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	22.0	22.0	0.0	78.0	78.0	0.0	0.0	78.0	78.0
Act Effct Green (s)					15.8			62.6			62.6	62.6
Actuated g/C Ratio					0.18			0.72			0.72	0.72
v/c Ratio					0.83			0.92			0.13	0.61
Uniform Delay, d1					30.9			9.7			3.6	0.0
Delay					42.0			16.1			3.8	0.3
LOS					D			B			A	A
Approach Delay					42.0			16.1			1.0	
Approach LOS					D			B			A	
Queue Length 50th (ft)					148			408			26	0
Queue Length 95th (ft)					175			421			43	20
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								10%				
95th Up Block Time (%)								10%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								101				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 86.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 12.6
Intersection Capacity Utilization 129.2%

Intersection LOS: B
ICU Level of Service H

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue



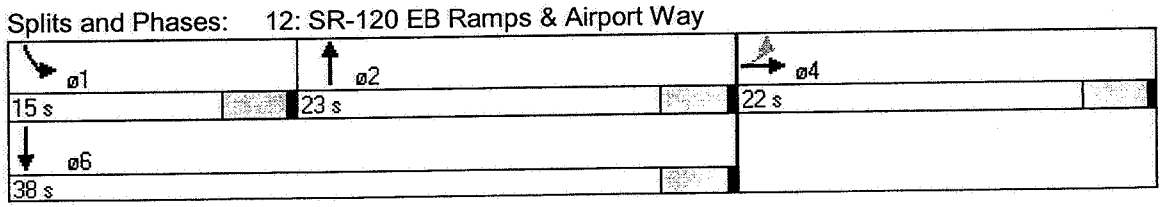
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1696	0	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.965								0.950		
Satd. Flow (perm)	0	1696	0	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)		33						48				
Volume (vph)	170	0	66	0	0	0	0	443	101	149	271	0
Lane Group Flow (vph)	0	311	0	0	0	0	0	680	0	175	319	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	22.0	22.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	15.0	38.0	0.0
Act Effct Green (s)		12.7						21.2		9.1	31.5	
Actuated g/C Ratio		0.25						0.44		0.18	0.66	
v/c Ratio		0.68						0.45		0.55	0.14	
Uniform Delay, d1		16.5						10.2		20.0	3.8	
Delay		15.5						13.9		20.9	5.3	
LOS		B						B		C	A	
Approach Delay		15.5						13.9			10.8	
Approach LOS		B						B			B	
Queue Length 50th (ft)		74						85		48	20	
Queue Length 95th (ft)		121						126		105	39	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 47.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 13.2
Intersection Capacity Utilization 56.7%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 12: SR-120 EB Ramps & Airport Way



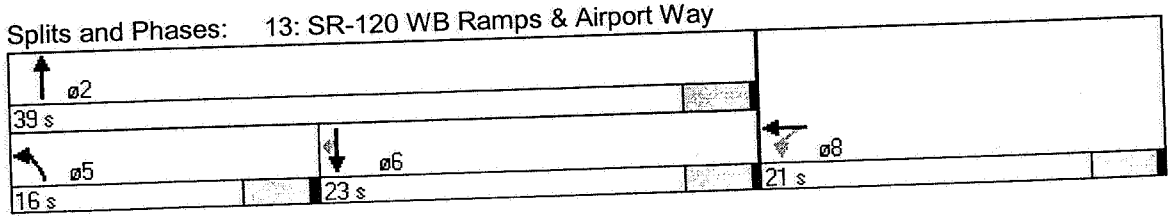
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1617	0	1736	3471	0	0	3471	1553
Flt Permitted					0.989		0.950					
Satd. Flow (perm)	0	0	0	0	1617	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					295							651
Volume (vph)	0	0	0	96	0	337	188	441	0	0	323	566
Lane Group Flow (vph)	0	0	0	0	461	0	232	544	0	0	371	651
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	21.0	21.0	0.0	16.0	39.0	0.0	0.0	23.0	23.0
Act Effct Green (s)					10.9		10.2	24.0			13.0	13.0
Actuated g/C Ratio					0.25		0.22	0.55			0.30	0.30
v/c Ratio					0.74		0.60	0.29			0.36	0.71
Uniform Delay, d1					5.1		16.9	4.8			12.1	0.0
Delay					7.3		21.9	5.4			14.4	2.1
LOS					A		C	A			B	A
Approach Delay					7.3			10.3			6.6	
Approach LOS					A			B			A	
Queue Length 50th (ft)					38		54	30			43	0
Queue Length 95th (ft)					139		126	58			81	53
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 44
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 8.0
Intersection Capacity Utilization 90.9%

Intersection LOS: A
ICU Level of Service E

Splits and Phases: 13: SR-120 WB Ramps & Airport Way

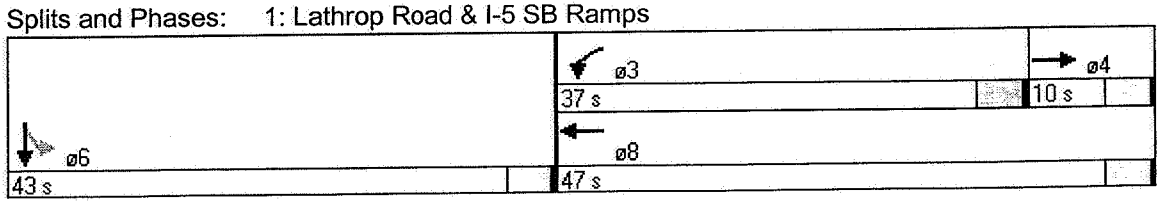


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Flt Permitted				0.950							0.953	
Satd. Flow (perm)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Satd. Flow (RTOR)		1										
Volume (vph)	0	82	2	525	40	0	0	0	0	624	2	3
Lane Group Flow (vph)	0	108	0	625	48	0	0	0	0	0	749	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	10.0	0.0	37.0	47.0	0.0	0.0	0.0	0.0	43.0	43.0	0.0
Act Effct Green (s)		6.0		33.0	43.0						39.0	
Actuated g/C Ratio		0.07		0.37	0.48						0.43	
v/c Ratio		0.89		0.98	0.05						0.99	
Uniform Delay, d1		41.2		28.2	12.6						25.4	
Delay		85.0		54.1	12.8						51.6	
LOS		F		D	B						D	
Approach Delay		85.0			51.1						51.6	
Approach LOS		F			D						D	
Queue Length 50th (ft)		62		346	14						411	
Queue Length 95th (ft)		#128		#508	30						#588	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				39%								
95th Bay Block Time %				49%								
Queuing Penalty (veh)				21								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.7 Intersection LOS: D
Intersection Capacity Utilization 89.5% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1623	0	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1623	0	0	0	0
Satd. Flow (RTOR)						445		71				
Volume (vph)	46	656	0	0	382	395	183	0	524	0	0	0
Lane Group Flow (vph)	55	790	0	0	460	476	0	1024	0	0	0	0
Turn Type	Prot					Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases						8	2					
Total Split (s)	12.0	54.0	0.0	0.0	42.0	42.0	76.0	76.0	0.0	0.0	0.0	0.0
Act Effct Green (s)	7.6	50.1			40.4	40.4		72.0				
Actuated g/C Ratio	0.06	0.39			0.31	0.31		0.55				
v/c Ratio	0.55	1.12			0.81	0.60		1.10				
Uniform Delay, d1	61.1	40.0			41.7	2.1		27.1				
Delay	60.0	98.6			49.2	4.7		78.2				
LOS	E	F			D	A		E				
Approach Delay		96.1			26.6			78.2				
Approach LOS		F			C			E				
Queue Length 50th (ft)	46	~768			367	19		~953				
Queue Length 95th (ft)	85	#885			#456	71		631				
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %		52%										
95th Bay Block Time %		54%										
Queuing Penalty (veh)		29										

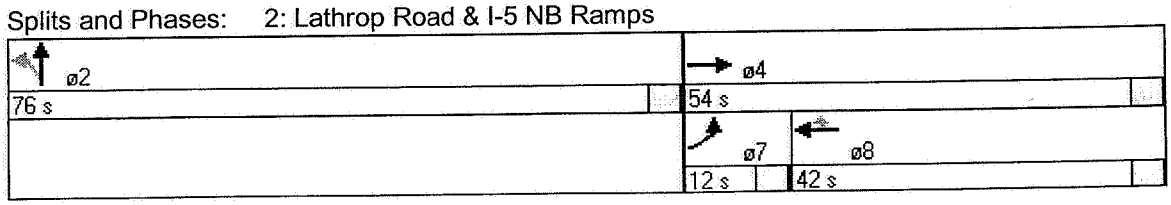
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 66.4 Intersection LOS: E
Intersection Capacity Utilization 109.7% ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps

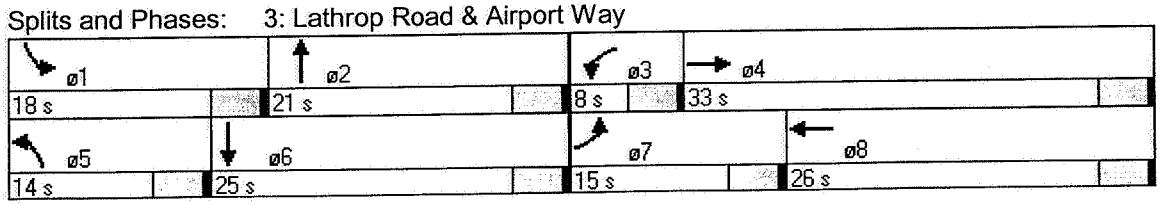


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3405	0	1736	3360	0	1736	4803	0	1736	4883	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3405	0	1736	3360	0	1736	4803	0	1736	4883	0
Satd. Flow (RTOR)		23			42			94			39	
Volume (vph)	79	658	98	49	444	119	89	247	81	198	335	56
Lane Group Flow (vph)	114	1096	0	55	633	0	109	400	0	239	471	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	15.0	33.0	0.0	8.0	26.0	0.0	14.0	21.0	0.0	18.0	25.0	0.0
Act Effct Green (s)	8.9	25.3		4.1	19.2		8.5	9.6		12.3	16.3	
Actuated g/C Ratio	0.14	0.40		0.06	0.30		0.13	0.15		0.19	0.25	
v/c Ratio	0.49	0.81		0.52	0.61		0.49	0.50		0.72	0.37	
Uniform Delay, d1	28.2	18.3		32.1	18.3		28.5	19.0		25.5	19.0	
Delay	29.3	19.5		46.6	19.8		29.9	20.7		32.5	21.4	
LOS	C	B		D	B		C	C		C	C	
Approach Delay		20.4			21.9			22.7			25.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	48	219		25	115		46	43		102	60	
Queue Length 95th (ft)	73	210		#78	178		87	65		#184	84	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %		12%										
95th Bay Block Time %		10%			6%							
Queuing Penalty (veh)		13			1							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 64
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 68.8% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1701	0	1736	1827	0	0	0	0	1736	1555	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1701	0	1736	1827	0	0	0	0	1736	1555	0
Satd. Flow (RTOR)		76									126	
Volume (vph)	0	672	709	363	864	0	0	0	0	406	2	485
Lane Group Flow (vph)	0	1664	0	459	1094	0	0	0	0	556	667	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Total Split (s)	0.0	54.0	0.0	17.0	71.0	0.0	0.0	0.0	0.0	29.0	29.0	0.0
Act Effct Green (s)		50.0		13.0	67.0					25.0	25.0	
Actuated g/C Ratio		0.50		0.13	0.67					0.25	0.25	
v/c Ratio		1.87		2.03	0.89					1.28	1.38	
Uniform Delay, d1		22.9		43.5	13.6					37.5	27.7	
Delay		249.6		271.1	18.4					140.4	158.8	
LOS		F		F	B					F	F	
Approach Delay		249.6			93.1						150.5	
Approach LOS		F			F						F	
Queue Length 50th (ft)		~1648		~462	512					~452	~509	
Queue Length 95th (ft)		#1719		#555	547					#479	#517	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		10%										
95th Up Block Time (%)		10%										
Turn Bay Length (ft)				190						300		
50th Bay Block Time %				63%	23%					36%	48%	
95th Bay Block Time %				69%	24%					40%	49%	
Queuing Penalty (veh)				720	107					253	267	

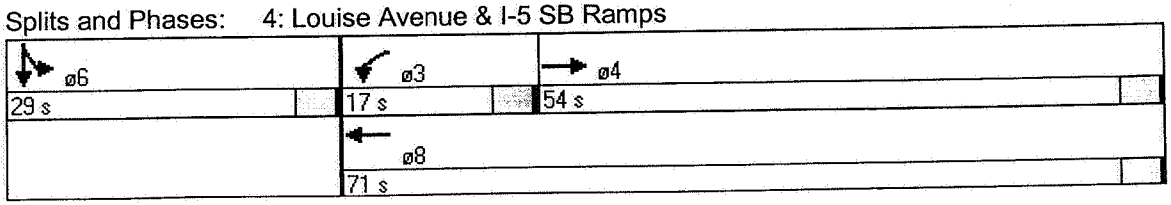
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.03
Intersection Signal Delay: 167.6 Intersection LOS: F
Intersection Capacity Utilization 171.6% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Satd. Flow (RTOR)						539			37			
Volume (vph)	231	854	0	0	790	709	425	4	869	0	0	0
Lane Group Flow (vph)	325	1203	0	0	1039	933	0	587	1190	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	14.0	52.0	0.0	0.0	38.0	38.0	48.0	48.0	48.0	0.0	0.0	0.0
Act Effct Green (s)	10.0	48.0			34.0	34.0		44.0	44.0			
Actuated g/C Ratio	0.10	0.48			0.34	0.34		0.44	0.44			
v/c Ratio	1.87	0.72			1.67	1.06		0.77	1.69			
Uniform Delay, d1	45.0	20.7			33.0	12.9		23.6	26.5			
Delay	250.6	21.1			221.8	52.0		24.8	222.7			
LOS	F	C			F	D		C	F			
Approach Delay		69.9			141.4			157.3				
Approach LOS		E			F			F				
Queue Length 50th (ft)	~318	309			~972	~410		308	~1117			
Queue Length 95th (ft)	#360	270			#961	#416		320	#1018			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)									53%			
95th Up Block Time (%)									46%			
Turn Bay Length (ft)	100								460			
50th Bay Block Time %	68%	36%							64%			
95th Bay Block Time %	72%	34%							60%			
Queuing Penalty (veh)	420	114							365			

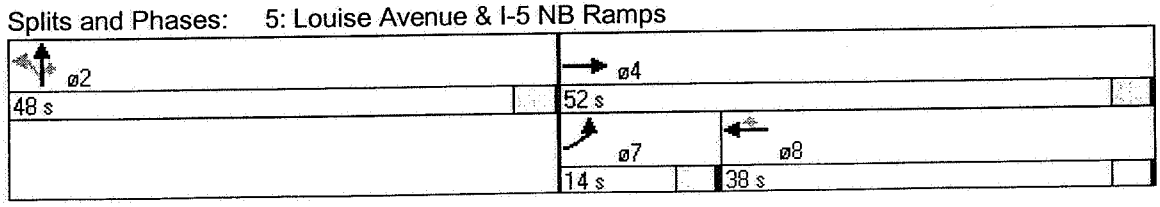
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.87
Intersection Signal Delay: 126.1 Intersection LOS: F
Intersection Capacity Utilization 118.3% ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

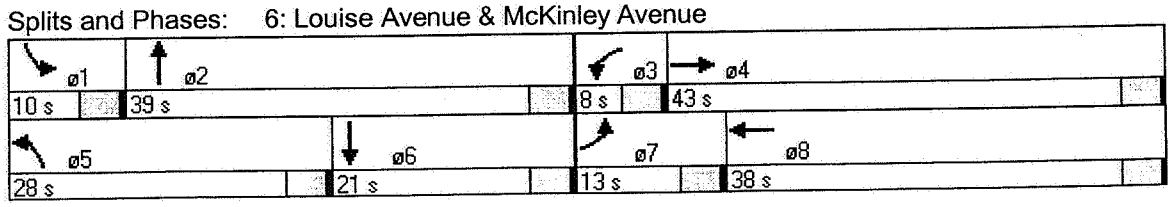


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3329	0	1736	3443	0	1736	1703	0	1736	1730	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3329	0	1736	3443	0	1736	1703	0	1736	1730	0
Satd. Flow (RTOR)		64			6			46			24	
Volume (vph)	48	771	291	47	532	30	261	76	63	18	58	32
Lane Group Flow (vph)	61	1344	0	65	781	0	421	225	0	40	200	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	43.0	0.0	8.0	38.0	0.0	28.0	39.0	0.0	10.0	21.0	0.0
Act Effct Green (s)	7.9	39.0		4.0	37.2		24.0	36.2		5.9	14.0	
Actuated g/C Ratio	0.08	0.40		0.04	0.38		0.25	0.37		0.06	0.14	
v/c Ratio	0.44	0.98		0.90	0.59		0.98	0.34		0.40	0.74	
Uniform Delay, d1	44.9	28.0		47.7	25.0		37.8	18.0		47.4	34.7	
Delay	43.4	46.8		122.3	25.5		73.7	18.4		46.0	35.1	
LOS	D	D		F	C		E	B		D	D	
Approach Delay		46.7			33.0			54.5			36.9	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	37	416		41	212		264	82		25	105	
Queue Length 95th (ft)	69	#438		#92	212		242	86		29	75	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		42%			28%		43%					
95th Bay Block Time %		43%			28%		40%					
Queuing Penalty (veh)		26			18		93					

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 97.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 90.1% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

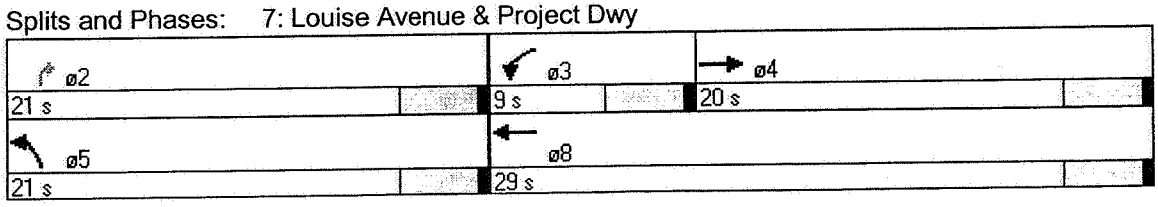


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑↑		↰		↱			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3266	0	1736	3471	0	1736	0	1553	0	0	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3266	0	1736	3471	0	1736	0	1553	0	0	0
Satd. Flow (RTOR)		317							118			
Volume (vph)	0	507	330	86	510	0	207	0	109	0	0	0
Lane Group Flow (vph)	0	910	0	93	554	0	225	0	118	0	0	0
Turn Type				Prot			custom		custom			
Protected Phases		4		3	8		5					
Permitted Phases							5		2			
Total Split (s)	0.0	20.0	0.0	9.0	29.0	0.0	21.0	0.0	21.0	0.0	0.0	0.0
Act Effct Green (s)		12.8		5.2	17.1		10.5		10.5			
Actuated g/C Ratio		0.35		0.13	0.47		0.29		0.29			
v/c Ratio		0.68		0.42	0.34		0.45		0.22			
Uniform Delay, d1		6.7		17.4	5.4		11.3		0.0			
Delay		7.6		23.4	6.0		12.9		3.6			
LOS		A		C	A		B		A			
Approach Delay		7.6			8.5							
Approach LOS		A			A							
Queue Length 50th (ft)		57		22	30		47		0			
Queue Length 95th (ft)		126		#73	66		95		24			
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 36.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 8.3 — Intersection LOS: A
Intersection Capacity Utilization 54.4% — ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy

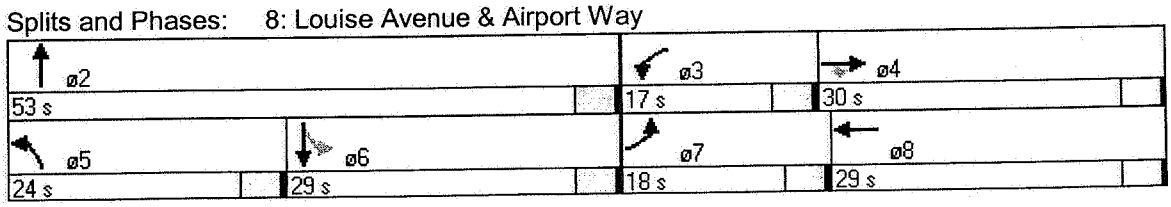


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3398	0	1736	4698	0	1736	4853	0
Flt Permitted	0.950			0.950			0.950			0.391		
Satd. Flow (perm)	1736	3471	1553	1736	3398	0	1736	4698	0	714	4853	0
Satd. Flow (RTOR)			104		17			226			47	
Volume (vph)	86	444	86	76	395	63	142	329	210	99	264	59
Lane Group Flow (vph)	104	535	104	92	552	0	173	657	0	106	347	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	18.0	30.0	30.0	17.0	29.0	0.0	24.0	53.0	0.0	29.0	29.0	0.0
Act Effct Green (s)	10.0	17.5	17.5	9.6	17.1		12.5	28.5		16.0	16.0	
Actuated g/C Ratio	0.15	0.26	0.26	0.14	0.26		0.18	0.43		0.24	0.24	
v/c Ratio	0.41	0.59	0.21	0.38	0.63		0.55	0.31		0.62	0.29	
Uniform Delay, d1	27.8	21.1	0.0	27.9	20.8		26.7	7.3		22.2	17.5	
Delay	34.3	25.5	6.5	34.8	25.4		31.3	8.0		32.1	21.2	
LOS	C	C	A	C	C		C	A		C	C	
Approach Delay		24.1			26.8			12.9			23.8	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	42	108	0	37	110		69	35		41	34	
Queue Length 95th (ft)	105	192	33	96	197		149	63		#130	83	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 66.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 54.0% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3357	0	1736	3239	0	1736	4988	1553	1736	4918	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3357	0	1736	3239	0	1736	4988	1553	1736	4918	0
Satd. Flow (RTOR)		38			206				282		17	
Volume (vph)	157	561	157	206	394	319	83	443	257	289	326	35
Lane Group Flow (vph)	249	1139	0	254	880	0	91	487	282	357	445	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	22.0	37.0	0.0	18.0	33.0	0.0	15.0	21.0	21.0	24.0	30.0	0.0
Act Effct Green (s)	16.7	33.0		14.0	30.3		9.5	15.0	15.0	20.0	27.6	
Actuated g/C Ratio	0.17	0.34		0.14	0.31		0.09	0.15	0.15	0.20	0.28	
v/c Ratio	0.84	0.99		1.02	0.77		0.55	0.64	0.59	1.01	0.32	
Uniform Delay, d1	39.8	31.7		42.4	23.4		43.8	38.6	0.0	39.4	27.0	
Delay	48.2	53.3		100.1	24.8		42.8	39.0	4.9	85.1	27.8	
LOS	D	D		F	C		D	D	A	F	C	
Approach Delay		52.4			41.7			28.2			53.3	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	151	362		~172	209		55	105	0	~231	80	
Queue Length 95th (ft)	158	272		#282	243		107	142	72	#355	98	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %	32%	48%		57%	49%			3%				
95th Bay Block Time %	34%	42%		71%	52%		11%	24%		34%		
Queuing Penalty (veh)	186	112		282	128		9	11		25		

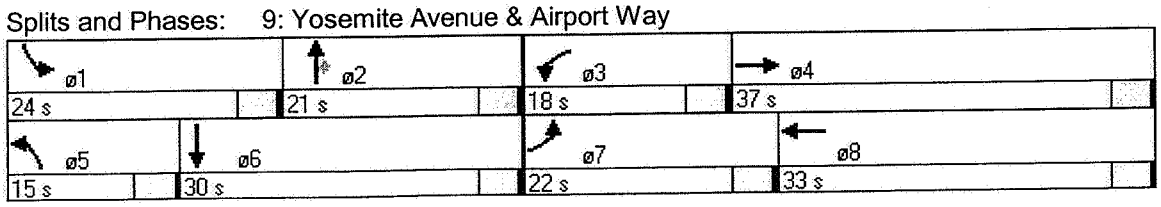
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 44.7 Intersection LOS: D
Intersection Capacity Utilization 89.2% ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1694	0	0	0	0	0	1675	0	0	1752	0
Flt Permitted		0.966									0.368	
Satd. Flow (perm)	0	1694	0	0	0	0	0	1675	0	0	672	0
Satd. Flow (RTOR)		28						105				
Volume (vph)	812	1	339	0	0	0	0	152	240	254	46	0
Lane Group Flow (vph)	0	1372	0	0	0	0	0	426	0	0	536	0
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Total Split (s)	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	50.0	0.0
Act Effct Green (s)		46.0						46.0			46.0	
Actuated g/C Ratio		0.46						0.46			0.46	
v/c Ratio		1.73						0.52			1.73	
Uniform Delay, d1		26.0						13.8			27.0	
Delay		229.0						14.3			227.9	
LOS		F						B			F	
Approach Delay		229.0						14.3			227.9	
Approach LOS		F						B			F	
Queue Length 50th (ft)		~1316						130			~509	
Queue Length 95th (ft)		#1436						214			#365	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)		27%									40%	
95th Up Block Time (%)		36%						12%			15%	
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)											147	

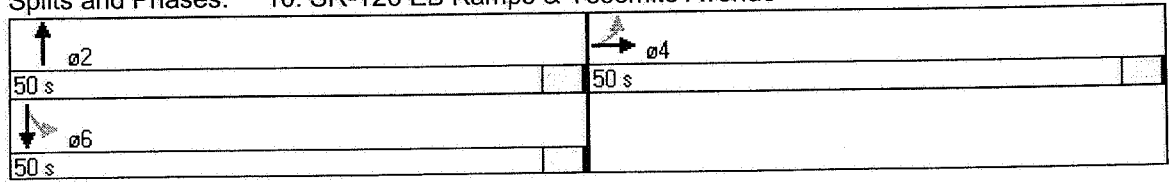
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.73
Intersection Signal Delay: 189.6 Intersection LOS: F
Intersection Capacity Utilization 142.4% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1692	0	0	1801	0	0	1827	1553
Flt Permitted					0.967			0.843				
Satd. Flow (perm)	0	0	0	0	1692	0	0	1540	0	0	1827	1553
Satd. Flow (RTOR)					15							952
Volume (vph)	0	0	0	137	0	63	286	754	0	0	166	838
Lane Group Flow (vph)	0	0	0	0	290	0	0	1350	0	0	189	952
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	23.0	23.0	0.0	107.0	107.0	0.0	0.0	107.0	107.0
Act Effct Green (s)					19.0			103.0			103.0	103.0
Actuated g/C Ratio					0.15			0.79			0.79	0.79
v/c Ratio					1.12			1.11			0.13	0.67
Uniform Delay, d1					52.3			13.5			3.1	0.0
Delay					117.6			68.2			3.2	0.2
LOS					F			E			A	A
Approach Delay					117.6			68.2			0.7	
Approach LOS					F			E			A	
Queue Length 50th (ft)					~269			~1295			31	0
Queue Length 95th (ft)					#291			#1180			47	17
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								20%				
95th Up Block Time (%)								17%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								251				

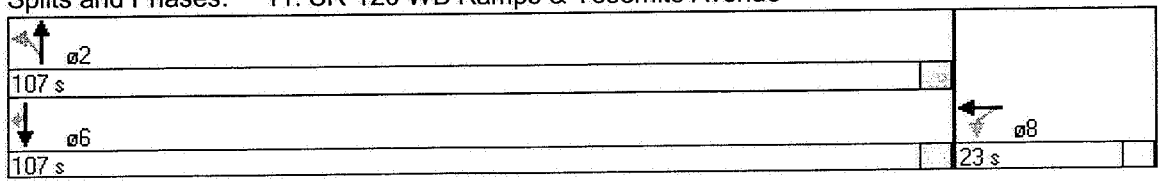
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 157.6% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1700	0	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.964								0.950		
Satd. Flow (perm)	0	1700	0	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)		28						24				
Volume (vph)	583	0	207	0	0	0	0	381	89	246	418	0
Lane Group Flow (vph)	0	1039	0	0	0	0	0	587	0	289	492	0
Turn Type	Perm									Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4											
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	21.0	0.0	20.0	41.0	0.0
Act Effct Green (s)		55.0						17.0		16.0	37.0	
Actuated g/C Ratio		0.55						0.17		0.16	0.37	
v/c Ratio		1.10						0.99		1.04	0.38	
Uniform Delay, d1		21.8						39.7		42.0	23.1	
Delay		71.0						65.5		91.7	23.4	
LOS		E						E		F	C	
Approach Delay		71.0						65.5			48.6	
Approach LOS		E						E			D	
Queue Length 50th (ft)		~748						191		~200	119	
Queue Length 95th (ft)		#737						#249		#332	152	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)										300		
50th Bay Block Time %												
95th Bay Block Time %										15%		
Queuing Penalty (veh)										19		

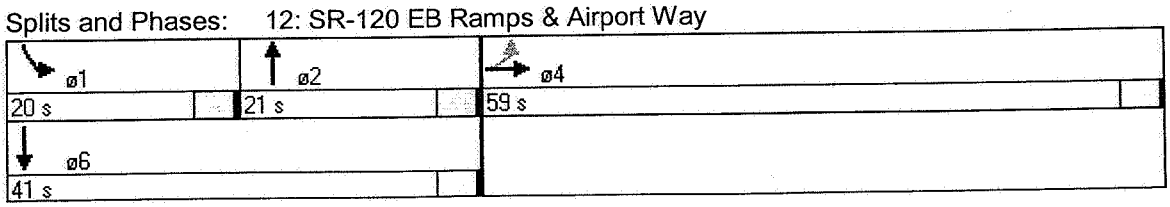
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 62.4 Intersection LOS: E
Intersection Capacity Utilization 101.9% ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

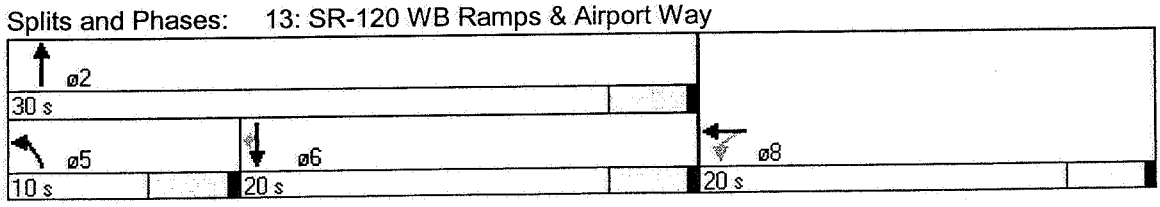


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1649	0	1736	3471	0	0	3471	1553
Flt Permitted					0.980		0.950					
Satd. Flow (perm)	0	0	0	0	1649	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					86							264
Volume (vph)	0	0	0	142	0	200	117	805	0	0	550	230
Lane Group Flow (vph)	0	0	0	0	364	0	144	994	0	0	632	264
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	10.0	30.0	0.0	0.0	20.0	20.0
Act Effct Green (s)					11.9		6.1	23.7			16.0	16.0
Actuated g/C Ratio					0.27		0.13	0.54			0.37	0.37
v/c Ratio					0.71		0.63	0.53			0.50	0.36
Uniform Delay, d1					11.1		19.5	6.2			11.1	0.0
Delay					11.3		31.4	7.3			12.9	2.5
LOS					B		C	A			B	A
Approach Delay					11.3			10.3			9.8	
Approach LOS					B			B			A	
Queue Length 50th (ft)					63		38	77			71	0
Queue Length 95th (ft)					137		#95	114			116	28
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 43.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 56.9% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: SR-120 WB Ramps & Airport Way

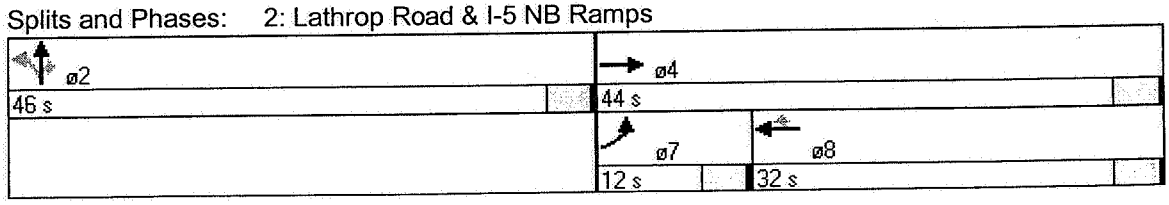


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						476			103			
Volume (vph)	46	656	0	0	382	395	183	0	524	0	0	0
Lane Group Flow (vph)	55	790	0	0	460	476	0	265	759	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	12.0	44.0	0.0	0.0	32.0	32.0	46.0	46.0	46.0	0.0	0.0	0.0
Act Effct Green (s)	7.3	39.3			30.1	30.1		41.3	41.3			
Actuated g/C Ratio	0.08	0.44			0.34	0.34		0.47	0.47			
v/c Ratio	0.39	0.97			0.74	0.57		0.33	0.98			
Uniform Delay, d1	40.1	23.9			26.3	0.0		15.3	20.5			
Delay	39.4	43.6			31.9	2.6		15.4	40.1			
LOS	D	D			C	A		B	D			
Approach Delay		43.3			17.0			33.7				
Approach LOS		D			B			C				
Queue Length 50th (ft)	30	425			239	0		91	344			
Queue Length 95th (ft)	62	#588			320	45		105	310			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %		38%										
95th Bay Block Time %		44%										
Queuing Penalty (veh)		22										

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 88.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 95.3% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



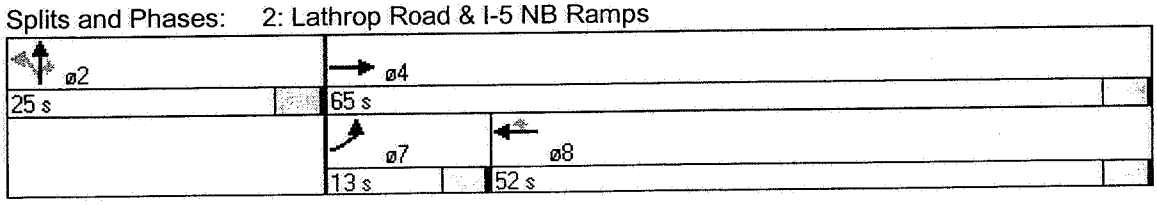
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						569			354			
Volume (vph)	38	383	0	0	531	472	155	0	244	0	0	0
Lane Group Flow (vph)	46	461	0	0	640	569	0	225	354	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	13.0	65.0	0.0	0.0	52.0	52.0	25.0	25.0	25.0	0.0	0.0	0.0
Act Effct Green (s)	7.5	28.5			25.3	25.3		13.2	13.2			
Actuated g/C Ratio	0.13	0.55			0.49	0.49		0.25	0.25			
v/c Ratio	0.20	0.46			0.72	0.54		0.51	0.54			
Uniform Delay, d1	24.8	5.7			10.9	0.0		17.0	0.0			
Delay	31.4	6.2			11.9	1.2		22.3	3.7			
LOS	C	A			B	A		C	A			
Approach Delay		8.5			6.8			10.9				
Approach LOS		A			A			B				
Queue Length 50th (ft)	9	56			89	0		41	0			
Queue Length 95th (ft)	54	132			317	29		136	0			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %		3%										
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 52.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 8.2
Intersection Capacity Utilization 61.0%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



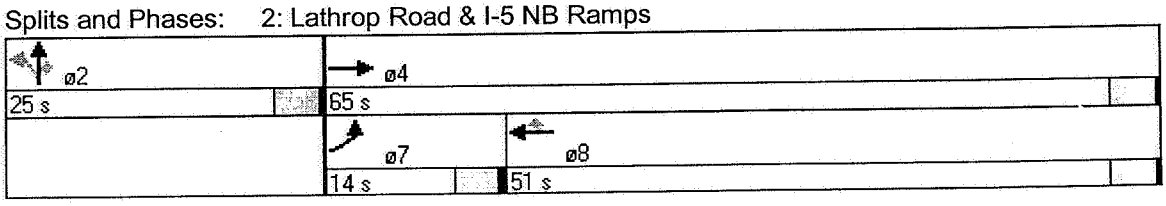
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						569			354			
Volume (vph)	38	383	0	0	531	472	155	0	244	0	0	0
Lane Group Flow (vph)	46	461	0	0	640	569	0	225	354	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	14.0	65.0	0.0	0.0	51.0	51.0	25.0	25.0	25.0	0.0	0.0	0.0
Act Effct Green (s)	7.6	28.5			25.2	25.2		13.2	13.2			
Actuated g/C Ratio	0.13	0.55			0.48	0.48		0.25	0.25			
v/c Ratio	0.20	0.46			0.72	0.54		0.51	0.54			
Uniform Delay, d1	24.7	5.7			11.0	0.0		17.0	0.0			
Delay	31.0	6.2			12.1	1.2		22.3	3.7			
LOS	C	A			B	A		C	A			
Approach Delay		8.4			7.0			10.9				
Approach LOS		A			A			B				
Queue Length 50th (ft)	9	56			89	0		41	0			
Queue Length 95th (ft)	53	132			326	30		136	0			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150											
50th Bay Block Time %												
95th Bay Block Time %		3%										
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 52.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 8.3
Intersection Capacity Utilization 61.0%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



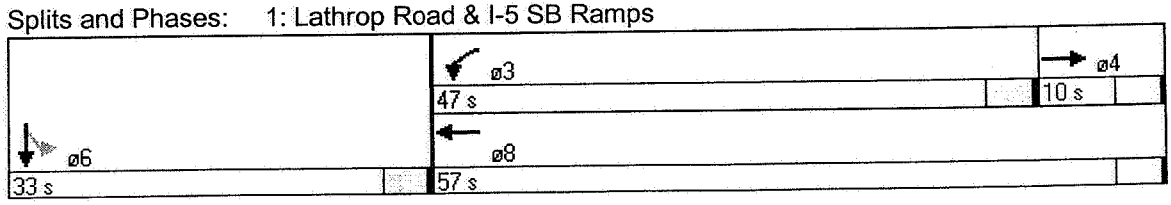
Cumulative 2025 with Improvements
(Synchro Software)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Flt Permitted				0.950							0.954	
Satd. Flow (perm)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Satd. Flow (RTOR)		13									1	
Volume (vph)	0	36	11	637	44	0	0	0	0	390	7	3
Lane Group Flow (vph)	0	60	0	758	52	0	0	0	0	0	476	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	10.0	0.0	47.0	57.0	0.0	0.0	0.0	0.0	33.0	33.0	0.0
Act Effct Green (s)		6.3		37.0	44.0						24.5	
Actuated g/C Ratio		0.08		0.48	0.57						0.32	
v/c Ratio		0.39		0.92	0.05						0.87	
Uniform Delay, d1		27.9		18.9	7.0						24.9	
Delay		33.8		28.6	7.8						33.5	
LOS		C		C	A						C	
Approach Delay		33.8			27.3						33.5	
Approach LOS		C			C						C	
Queue Length 50th (ft)		26		384	12						238	
Queue Length 95th (ft)		56		#553	25						#353	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				34%								
95th Bay Block Time %				40%								
Queuing Penalty (veh)				19								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 81.7% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps



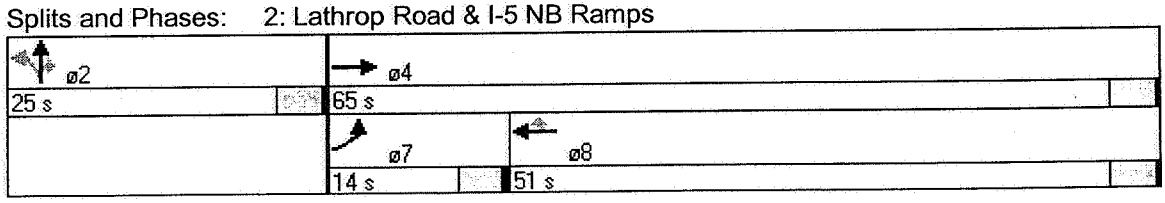
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						569			354			
Volume (vph)	38	383	0	0	531	472	155	0	244	0	0	0
Lane Group Flow (vph)	46	461	0	0	640	569	0	225	354	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	14.0	65.0	0.0	0.0	51.0	51.0	25.0	25.0	25.0	0.0	0.0	0.0
Act Effct Green (s)	7.6	28.5			25.2	25.2		13.2	13.2			
Actuated g/C Ratio	0.13	0.55			0.48	0.48		0.25	0.25			
v/c Ratio	0.20	0.46			0.72	0.54		0.51	0.54			
Uniform Delay, d1	24.7	5.7			11.0	0.0		17.0	0.0			
Delay	31.0	6.2			12.1	1.2		22.3	3.7			
LOS	C	A			B	A		C	A			
Approach Delay		8.4			7.0			10.9				
Approach LOS		A			A			B				
Queue Length 50th (ft)	9	56			89	0		41	0			
Queue Length 95th (ft)	53	132			326	30		136	0			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150								250			
50th Bay Block Time %												
95th Bay Block Time %		3%										
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 52.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 8.3
Intersection Capacity Utilization 61.0%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



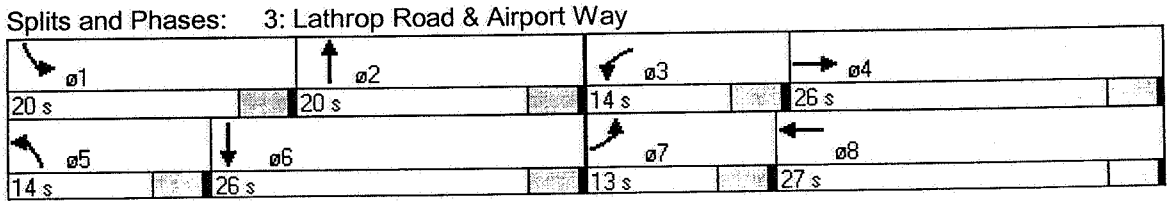
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3391	0	1736	3370	0	1736	4938	0	1736	4778	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3391	0	1736	3370	0	1736	4938	0	1736	4778	0
Satd. Flow (RTOR)		25			37			13			71	
Volume (vph)	59	333	59	87	497	119	86	308	22	168	151	59
Lane Group Flow (vph)	86	569	0	98	692	0	105	403	0	202	253	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	26.0	0.0	14.0	27.0	0.0	14.0	20.0	0.0	20.0	26.0	0.0
Act Effct Green (s)	8.2	16.8		8.6	19.6		8.7	11.2		11.9	14.2	
Actuated g/C Ratio	0.13	0.28		0.14	0.33		0.14	0.19		0.19	0.24	
v/c Ratio	0.38	0.58		0.40	0.61		0.43	0.43		0.60	0.21	
Uniform Delay, d1	27.4	17.3		25.7	16.2		25.8	21.0		24.5	13.2	
Delay	30.9	20.1		29.8	18.7		29.8	24.5		26.3	15.7	
LOS	C	C		C	B		C	C		C	B	
Approach Delay		21.6			20.1			25.6			20.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	33	101		38	126		40	50		77	17	
Queue Length 95th (ft)	62	121		90	203		87	82		141	34	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %												
95th Bay Block Time %					13%							
Queuing Penalty (veh)					6							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 59.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 21.7
Intersection Capacity Utilization 56.8%

Intersection LOS: C
ICU Level of Service A

Splits and Phases: 3: Lathrop Road & Airport Way

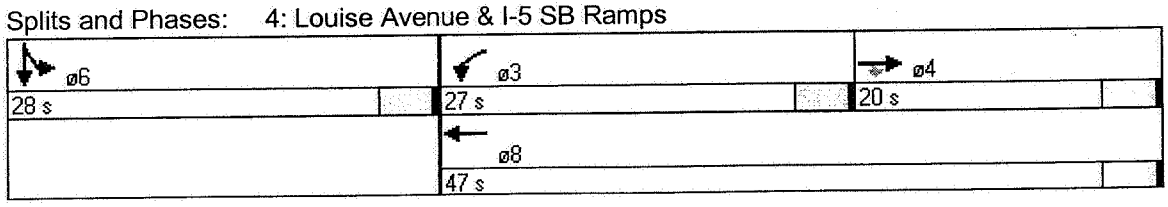


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑					↖	↱	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1736	1553	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	3471	1553	1736	3471	0	0	0	0	1736	1553	0
Satd. Flow (RTOR)			615								125	
Volume (vph)	0	567	602	408	744	0	0	0	0	310	0	420
Lane Group Flow (vph)	0	683	725	516	942	0	0	0	0	425	575	0
Turn Type			Perm	Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases			4									
Total Split (s)	0.0	20.0	20.0	27.0	47.0	0.0	0.0	0.0	0.0	28.0	28.0	0.0
Act Effct Green (s)		16.0	16.0	23.0	43.0					24.0	24.0	
Actuated g/C Ratio		0.21	0.21	0.31	0.57					0.32	0.32	
v/c Ratio		0.92	0.89	0.97	0.47					0.76	0.99	
Uniform Delay, d1		28.9	4.0	25.6	9.4					23.0	19.8	
Delay		41.7	13.1	51.8	9.6					26.7	48.5	
LOS		D	B	D	A					C	D	
Approach Delay		27.0			24.5						39.2	
Approach LOS		C			C						D	
Queue Length 50th (ft)		164	44	235	123					176	203	
Queue Length 95th (ft)		#230	#193	#341	137					209	#266	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		30%										
95th Up Block Time (%)		44%	22%									
Turn Bay Length (ft)			250	190						300		
50th Bay Block Time %				20%								
95th Bay Block Time %				38%								
Queuing Penalty (veh)				134								

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 29.2 Intersection LOS: C
Intersection Capacity Utilization 119.1% ICU Level of Service G
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps

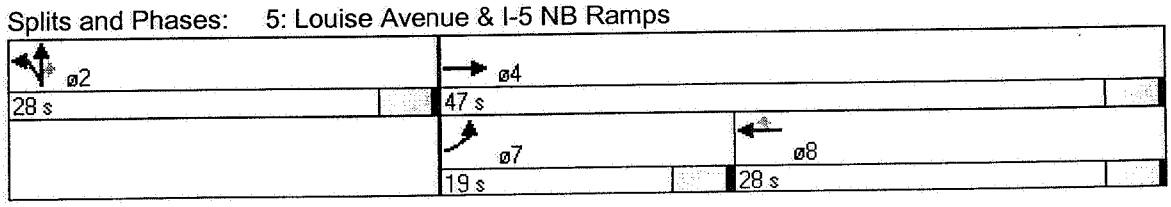


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	3471	1553	1736	1480	1475	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1736	3471	0	0	3471	1553	1736	1480	1475	0	0	0
Satd. Flow (RTOR)						696		128	128			
Volume (vph)	214	662	0	0	785	529	345	5	583	0	0	0
Lane Group Flow (vph)	301	932	0	0	1033	696	473	406	400	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Total Split (s)	19.0	47.0	0.0	0.0	28.0	28.0	28.0	28.0	28.0	0.0	0.0	0.0
Act Effct Green (s)	14.4	42.1			23.7	23.7	22.5	22.5	22.5			
Actuated g/C Ratio	0.20	0.58			0.33	0.33	0.31	0.31	0.31			
v/c Ratio	0.88	0.46			0.91	0.71	0.88	0.74	0.73			
Uniform Delay, d1	28.2	8.7			23.4	0.0	23.7	14.9	14.7			
Delay	43.9	9.2			32.3	2.2	31.6	17.2	16.8			
LOS	D	A			C	A	C	B	B			
Approach Delay		17.7			20.2			22.4				
Approach LOS		B			C			C				
Queue Length 50th (ft)	137	121			242	0	203	111	108			
Queue Length 95th (ft)	#171	117			252	20	236	144	141			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100								460			
50th Bay Block Time %	27%	13%										
95th Bay Block Time %	38%	11%										
Queuing Penalty (veh)	151	36										

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 72.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 20.1 Intersection LOS: C
Intersection Capacity Utilization 86.6% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

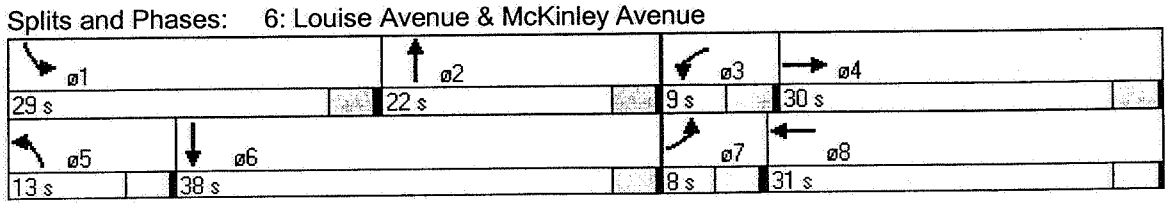


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3277	0	1736	3443	0	1736	1750	0	1736	1794	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3277	0	1736	3443	0	1736	1750	0	1736	1794	0
Satd. Flow (RTOR)		139			7			20			9	
Volume (vph)	23	457	274	51	613	35	47	95	37	189	88	12
Lane Group Flow (vph)	29	925	0	71	900	0	76	213	0	420	223	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	8.0	30.0	0.0	9.0	31.0	0.0	13.0	22.0	0.0	29.0	38.0	0.0
Act Effct Green (s)	4.2	22.8		5.3	26.5		8.0	13.3		21.7	30.4	
Actuated g/C Ratio	0.05	0.29		0.07	0.34		0.10	0.17		0.28	0.39	
v/c Ratio	0.32	0.87		0.62	0.76		0.43	0.67		0.86	0.31	
Uniform Delay, d1	39.5	22.2		38.3	24.3		35.9	27.2		28.3	17.0	
Delay	42.7	27.4		60.5	27.2		38.0	30.1		37.1	19.2	
LOS	D	C		E	C		D	C		D	B	
Approach Delay		27.9			29.7			32.1			30.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	16	215		39	202		40	100		215	85	
Queue Length 95th (ft)	39	250		#79	241		58	108		140	57	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		29%			25%					34%		
95th Bay Block Time %		35%			35%					13%		
Queuing Penalty (veh)		9			21					52		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.6 — Intersection LOS: C
Intersection Capacity Utilization 79.3% — ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

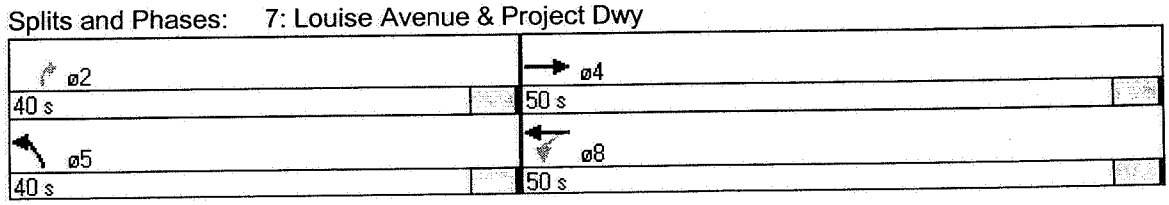


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3280	0	1736	3471	0	1736	0	1553	0	0	0
Flt Permitted				0.450			0.950					
Satd. Flow (perm)	0	3280	0	822	3471	0	1736	0	1553	0	0	0
Satd. Flow (RTOR)		174							109			
Volume (vph)	0	274	160	45	762	0	232	0	100	0	0	0
Lane Group Flow (vph)	0	472	0	49	828	0	252	0	109	0	0	0
Turn Type				Perm			custom		custom			
Protected Phases		4			8		5					
Permitted Phases				8			5		2			
Total Split (s)	0.0	50.0	0.0	50.0	50.0	0.0	40.0	0.0	40.0	0.0	0.0	0.0
Act Effct Green (s)		14.3		14.3	14.3		10.2		10.2			
Actuated g/C Ratio		0.43		0.43	0.43		0.31		0.31			
v/c Ratio		0.31		0.14	0.55		0.47		0.20			
Uniform Delay, d1		3.6		5.4	6.7		8.9		0.0			
Delay		4.0		6.5	7.3		10.5		3.1			
LOS		A		A	A		B		A			
Approach Delay		4.0			7.3							
Approach LOS		A			A							
Queue Length 50th (ft)		13		4	46		32		0			
Queue Length 95th (ft)		42		21	111		99		21			
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 33.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.6
Intersection LOS: A
Intersection Capacity Utilization 43.5%
ICU Level of Service A

Splits and Phases: 7: Louise Avenue & Project Dwy



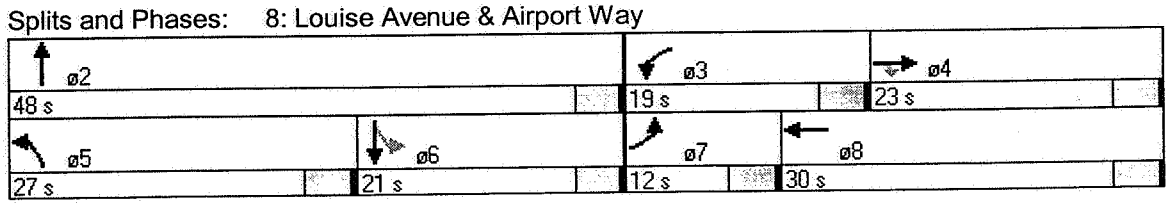
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3433	0	1736	4878	0	1736	4758	0
Flt Permitted	0.950			0.950			0.950			0.516		
Satd. Flow (perm)	1736	3471	1553	1736	3433	0	1736	4878	0	943	4758	0
Satd. Flow (RTOR)			98		9			52			110	
Volume (vph)	40	253	81	106	500	40	195	269	46	28	251	112
Lane Group Flow (vph)	48	305	98	128	650	0	238	384	0	30	390	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	12.0	23.0	23.0	19.0	30.0	0.0	27.0	48.0	0.0	21.0	21.0	0.0
Act Effct Green (s)	7.4	14.2	14.2	10.1	19.1		13.6	24.2		10.4	10.4	
Actuated g/C Ratio	0.12	0.24	0.24	0.17	0.32		0.22	0.41		0.18	0.18	
v/c Ratio	0.23	0.37	0.22	0.44	0.58		0.62	0.19		0.18	0.42	
Uniform Delay, d1	27.2	18.5	0.0	24.6	17.0		23.3	9.3		21.2	15.7	
Delay	32.5	23.3	6.7	28.5	19.8		24.6	9.9		29.5	19.4	
LOS	C	C	A	C	B		C	A		C	B	
Approach Delay		20.7			21.2			15.5			20.1	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	17	52	0	46	116		85	31		11	32	
Queue Length 95th (ft)	54	104	32	107	196		165	45		40	80	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 59.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 19.3
Intersection Capacity Utilization 55.9%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 8: Louise Avenue & Airport Way

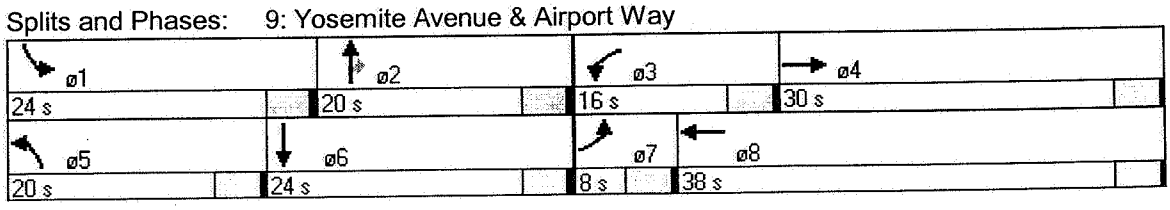


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3384	0	1736	3263	0	1736	4988	1553	1736	4903	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3384	0	1736	3263	0	1736	4988	1553	1736	4903	0
Satd. Flow (RTOR)		26			208				154		24	
Volume (vph)	10	456	91	138	464	312	162	279	140	257	331	44
Lane Group Flow (vph)	16	868	0	170	958	0	178	307	154	317	463	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	8.0	30.0	0.0	16.0	38.0	0.0	20.0	20.0	20.0	24.0	24.0	0.0
Act Effct Green (s)	4.1	23.0		10.8	36.6		12.5	10.3	10.3	17.4	18.3	
Actuated g/C Ratio	0.05	0.29		0.14	0.47		0.16	0.13	0.13	0.22	0.23	
v/c Ratio	0.19	0.85		0.71	0.58		0.66	0.47	0.45	0.82	0.40	
Uniform Delay, d1	40.7	24.5		34.3	13.1		34.7	32.4	0.0	31.2	25.9	
Delay	42.2	28.8		40.7	12.8		32.9	32.9	6.5	36.5	27.0	
LOS	D	C		D	B		C	C	A	D	C	
Approach Delay		29.1			17.0			26.5			30.8	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	8	216		87	135		89	56	0	158	75	
Queue Length 95th (ft)	21	187		#153	207		157	83	50	#247	97	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %		38%		31%	29%							
95th Bay Block Time %		34%		55%	43%		34%			5%		
Queuing Penalty (veh)		5		206	60		17			4		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 78.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 70.9% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way

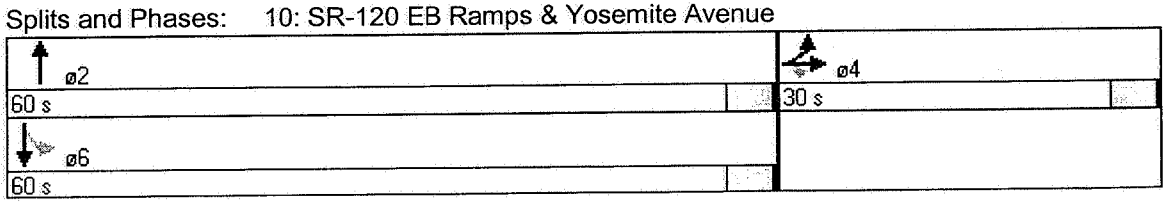


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1649	1654	1553	0	0	0	0	1662	0	0	1765	0
Flt Permitted	0.950	0.953									0.525	
Satd. Flow (perm)	1649	1654	1553	0	0	0	0	1662	0	0	959	0
Satd. Flow (RTOR)			311					213				
Volume (vph)	652	3	261	0	0	0	0	115	231	193	78	0
Lane Group Flow (vph)	388	392	311	0	0	0	0	376	0	0	484	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Total Split (s)	30.0	30.0	30.0	0.0	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0
Act Effct Green (s)	20.8	20.8	20.8					37.9			37.9	
Actuated g/C Ratio	0.30	0.30	0.30					0.56			0.56	
v/c Ratio	0.77	0.78	0.45					0.37			0.91	
Uniform Delay, d1	20.6	20.7	0.0					3.0			12.5	
Delay	30.3	30.6	3.5					3.5			18.3	
LOS	C	C	A					A			B	
Approach Delay		22.8						3.5			18.3	
Approach LOS		C						A			B	
Queue Length 50th (ft)	176	178	0					32			190	
Queue Length 95th (ft)	#327	#330	45					67			133	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 68.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 80.0% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue

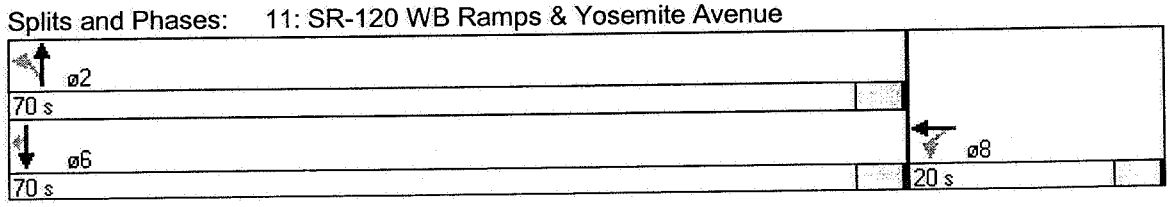


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1685	0	0	1796	0	0	1827	1553
Flt Permitted					0.969			0.817				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1493	0	0	1827	1553
Satd. Flow (RTOR)					27							818
Volume (vph)	0	0	0	121	0	66	262	500	0	0	151	720
Lane Group Flow (vph)	0	0	0	0	271	0	0	989	0	0	172	818
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	70.0	70.0	0.0	0.0	70.0	70.0
Act Effct Green (s)					14.6			58.9			58.9	58.9
Actuated g/C Ratio					0.18			0.72			0.72	0.72
v/c Ratio					0.84			0.92			0.13	0.61
Uniform Delay, d1					29.0			9.3			3.5	0.0
Delay					41.3			16.2			3.6	0.4
LOS					D			B			A	A
Approach Delay					41.3			16.2			0.9	
Approach LOS					D			B			A	
Queue Length 50th (ft)					136			367			24	0
Queue Length 95th (ft)					159			395			40	20
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								9%				
95th Up Block Time (%)								10%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								92				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 81.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 12.5
Intersection LOS: B
Intersection Capacity Utilization 129.2%
ICU Level of Service H

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue



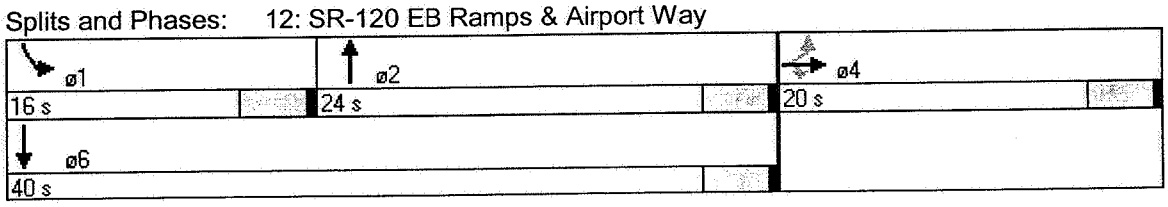
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)			87					49				
Volume (vph)	170	0	66	0	0	0	0	443	101	149	271	0
Lane Group Flow (vph)	0	224	87	0	0	0	0	680	0	175	319	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	20.0	20.0	20.0	0.0	0.0	0.0	0.0	24.0	0.0	16.0	40.0	0.0
Act Effct Green (s)		11.4	11.4					22.9		9.6	34.5	
Actuated g/C Ratio		0.22	0.22					0.45		0.18	0.68	
v/c Ratio		0.60	0.22					0.44		0.55	0.14	
Uniform Delay, d1		19.7	0.0					10.0		20.6	3.4	
Delay		17.2	5.1					13.0		19.0	4.4	
LOS		B	A					B		B	A	
Approach Delay		13.8						13.0			9.6	
Approach LOS		B						B			A	
Queue Length 50th (ft)		55	0					77		44	17	
Queue Length 95th (ft)		102	19					123		103	35	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)			250							300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 51
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 12.0
Intersection Capacity Utilization 51.4%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 12: SR-120 EB Ramps & Airport Way



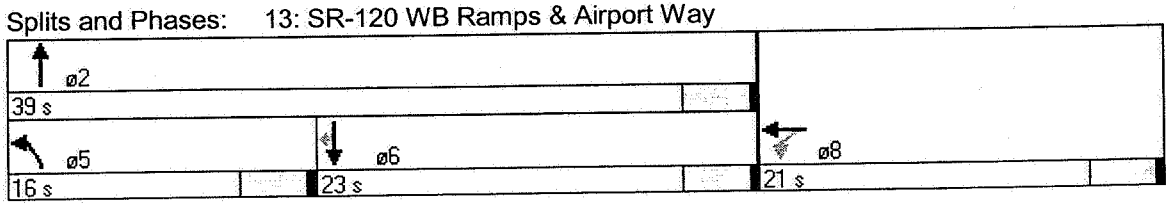
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1617	0	1736	3471	0	0	3471	1553
Flt Permitted					0.989		0.950					
Satd. Flow (perm)	0	0	0	0	1617	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					295							651
Volume (vph)	0	0	0	96	0	337	188	441	0	0	323	566
Lane Group Flow (vph)	0	0	0	0	461	0	232	544	0	0	371	651
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	21.0	21.0	0.0	16.0	39.0	0.0	0.0	23.0	23.0
Act Effct Green (s)					10.9		10.2	24.0			13.0	13.0
Actuated g/C Ratio					0.25		0.22	0.55			0.30	0.30
v/c Ratio					0.74		0.60	0.29			0.36	0.71
Uniform Delay, d1					5.1		16.9	4.8			12.1	0.0
Delay					7.3		21.9	5.4			14.4	2.1
LOS					A		C	A			B	A
Approach Delay					7.3			10.3			6.6	
Approach LOS					A			B			A	
Queue Length 50th (ft)					38		54	30			43	0
Queue Length 95th (ft)					139		126	58			81	53
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 44
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 8.0
Intersection Capacity Utilization 90.9%

Intersection LOS: A
ICU Level of Service E

Splits and Phases: 13: SR-120 WB Ramps & Airport Way

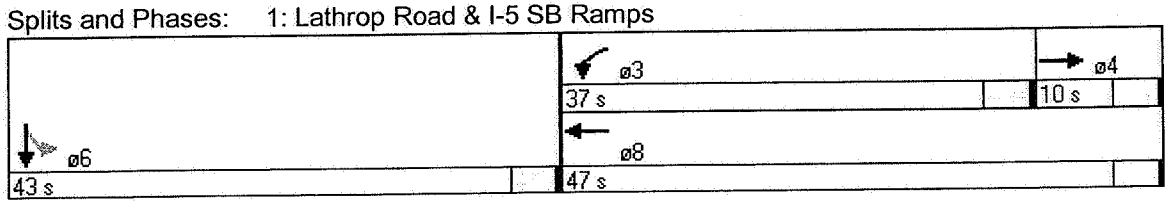


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Flt Permitted				0.950							0.953	
Satd. Flow (perm)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Satd. Flow (RTOR)		1										
Volume (vph)	0	82	2	525	40	0	0	0	0	624	2	3
Lane Group Flow (vph)	0	108	0	625	48	0	0	0	0	0	749	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	10.0	0.0	37.0	47.0	0.0	0.0	0.0	0.0	43.0	43.0	0.0
Act Effct Green (s)		6.0		33.0	43.0						39.0	
Actuated g/C Ratio		0.07		0.37	0.48						0.43	
v/c Ratio		0.89		0.98	0.05						0.99	
Uniform Delay, d1		41.2		28.2	12.6						25.4	
Delay		85.0		54.1	12.8						51.6	
LOS		F		D	B						D	
Approach Delay		85.0			51.1						51.6	
Approach LOS		F			D						D	
Queue Length 50th (ft)		62		346	14						411	
Queue Length 95th (ft)		#128		#508	30						#588	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				39%								
95th Bay Block Time %				49%								
Queuing Penalty (veh)				21								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.7 Intersection LOS: D
Intersection Capacity Utilization 89.5% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps

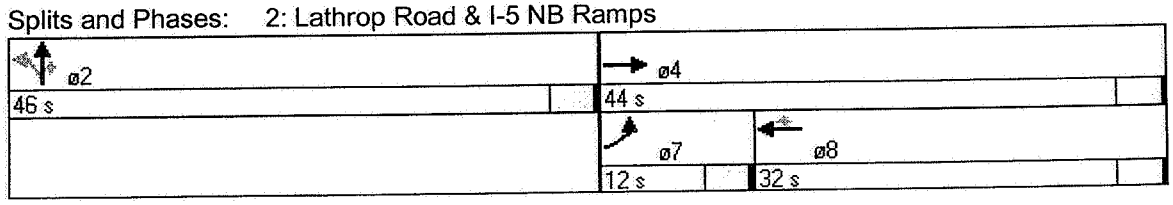


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						476			103			
Volume (vph)	46	656	0	0	382	395	183	0	524	0	0	0
Lane Group Flow (vph)	55	790	0	0	460	476	0	265	759	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	12.0	44.0	0.0	0.0	32.0	32.0	46.0	46.0	46.0	0.0	0.0	0.0
Act Effct Green (s)	7.3	39.3			30.1	30.1		41.3	41.3			
Actuated g/C Ratio	0.08	0.44			0.34	0.34		0.47	0.47			
v/c Ratio	0.39	0.97			0.74	0.57		0.33	0.98			
Uniform Delay, d1	40.1	23.9			26.3	0.0		15.3	20.5			
Delay	39.4	43.6			31.9	2.6		15.4	40.1			
LOS	D	D			C	A		B	D			
Approach Delay		43.3			17.0			33.7				
Approach LOS		D			B			C				
Queue Length 50th (ft)	30	425			239	0		91	344			
Queue Length 95th (ft)	62	#588			320	45		105	310			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150								250			
50th Bay Block Time %		38%							17%			
95th Bay Block Time %		44%							14%			
Queuing Penalty (veh)		22							40			

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 88.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 95.3% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps

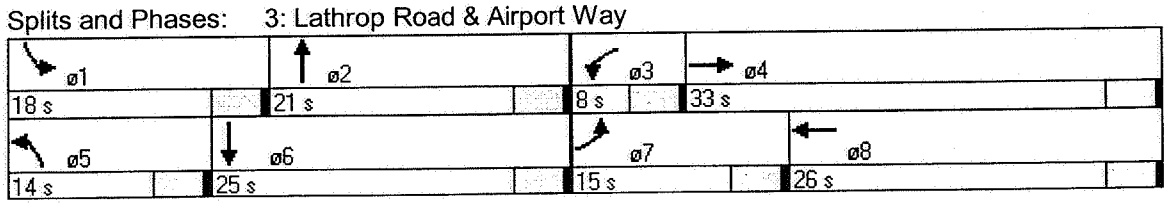


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3405	0	1736	3360	0	1736	4803	0	1736	4883	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3405	0	1736	3360	0	1736	4803	0	1736	4883	0
Satd. Flow (RTOR)		23			42			94			39	
Volume (vph)	79	658	98	49	444	119	89	247	81	198	335	56
Lane Group Flow (vph)	114	1096	0	55	633	0	109	400	0	239	471	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	15.0	33.0	0.0	8.0	26.0	0.0	14.0	21.0	0.0	18.0	25.0	0.0
Act Effct Green (s)	8.9	25.3		4.1	19.2		8.5	9.6		12.3	16.3	
Actuated g/C Ratio	0.14	0.40		0.06	0.30		0.13	0.15		0.19	0.25	
v/c Ratio	0.49	0.81		0.52	0.61		0.49	0.50		0.72	0.37	
Uniform Delay, d1	28.2	18.3		32.1	18.3		28.5	19.0		25.5	19.0	
Delay	29.3	19.5		46.6	19.8		29.9	20.7		32.5	21.4	
LOS	C	B		D	B		C	C		C	C	
Approach Delay		20.4			21.9			22.7			25.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	48	219		25	115		46	43		102	60	
Queue Length 95th (ft)	73	210		#78	178		87	65		#184	84	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %		12%										
95th Bay Block Time %		10%			6%							
Queuing Penalty (veh)		13			1							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 64
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 68.8% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way

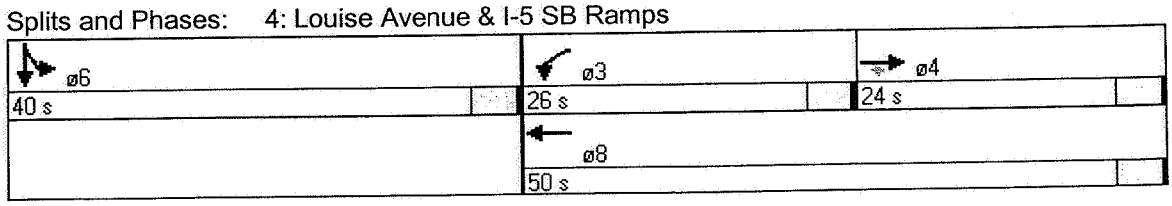


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑					↰	↱	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1736	1555	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	3471	1553	1736	3471	0	0	0	0	1736	1555	0
Satd. Flow (RTOR)			704								62	
Volume (vph)	0	672	709	363	864	0	0	0	0	406	2	485
Lane Group Flow (vph)	0	810	854	459	1094	0	0	0	0	556	667	0
Turn Type			Perm	Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases			4									
Total Split (s)	0.0	24.0	24.0	26.0	50.0	0.0	0.0	0.0	0.0	40.0	40.0	0.0
Act Effct Green (s)		20.0	20.0	22.0	46.0					36.0	36.0	
Actuated g/C Ratio		0.22	0.22	0.24	0.51					0.40	0.40	
v/c Ratio		1.05	0.96	1.08	0.62					0.80	1.01	
Uniform Delay, d1		35.0	5.8	34.0	15.7					23.8	24.4	
Delay		74.6	22.7	90.5	16.0					27.3	57.2	
LOS		E	C	F	B					C	E	
Approach Delay		48.0			38.0						43.6	
Approach LOS		D			D						D	
Queue Length 50th (ft)		~266	84	~295	222					273	~339	
Queue Length 95th (ft)		#334	#275	#391	234					294	#372	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		47%	5%									
95th Up Block Time (%)		55%	39%									
Turn Bay Length (ft)			250	190						300		
50th Bay Block Time %		8%		32%	11%					1%	12%	
95th Bay Block Time %		27%	11%	47%	13%					6%	16%	
Queuing Penalty (veh)		150	22	214	54					19	78	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 43.3 Intersection LOS: D
Intersection Capacity Utilization 129.6% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	3471	1553	1736	1477	1475	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1736	3471	0	0	3471	1553	1736	1477	1475	0	0	0
Satd. Flow (RTOR)						759		50	50			
Volume (vph)	231	854	0	0	790	709	425	4	869	0	0	0
Lane Group Flow (vph)	325	1203	0	0	1039	933	582	600	595	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Total Split (s)	21.0	51.0	0.0	0.0	30.0	30.0	39.0	39.0	39.0	0.0	0.0	0.0
Act Effct Green (s)	17.0	47.0			26.0	26.0	35.0	35.0	35.0			
Actuated g/C Ratio	0.19	0.52			0.29	0.29	0.39	0.39	0.39			
v/c Ratio	0.99	0.66			1.04	0.94	0.86	0.99	0.99			
Uniform Delay, d1	36.4	15.7			32.0	5.4	25.3	25.0	24.9			
Delay	75.9	16.0			64.9	19.0	32.4	54.2	52.7			
LOS	E	B			E	B	C	D	D			
Approach Delay		28.8			43.2			46.5				
Approach LOS		C			D			D				
Queue Length 50th (ft)	186	248			~338	97	298	311	307			
Queue Length 95th (ft)	#239	221			#341	119	319	#355	#348			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	500								460			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

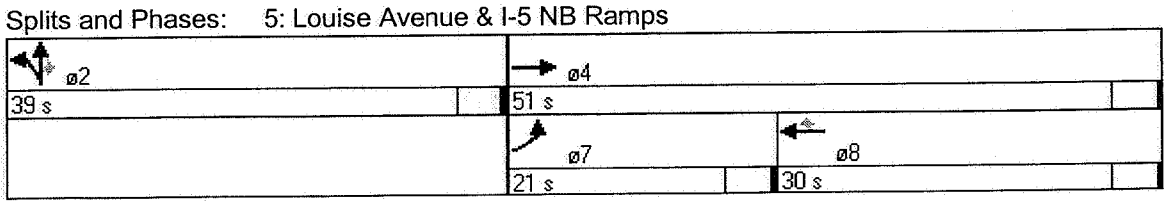
Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 40.1 Intersection LOS: D
Intersection Capacity Utilization 110.6% ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

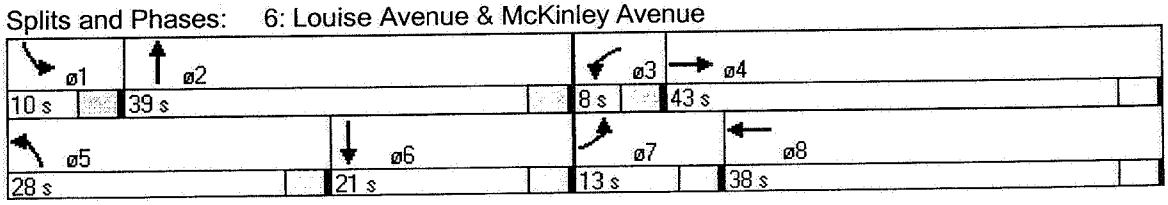


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3329	0	1736	3443	0	1736	1703	0	1736	1730	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3329	0	1736	3443	0	1736	1703	0	1736	1730	0
Satd. Flow (RTOR)		64			6			46			24	
Volume (vph)	48	771	291	47	532	30	261	76	63	18	58	32
Lane Group Flow (vph)	61	1344	0	65	781	0	421	225	0	40	200	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	43.0	0.0	8.0	38.0	0.0	28.0	39.0	0.0	10.0	21.0	0.0
Act Effct Green (s)	7.9	39.0		4.0	37.2		24.0	36.2		5.9	14.0	
Actuated g/C Ratio	0.08	0.40		0.04	0.38		0.25	0.37		0.06	0.14	
v/c Ratio	0.44	0.98		0.90	0.59		0.98	0.34		0.40	0.74	
Uniform Delay, d1	44.9	28.0		47.7	25.0		37.8	18.0		47.4	34.7	
Delay	43.4	46.8		122.3	25.5		73.7	18.4		46.0	35.1	
LOS	D	D		F	C		E	B		D	D	
Approach Delay		46.7			33.0			54.5			36.9	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	37	416		41	212		264	82		25	105	
Queue Length 95th (ft)	69	#438		#92	212		242	86		29	75	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		42%			28%		43%					
95th Bay Block Time %		43%			28%		40%					
Queuing Penalty (veh)		26			18		93					

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 97.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 90.1% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

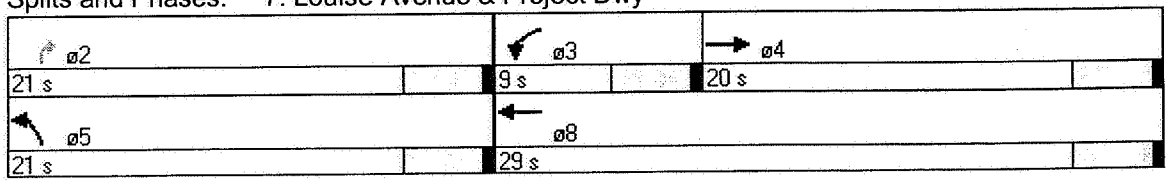


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑↑		↰		↱			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3266	0	1736	3471	0	1736	0	1553	0	0	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3266	0	1736	3471	0	1736	0	1553	0	0	0
Satd. Flow (RTOR)		317							118			
Volume (vph)	0	507	330	86	510	0	207	0	109	0	0	0
Lane Group Flow (vph)	0	910	0	93	554	0	225	0	118	0	0	0
Turn Type				Prot			custom		custom			
Protected Phases		4		3	8		5					
Permitted Phases							5		2			
Total Split (s)	0.0	20.0	0.0	9.0	29.0	0.0	21.0	0.0	21.0	0.0	0.0	0.0
Act Effct Green (s)		12.8		5.2	17.1		10.5		10.5			
Actuated g/C Ratio		0.35		0.13	0.47		0.29		0.29			
v/c Ratio		0.68		0.42	0.34		0.45		0.22			
Uniform Delay, d1		6.7		17.4	5.4		11.3		0.0			
Delay		7.6		23.4	6.0		12.9		3.6			
LOS		A		C	A		B		A			
Approach Delay		7.6			8.5							
Approach LOS		A			A							
Queue Length 50th (ft)		57		22	30		47		0			
Queue Length 95th (ft)		126		#73	66		95		24			
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 36.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 8.3 Intersection LOS: A
Intersection Capacity Utilization 54.4% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy

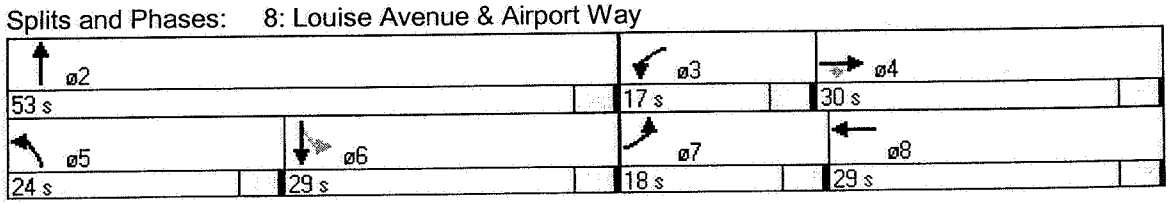


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3398	0	1736	4698	0	1736	4853	0
Flt Permitted	0.950			0.950			0.950			0.391		
Satd. Flow (perm)	1736	3471	1553	1736	3398	0	1736	4698	0	714	4853	0
Satd. Flow (RTOR)			104		17			226			47	
Volume (vph)	86	444	86	76	395	63	142	329	210	99	264	59
Lane Group Flow (vph)	104	535	104	92	552	0	173	657	0	106	347	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	18.0	30.0	30.0	17.0	29.0	0.0	24.0	53.0	0.0	29.0	29.0	0.0
Act Effct Green (s)	10.0	17.5	17.5	9.6	17.1		12.5	28.5		16.0	16.0	
Actuated g/C Ratio	0.15	0.26	0.26	0.14	0.26		0.18	0.43		0.24	0.24	
v/c Ratio	0.41	0.59	0.21	0.38	0.63		0.55	0.31		0.62	0.29	
Uniform Delay, d1	27.8	21.1	0.0	27.9	20.8		26.7	7.3		22.2	17.5	
Delay	34.3	25.5	6.5	34.8	25.4		31.3	8.0		32.1	21.2	
LOS	C	C	A	C	C		C	A		C	C	
Approach Delay		24.1			26.8			12.9			23.8	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	42	108	0	37	110		69	35		41	34	
Queue Length 95th (ft)	105	192	33	96	197		149	63		#130	83	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 66.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 54.0% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3357	0	1736	3239	0	1736	4988	1553	1736	4918	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3357	0	1736	3239	0	1736	4988	1553	1736	4918	0
Satd. Flow (RTOR)		38			206				282		17	
Volume (vph)	157	561	157	206	394	319	83	443	257	289	326	35
Lane Group Flow (vph)	249	1139	0	254	880	0	91	487	282	357	445	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	22.0	37.0	0.0	18.0	33.0	0.0	15.0	21.0	21.0	24.0	30.0	0.0
Act Effct Green (s)	16.7	33.0		14.0	30.3		9.5	15.0	15.0	20.0	27.6	
Actuated g/C Ratio	0.17	0.34		0.14	0.31		0.09	0.15	0.15	0.20	0.28	
v/c Ratio	0.84	0.99		1.02	0.77		0.55	0.64	0.59	1.01	0.32	
Uniform Delay, d1	39.8	31.7		42.4	23.4		43.8	38.6	0.0	39.4	27.0	
Delay	48.2	53.3		100.1	24.8		42.8	39.0	4.9	85.1	27.8	
LOS	D	D		F	C		D	D	A	F	C	
Approach Delay		52.4			41.7			28.2			53.3	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	151	362		~172	209		55	105	0	~231	80	
Queue Length 95th (ft)	158	272		#282	243		107	142	72	#355	98	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %	32%	48%		57%	49%			3%				
95th Bay Block Time %	34%	42%		71%	52%		11%	24%		34%		
Queuing Penalty (veh)	186	112		282	128		9	11		25		

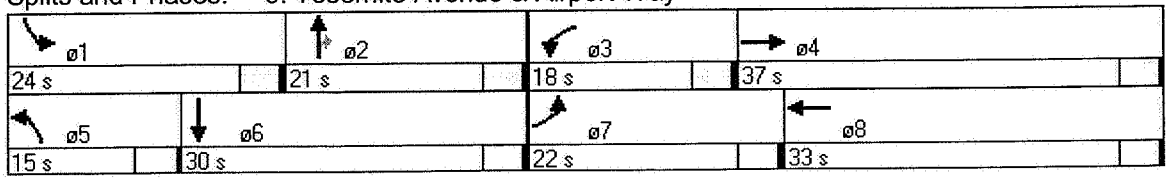
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 44.7 Intersection LOS: D
Intersection Capacity Utilization 89.2% ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1649	1652	1553	0	0	0	0	1675	0	0	1752	0
Flt Permitted	0.950	0.952									0.457	
Satd. Flow (perm)	1649	1652	1553	0	0	0	0	1675	0	0	835	0
Satd. Flow (RTOR)			404					219				
Volume (vph)	812	1	339	0	0	0	0	152	240	254	46	0
Lane Group Flow (vph)	484	484	404	0	0	0	0	426	0	0	536	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Total Split (s)	22.0	22.0	22.0	0.0	0.0	0.0	0.0	43.0	0.0	43.0	43.0	0.0
Act Effct Green (s)	18.0	18.0	18.0					39.0			39.0	
Actuated g/C Ratio	0.28	0.28	0.28					0.60			0.60	
v/c Ratio	1.06	1.06	0.56					0.39			1.07	
Uniform Delay, d1	23.5	23.5	0.0					2.9			13.0	
Delay	71.1	71.0	2.7					3.2			63.4	
LOS	E	E	A					A			E	
Approach Delay		50.9						3.2			63.4	
Approach LOS		D						A			E	
Queue Length 50th (ft)	~228	~227	0					29			~242	
Queue Length 95th (ft)	#361	#361	44					62			142	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

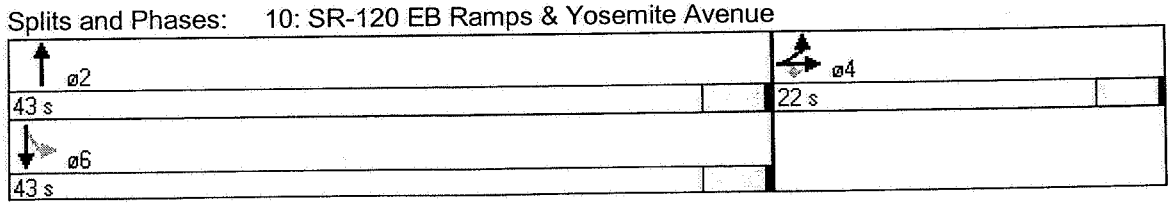
Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 45.1 Intersection LOS: D
Intersection Capacity Utilization 90.9% ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1692	0	0	1801	0	0	1827	1553
Flt Permitted					0.967			0.843				
Satd. Flow (perm)	0	0	0	0	1692	0	0	1540	0	0	1827	1553
Satd. Flow (RTOR)					15							952
Volume (vph)	0	0	0	137	0	63	286	754	0	0	166	838
Lane Group Flow (vph)	0	0	0	0	290	0	0	1350	0	0	189	952
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	23.0	23.0	0.0	107.0	107.0	0.0	0.0	107.0	107.0
Act Effct Green (s)					19.0			103.0			103.0	103.0
Actuated g/C Ratio					0.15			0.79			0.79	0.79
v/c Ratio					1.12			1.11			0.13	0.67
Uniform Delay, d1					52.3			13.5			3.1	0.0
Delay					117.6			68.2			3.2	0.2
LOS					F			E			A	A
Approach Delay					117.6			68.2			0.7	
Approach LOS					F			E			A	
Queue Length 50th (ft)					~269			~1295			31	0
Queue Length 95th (ft)					#291			#1180			47	17
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								20%				
95th Up Block Time (%)								17%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								251				

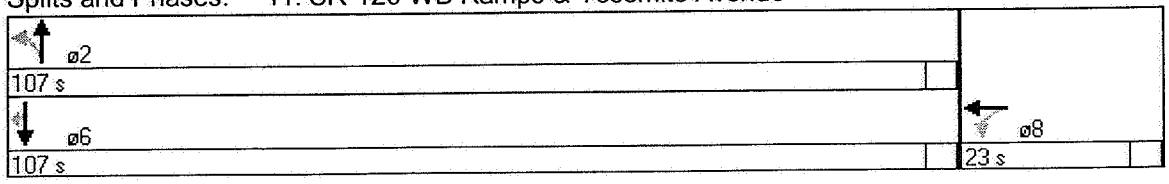
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 157.6% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue

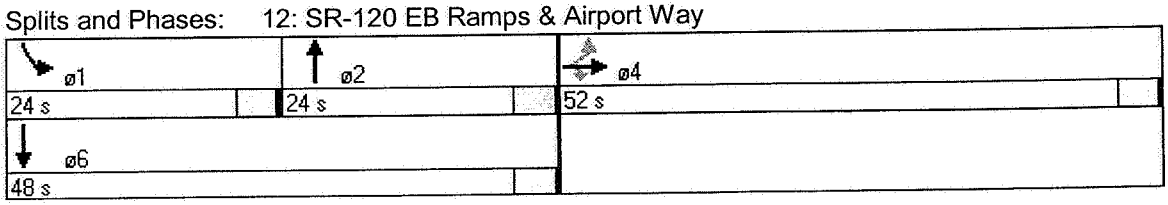


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)			254					25				
Volume (vph)	583	0	207	0	0	0	0	381	89	246	418	0
Lane Group Flow (vph)	0	767	272	0	0	0	0	587	0	289	492	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	52.0	52.0	52.0	0.0	0.0	0.0	0.0	24.0	0.0	24.0	48.0	0.0
Act Effct Green (s)		43.0	43.0					18.3		18.0	40.5	
Actuated g/C Ratio		0.47	0.47					0.20		0.20	0.44	
v/c Ratio		0.94	0.32					0.85		0.85	0.32	
Uniform Delay, d1		23.0	0.9					33.5		35.4	16.6	
Delay		34.0	2.6					39.6		46.8	17.7	
LOS		C	A					D		D	B	
Approach Delay		25.8						39.6			28.4	
Approach LOS		C						D			C	
Queue Length 50th (ft)		439	6					183		178	104	
Queue Length 95th (ft)		463	26					213		#286	133	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)			250							300		
50th Bay Block Time %		26%										
95th Bay Block Time %		27%										
Queuing Penalty (veh)		72										

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 91.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 85.2% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

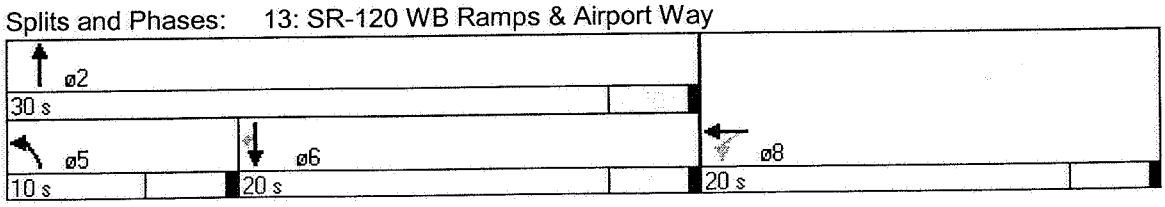


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1649	0	1736	3471	0	0	3471	1553
Flt Permitted					0.980		0.950					
Satd. Flow (perm)	0	0	0	0	1649	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					86							264
Volume (vph)	0	0	0	142	0	200	117	805	0	0	550	230
Lane Group Flow (vph)	0	0	0	0	364	0	144	994	0	0	632	264
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	10.0	30.0	0.0	0.0	20.0	20.0
Act Effct Green (s)					11.9		6.1	23.7			16.0	16.0
Actuated g/C Ratio					0.27		0.13	0.54			0.37	0.37
v/c Ratio					0.71		0.63	0.53			0.50	0.36
Uniform Delay, d1					11.1		19.5	6.2			11.1	0.0
Delay					11.3		31.4	7.3			12.9	2.5
LOS					B		C	A			B	A
Approach Delay					11.3			10.3			9.8	
Approach LOS					B			B			A	
Queue Length 50th (ft)					63		38	77			71	0
Queue Length 95th (ft)					137		#95	114			116	28
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 43.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 56.9% ICU Level of Service A
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: SR-120 WB Ramps & Airport Way



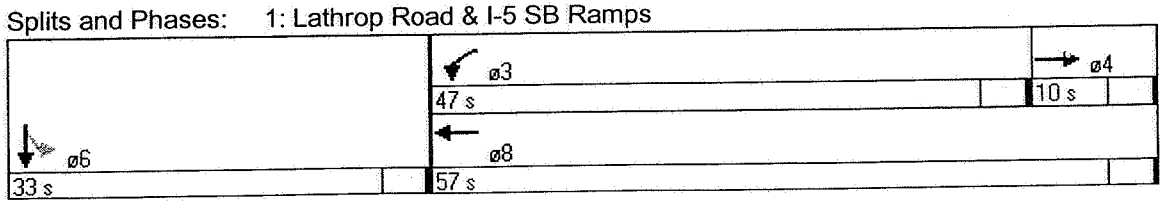
Cumulative 2025 + Project with Improvements
(Synchro Software)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Flt Permitted				0.950							0.954	
Satd. Flow (perm)	0	1768	0	1736	1827	0	0	0	0	0	1741	0
Satd. Flow (RTOR)		13									1	
Volume (vph)	0	36	11	637	44	0	0	0	0	390	7	3
Lane Group Flow (vph)	0	60	0	758	52	0	0	0	0	0	476	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	10.0	0.0	47.0	57.0	0.0	0.0	0.0	0.0	33.0	33.0	0.0
Act Effct Green (s)		6.3		37.0	44.0						24.5	
Actuated g/C Ratio		0.08		0.48	0.57						0.32	
v/c Ratio		0.39		0.92	0.05						0.87	
Uniform Delay, d1		27.9		18.9	7.0						24.9	
Delay		33.8		28.6	7.8						33.5	
LOS		C		C	A						C	
Approach Delay		33.8			27.3						33.5	
Approach LOS		C			C						C	
Queue Length 50th (ft)		26		384	12						238	
Queue Length 95th (ft)		56		#553	25						#353	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				34%								
95th Bay Block Time %				40%								
Queuing Penalty (veh)				19								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 81.7% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps



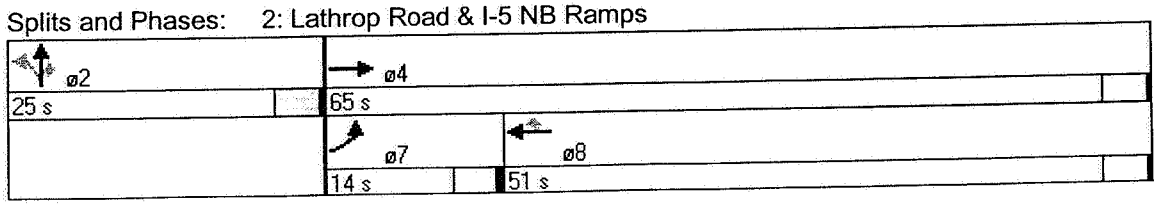
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						569			354			
Volume (vph)	38	383	0	0	531	472	155	0	244	0	0	0
Lane Group Flow (vph)	46	461	0	0	640	569	0	225	354	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	14.0	65.0	0.0	0.0	51.0	51.0	25.0	25.0	25.0	0.0	0.0	0.0
Act Effct Green (s)	7.6	28.5			25.2	25.2		13.2	13.2			
Actuated g/C Ratio	0.13	0.55			0.48	0.48		0.25	0.25			
v/c Ratio	0.20	0.46			0.72	0.54		0.51	0.54			
Uniform Delay, d1	24.7	5.7			11.0	0.0		17.0	0.0			
Delay	31.0	6.2			12.1	1.2		22.3	3.7			
LOS	C	A			B	A		C	A			
Approach Delay		8.4			7.0			10.9				
Approach LOS		A			A			B				
Queue Length 50th (ft)	9	56			89	0		41	0			
Queue Length 95th (ft)	53	132			326	30		136	0			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150								250			
50th Bay Block Time %												
95th Bay Block Time %		3%										
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 52.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 8.3
Intersection Capacity Utilization 61.0%

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps



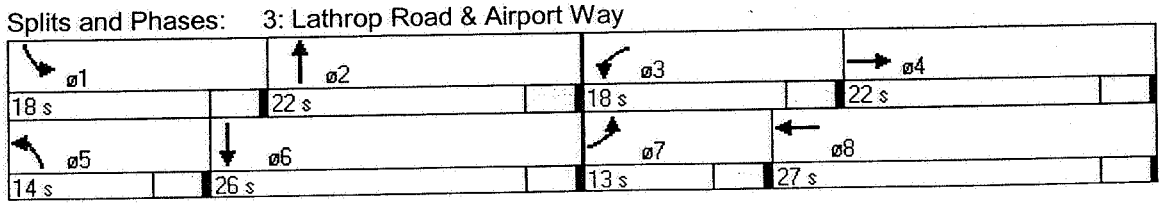
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3391	0	1736	3370	0	1736	4908	0	1736	4778	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3391	0	1736	3370	0	1736	4908	0	1736	4778	0
Satd. Flow (RTOR)		23			37			25			71	
Volume (vph)	59	333	59	164	497	119	86	308	38	168	151	59
Lane Group Flow (vph)	86	569	0	184	692	0	105	422	0	202	253	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	13.0	22.0	0.0	18.0	27.0	0.0	14.0	22.0	0.0	18.0	26.0	0.0
Act Effct Green (s)	8.2	15.3		11.1	18.0		8.7	11.3		11.6	13.9	
Actuated g/C Ratio	0.13	0.26		0.18	0.30		0.14	0.19		0.19	0.23	
v/c Ratio	0.37	0.64		0.59	0.66		0.43	0.44		0.62	0.22	
Uniform Delay, d1	25.8	19.1		24.7	17.3		25.6	20.3		24.7	13.3	
Delay	30.1	22.4		27.3	19.5		29.5	23.8		27.7	16.2	
LOS	C	C		C	B		C	C		C	B	
Approach Delay		23.4			21.2			24.9			21.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	34	112		73	129		42	54		79	17	
Queue Length 95th (ft)	61	126		141	195		84	81		142	34	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %												
95th Bay Block Time %					11%							
Queuing Penalty (veh)					10							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 59.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 22.6
Intersection Capacity Utilization 59.1%

Intersection LOS: C
ICU Level of Service A

Splits and Phases: 3: Lathrop Road & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↰	↑↑					↰	↕	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1736	1553	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	3471	1553	1736	3471	0	0	0	0	1736	1553	0
Satd. Flow (RTOR)			638								111	
Volume (vph)	0	567	602	437	744	0	0	0	0	440	0	420
Lane Group Flow (vph)	0	683	725	553	942	0	0	0	0	603	575	0
Turn Type			Perm	Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases			4									
Total Split (s)	0.0	21.0	21.0	32.0	53.0	0.0	0.0	0.0	0.0	37.0	37.0	0.0
Act Effct Green (s)		17.0	17.0	28.0	49.0					32.5	32.5	
Actuated g/C Ratio		0.19	0.19	0.31	0.55					0.36	0.36	
v/c Ratio		1.03	0.89	1.02	0.50					0.96	0.91	
Uniform Delay, d1		36.2	3.9	30.7	12.6					27.8	21.6	
Delay		75.6	12.7	68.9	12.9					46.5	32.7	
LOS		E	B	E	B					D	C	
Approach Delay		43.2			33.6						39.8	
Approach LOS		D			C						D	
Queue Length 50th (ft)		~223	43	~327	165					327	241	
Queue Length 95th (ft)		#292	#189	#430	178					347	263	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		42%										
95th Up Block Time (%)		54%	15%									
Turn Bay Length (ft)			250	190						300		
50th Bay Block Time %				33%						11%		
95th Bay Block Time %		16%		44%	2%					14%	1%	
Queuing Penalty (veh)		59		181						74		

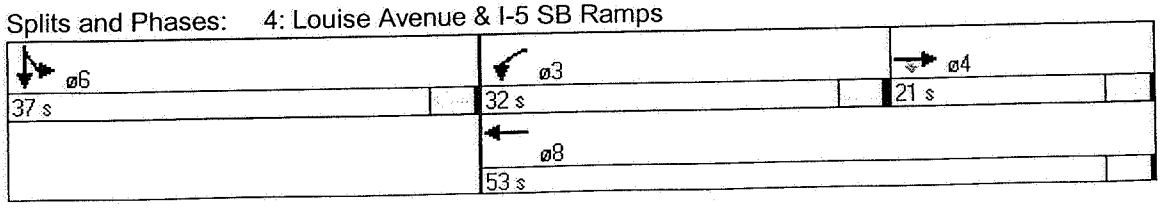
Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 89.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 38.7 Intersection LOS: D
Intersection Capacity Utilization 121.2% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps



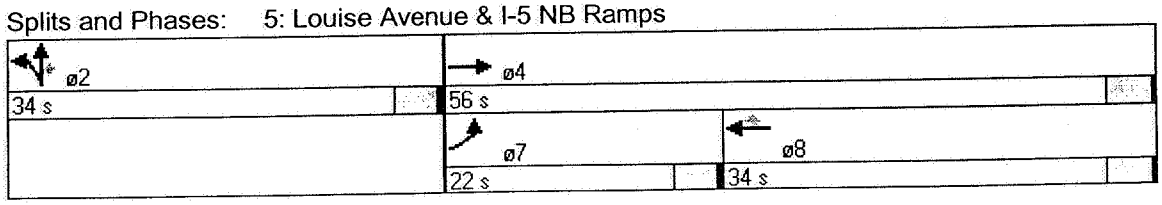
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	3471	1553	1736	1479	1475	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1736	3471	0	0	3471	1553	1736	1479	1475	0	0	0
Satd. Flow (RTOR)						720		84	84			
Volume (vph)	214	792	0	0	814	558	345	5	713	0	0	0
Lane Group Flow (vph)	301	1115	0	0	1071	734	473	495	489	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Total Split (s)	22.0	56.0	0.0	0.0	34.0	34.0	34.0	34.0	34.0	0.0	0.0	0.0
Act Effct Green (s)	16.9	50.2			29.2	29.2	27.9	27.9	27.9			
Actuated g/C Ratio	0.20	0.58			0.34	0.34	0.32	0.32	0.32			
v/c Ratio	0.88	0.55			0.91	0.73	0.84	0.92	0.91			
Uniform Delay, d1	33.7	11.1			27.1	0.4	27.0	23.1	23.0			
Delay	48.1	11.6			35.3	2.5	32.1	35.7	34.4			
LOS	D	B			D	A	C	D	C			
Approach Delay		19.4			21.9			34.1				
Approach LOS		B			C			C				
Queue Length 50th (ft)	167	192			305	5	244	227	223			
Queue Length 95th (ft)	195	173			306	20	271	255	251			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	250								460			
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 86.2
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 24.9
Intersection Capacity Utilization 92.7%

Intersection LOS: C
ICU Level of Service E

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps

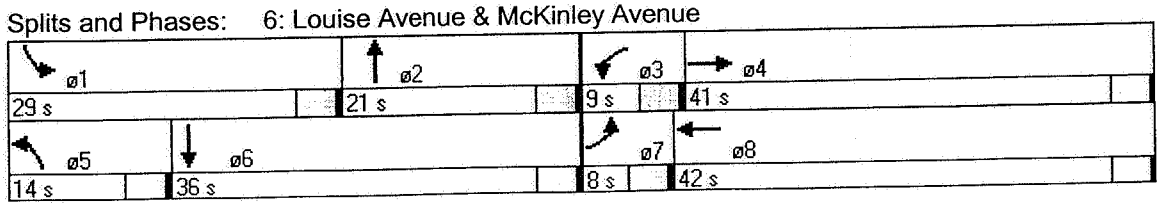


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3329	0	1736	3447	0	1736	1717	0	1736	1794	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3329	0	1736	3447	0	1736	1717	0	1736	1794	0
Satd. Flow (RTOR)		63			6			29			7	
Volume (vph)	23	717	274	57	671	35	47	95	63	189	88	12
Lane Group Flow (vph)	29	1255	0	79	981	0	76	255	0	420	223	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	8.0	41.0	0.0	9.0	42.0	0.0	14.0	21.0	0.0	29.0	36.0	0.0
Act Effct Green (s)	4.0	37.0		5.0	41.3		8.7	15.8		25.0	34.2	
Actuated g/C Ratio	0.04	0.37		0.05	0.42		0.09	0.16		0.25	0.35	
v/c Ratio	0.43	0.98		0.90	0.68		0.50	0.85		0.96	0.36	
Uniform Delay, d1	49.1	29.0		48.0	24.7		45.4	36.2		37.9	24.5	
Delay	48.7	47.2		108.3	24.7		43.5	44.3		65.8	25.0	
LOS	D	D		F	C		D	D		E	C	
Approach Delay		47.2			30.9			44.1			51.7	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	18	396		51	279		47	141		266	106	
Queue Length 95th (ft)	42	403		#102	258		62	141		160	76	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		43%			35%			12%		43%		
95th Bay Block Time %		43%			33%			12%		21%		
Queuing Penalty (veh)		12			27			9		71		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 98.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 42.5 Intersection LOS: D
Intersection Capacity Utilization 91.4% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

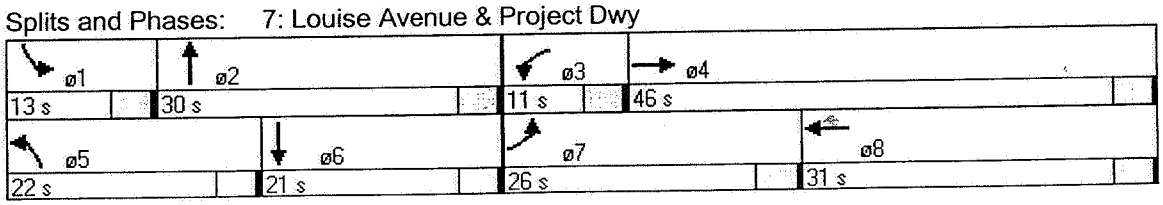


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3159	0	1671	3343	1495	1671	1508	0	1671	1513	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3159	0	1671	3343	1495	1671	1508	0	1671	1513	0
Satd. Flow (RTOR)		146				200		109			70	
Volume (vph)	286	274	160	45	762	232	232	5	100	50	5	64
Lane Group Flow (vph)	311	472	0	49	828	252	252	114	0	54	75	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	26.0	46.0	0.0	11.0	31.0	31.0	22.0	30.0	0.0	13.0	21.0	0.0
Act Effct Green (s)	18.8	41.5		6.8	24.1	24.1	15.8	17.1		7.8	6.9	
Actuated g/C Ratio	0.24	0.52		0.08	0.30	0.30	0.20	0.21		0.09	0.08	
v/c Ratio	0.79	0.28		0.36	0.82	0.43	0.76	0.28		0.35	0.39	
Uniform Delay, d1	30.4	8.0		38.9	25.6	4.1	31.9	1.1		38.1	2.4	
Delay	35.9	9.2		41.0	30.1	7.2	38.9	7.8		39.5	12.0	
LOS	D	A		D	C	A	D	A		D	B	
Approach Delay		19.8			25.4			29.2			23.5	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	161	54		27	224	21	133	2		29	2	
Queue Length 95th (ft)	#303	94		65	#342	85	#262	41		68	41	
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	400			150		150						
50th Bay Block Time %					25%							
95th Bay Block Time %					41%							
Queuing Penalty (veh)					16							

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 79.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.1 Intersection LOS: C
Intersection Capacity Utilization 70.8% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy



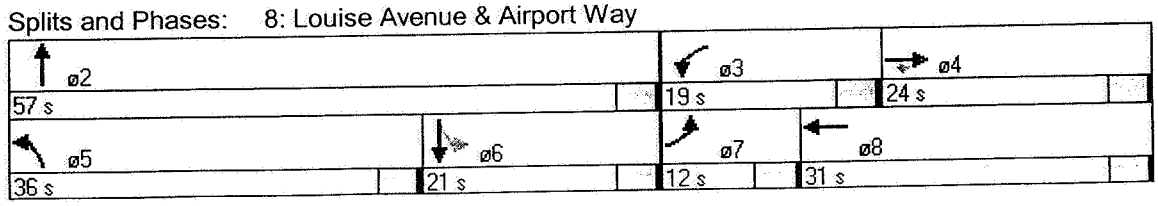
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3433	0	1736	4878	0	1736	4668	0
Flt Permitted	0.950			0.950			0.950			0.516		
Satd. Flow (perm)	1736	3471	1553	1736	3433	0	1736	4878	0	943	4668	0
Satd. Flow (RTOR)			131		8			50			163	
Volume (vph)	56	259	109	106	526	40	324	269	46	28	251	189
Lane Group Flow (vph)	67	312	131	128	682	0	395	384	0	30	473	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	12.0	24.0	24.0	19.0	31.0	0.0	36.0	57.0	0.0	21.0	21.0	0.0
Act Effct Green (s)	7.5	15.4	15.4	10.5	21.0		20.7	36.3		10.9	10.9	
Actuated g/C Ratio	0.10	0.21	0.21	0.14	0.29		0.29	0.50		0.15	0.15	
v/c Ratio	0.39	0.42	0.30	0.52	0.68		0.79	0.16		0.21	0.56	
Uniform Delay, d1	34.1	24.2	0.0	30.8	22.9		24.3	8.7		26.8	18.3	
Delay	39.7	28.7	6.8	35.1	25.5		26.5	9.5		34.9	21.2	
LOS	D	C	A	D	C		C	A		C	C	
Approach Delay		24.5			27.0			18.1			22.1	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	31	68	0	59	157		177	30		13	50	
Queue Length 95th (ft)	79	123	39	123	243		288	45		44	100	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %							3%					
95th Bay Block Time %							27%					
Queuing Penalty (veh)							17					

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 72.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 22.9
Intersection Capacity Utilization 67.8%

Intersection LOS: C
ICU Level of Service B

Splits and Phases: 8: Louise Avenue & Airport Way

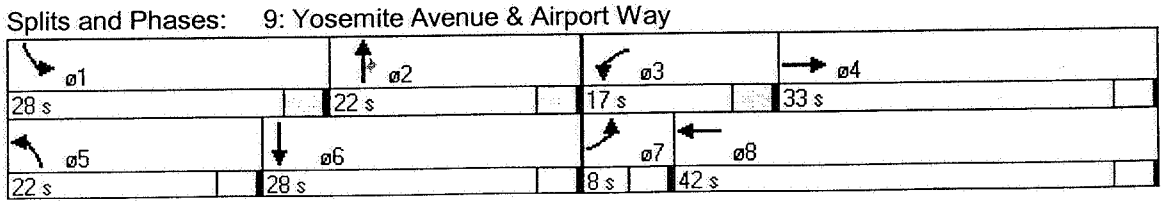


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3384	0	1736	3252	0	1736	4988	1553	1736	4903	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3384	0	1736	3252	0	1736	4988	1553	1736	4903	0
Satd. Flow (RTOR)		23			212				154		20	
Volume (vph)	10	456	91	138	464	338	162	382	140	263	353	44
Lane Group Flow (vph)	16	868	0	170	990	0	178	420	154	325	490	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	8.0	33.0	0.0	17.0	42.0	0.0	22.0	22.0	22.0	28.0	28.0	0.0
Act Effct Green (s)	4.1	25.0		11.6	38.0		13.4	12.8	12.8	19.6	22.3	
Actuated g/C Ratio	0.05	0.29		0.14	0.44		0.15	0.15	0.15	0.23	0.26	
v/c Ratio	0.20	0.86		0.73	0.64		0.67	0.56	0.42	0.82	0.38	
Uniform Delay, d1	43.5	27.3		37.3	15.4		37.8	34.5	0.0	33.3	26.5	
Delay	46.5	32.0		46.3	16.0		36.8	35.5	6.7	37.0	28.1	
LOS	D	C		D	B		D	D	A	D	C	
Approach Delay		32.3			20.4			29.9			31.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	10	246		99	166		101	87	0	181	88	
Queue Length 95th (ft)	22	212		#171	246		175	122	52	257	111	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %		41%		38%	33%		7%					
95th Bay Block Time %		38%		58%	46%		38%	14%		8%		
Queuing Penalty (veh)		6		237	66		32	12		6		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 85.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 73.5% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way

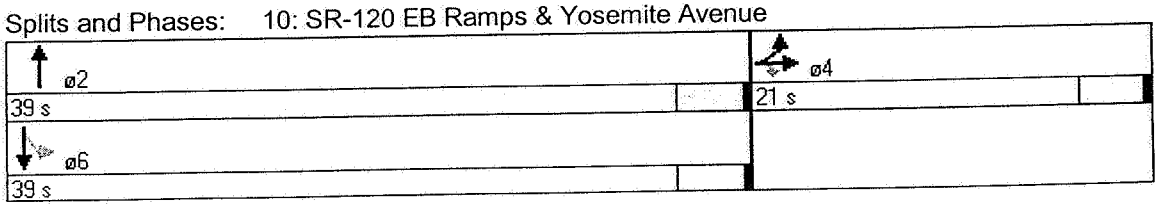


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1649	1654	1553	0	0	0	0	1662	0	0	1765	0
Flt Permitted	0.950	0.953									0.533	
Satd. Flow (perm)	1649	1654	1553	0	0	0	0	1662	0	0	974	0
Satd. Flow (RTOR)			311					251				
Volume (vph)	678	3	261	0	0	0	0	115	231	193	78	0
Lane Group Flow (vph)	404	407	311	0	0	0	0	376	0	0	484	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Total Split (s)	21.0	21.0	21.0	0.0	0.0	0.0	0.0	39.0	0.0	39.0	39.0	0.0
Act Effct Green (s)	15.8	15.8	15.8					29.2			29.2	
Actuated g/C Ratio	0.30	0.30	0.30					0.55			0.55	
v/c Ratio	0.83	0.83	0.46					0.37			0.91	
Uniform Delay, d1	17.3	17.3	0.0					1.9			10.6	
Delay	30.6	30.7	2.9					2.4			20.3	
LOS	C	C	A					A			C	
Approach Delay		23.0						2.4			20.3	
Approach LOS		C						A			C	
Queue Length 50th (ft)	145	146	0					0			127	
Queue Length 95th (ft)	#262	#265	39					44			101	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 53.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 80.9% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue

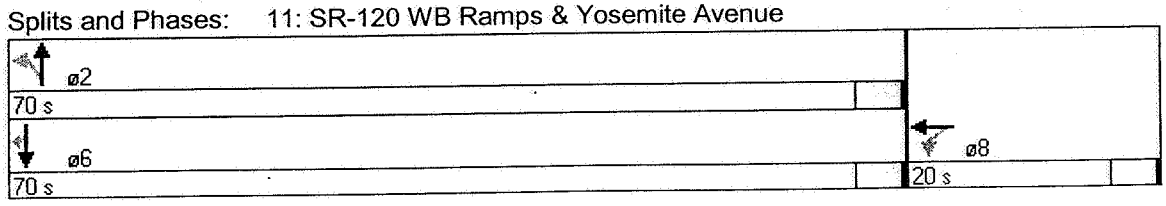


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1685	0	0	1798	0	0	1827	1553
Flt Permitted					0.969			0.822				
Satd. Flow (perm)	0	0	0	0	1685	0	0	1502	0	0	1827	1553
Satd. Flow (RTOR)					27							825
Volume (vph)	0	0	0	121	0	66	262	526	0	0	151	726
Lane Group Flow (vph)	0	0	0	0	271	0	0	1023	0	0	172	825
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	20.0	20.0	0.0	70.0	70.0	0.0	0.0	70.0	70.0
Act Effct Green (s)					14.8			61.2			61.2	61.2
Actuated g/C Ratio					0.18			0.73			0.73	0.73
v/c Ratio					0.85			0.94			0.13	0.61
Uniform Delay, d1					30.1			9.7			3.4	0.0
Delay					42.6			19.4			3.6	0.4
LOS					D			B			A	A
Approach Delay					42.6			19.4			0.9	
Approach LOS					D			B			A	
Queue Length 50th (ft)					136			402			24	0
Queue Length 95th (ft)					159			429			40	20
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								10%				
95th Up Block Time (%)								11%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								109				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 84.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 14.1
Intersection LOS: B
Intersection Capacity Utilization 131.4%
ICU Level of Service H

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue



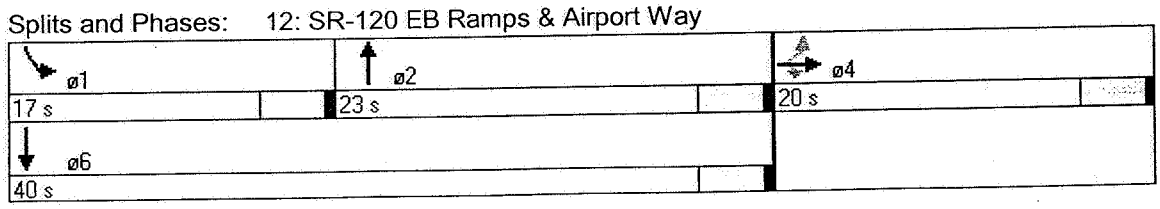
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)			87					48				
Volume (vph)	196	0	66	0	0	0	0	443	101	165	271	0
Lane Group Flow (vph)	0	258	87	0	0	0	0	680	0	194	319	0
Turn Type	Perm		Perm							Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	20.0	20.0	20.0	0.0	0.0	0.0	0.0	23.0	0.0	17.0	40.0	0.0
Act Effct Green (s)		11.9	11.9					21.7		10.0	33.0	
Actuated g/C Ratio		0.23	0.23					0.44		0.20	0.67	
v/c Ratio		0.64	0.20					0.45		0.57	0.14	
Uniform Delay, d1		19.3	0.0					10.3		19.9	3.5	
Delay		17.9	5.1					14.0		19.6	4.7	
LOS		B	A					B		B	A	
Approach Delay		14.7						14.0			10.4	
Approach LOS		B						B			B	
Queue Length 50th (ft)		68	0					84		52	18	
Queue Length 95th (ft)		116	19					126		110	35	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)			250							300		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 49
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 12.9
Intersection Capacity Utilization 54.4%

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

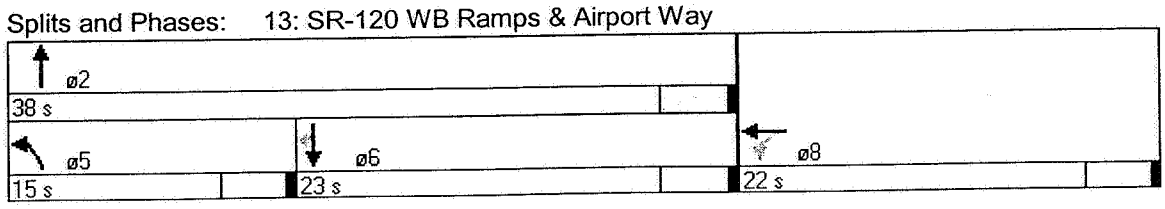


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1611	0	1736	3471	0	0	3471	1553
Flt Permitted					0.991		0.950					
Satd. Flow (perm)	0	0	0	0	1611	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					291							657
Volume (vph)	0	0	0	96	0	414	188	467	0	0	339	572
Lane Group Flow (vph)	0	0	0	0	542	0	232	577	0	0	390	657
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	22.0	22.0	0.0	15.0	38.0	0.0	0.0	23.0	23.0
Act Effct Green (s)					13.6		9.9	23.5			13.1	13.1
Actuated g/C Ratio					0.29		0.20	0.51			0.28	0.28
v/c Ratio					0.80		0.65	0.33			0.40	0.72
Uniform Delay, d1					6.6		18.6	6.0			13.4	0.0
Delay					11.7		26.5	6.5			15.3	2.1
LOS					B		C	A			B	A
Approach Delay					11.7			12.2			7.0	
Approach LOS					B			B			A	
Queue Length 50th (ft)					61		64	44			52	0
Queue Length 95th (ft)					#237		#145	65			85	53
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 46.4
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 9.9 Intersection LOS: A
Intersection Capacity Utilization 96.4% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: SR-120 WB Ramps & Airport Way

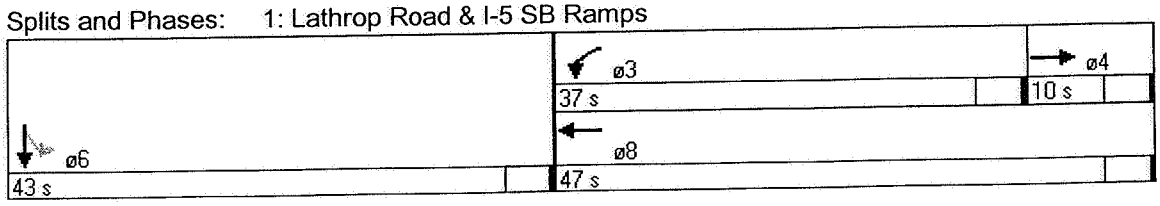


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Flt Permitted				0.950							0.953	
Satd. Flow (perm)	0	1820	0	1736	1827	0	0	0	0	0	1739	0
Satd. Flow (RTOR)		1										
Volume (vph)	0	82	2	525	40	0	0	0	0	624	2	3
Lane Group Flow (vph)	0	108	0	625	48	0	0	0	0	0	749	0
Turn Type				Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases										6		
Total Split (s)	0.0	10.0	0.0	37.0	47.0	0.0	0.0	0.0	0.0	43.0	43.0	0.0
Act Effct Green (s)		6.0		33.0	43.0						39.0	
Actuated g/C Ratio		0.07		0.37	0.48						0.43	
v/c Ratio		0.89		0.98	0.05						0.99	
Uniform Delay, d1		41.2		28.2	12.6						25.4	
Delay		85.0		54.1	12.8						51.6	
LOS		F		D	B						D	
Approach Delay		85.0			51.1						51.6	
Approach LOS		F			D						D	
Queue Length 50th (ft)		62		346	14						411	
Queue Length 95th (ft)		#128		#508	30						#588	
Internal Link Dist (ft)		168			1048			1177			1302	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)				150								
50th Bay Block Time %				39%								
95th Bay Block Time %				49%								
Queuing Penalty (veh)				21								

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 53.7 Intersection LOS: D
Intersection Capacity Utilization 89.5% ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Lathrop Road & I-5 SB Ramps

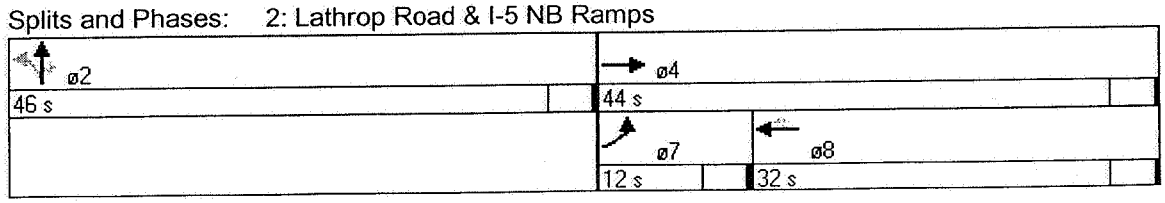


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Flt Permitted	0.950							0.950				
Satd. Flow (perm)	1736	1827	0	0	1827	1553	0	1736	1553	0	0	0
Satd. Flow (RTOR)						476			103			
Volume (vph)	46	656	0	0	382	395	183	0	524	0	0	0
Lane Group Flow (vph)	55	790	0	0	460	476	0	265	759	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Total Split (s)	12.0	44.0	0.0	0.0	32.0	32.0	46.0	46.0	46.0	0.0	0.0	0.0
Act Effct Green (s)	7.3	39.3			30.1	30.1		41.3	41.3			
Actuated g/C Ratio	0.08	0.44			0.34	0.34		0.47	0.47			
v/c Ratio	0.39	0.97			0.74	0.57		0.33	0.98			
Uniform Delay, d1	40.1	23.9			26.3	0.0		15.3	20.5			
Delay	39.4	43.6			31.9	2.6		15.4	40.1			
LOS	D	D			C	A		B	D			
Approach Delay		43.3			17.0			33.7				
Approach LOS		D			B			C				
Queue Length 50th (ft)	30	425			239	0		91	344			
Queue Length 95th (ft)	62	#588			320	45		105	310			
Internal Link Dist (ft)		1048			1951			1230			1364	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	150								250			
50th Bay Block Time %		38%							17%			
95th Bay Block Time %		44%							14%			
Queuing Penalty (veh)		22							40			

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 88.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 95.3% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Lathrop Road & I-5 NB Ramps

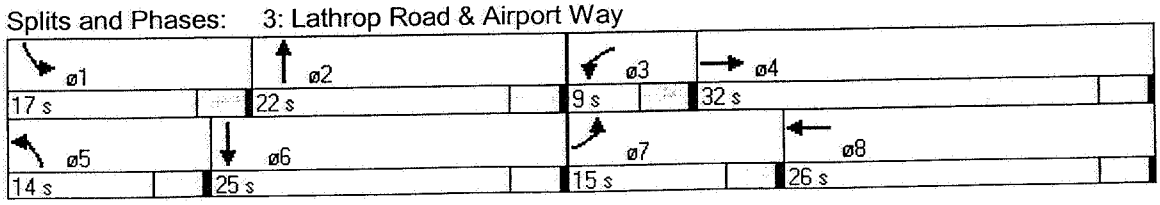


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3405	0	1736	3360	0	1736	4688	0	1736	4883	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3405	0	1736	3360	0	1736	4688	0	1736	4883	0
Satd. Flow (RTOR)		23			42			193			39	
Volume (vph)	79	658	98	74	444	119	89	247	163	198	335	56
Lane Group Flow (vph)	114	1096	0	83	633	0	109	500	0	239	471	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	15.0	32.0	0.0	9.0	26.0	0.0	14.0	22.0	0.0	17.0	25.0	0.0
Act Effct Green (s)	9.1	25.3		5.1	21.6		8.6	10.1		12.2	16.6	
Actuated g/C Ratio	0.13	0.38		0.07	0.32		0.13	0.15		0.18	0.25	
v/c Ratio	0.50	0.84		0.64	0.57		0.50	0.57		0.75	0.38	
Uniform Delay, d1	29.3	19.5		32.2	18.1		29.5	15.7		26.8	19.8	
Delay	30.0	22.4		51.0	19.4		30.6	16.9		37.6	22.3	
LOS	C	C		D	B		C	B		D	C	
Approach Delay		23.1			23.1			19.3			27.4	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	48	220		37	113		46	42		103	60	
Queue Length 95th (ft)	74	219		#110	180		88	64		#197	84	
Internal Link Dist (ft)		2710			3456			5271			1850	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	190			175			300			325		
50th Bay Block Time %		13%										
95th Bay Block Time %		12%			7%							
Queuing Penalty (veh)		14			2							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 66.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 23.4
Intersection LOS: C
Intersection Capacity Utilization 72.3%
ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Lathrop Road & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑					↰	↕	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1736	1555	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	3471	1553	1736	3471	0	0	0	0	1736	1555	0
Satd. Flow (RTOR)			614								81	
Volume (vph)	0	672	709	499	864	0	0	0	0	449	2	485
Lane Group Flow (vph)	0	810	854	632	1094	0	0	0	0	615	667	0
Turn Type			Perm	Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases			4									
Total Split (s)	0.0	25.0	25.0	35.0	60.0	0.0	0.0	0.0	0.0	40.0	40.0	0.0
Act Effct Green (s)		21.0	21.0	31.0	56.0					36.0	36.0	
Actuated g/C Ratio		0.21	0.21	0.31	0.56					0.36	0.36	
v/c Ratio		1.11	1.05	1.17	0.56					0.98	1.09	
Uniform Delay, d1		39.5	9.6	34.5	14.1					31.7	27.8	
Delay		91.9	49.3	108.3	14.4					56.4	78.4	
LOS		F	D	F	B					E	E	
Approach Delay		70.0			48.8						67.8	
Approach LOS		E			D						E	
Queue Length 50th (ft)		~312	~263	~484	222					384	~449	
Queue Length 95th (ft)		#380	#391	#568	230					#400	#457	
Internal Link Dist (ft)		108			1489			879			1490	
50th Up Block Time (%)		53%	36%									
95th Up Block Time (%)		59%	66%									
Turn Bay Length (ft)			250	190						300		
50th Bay Block Time %		19%	8%	47%	10%					19%	25%	
95th Bay Block Time %		33%	31%	53%	11%					20%	27%	
Queuing Penalty (veh)		222	79	273	65					130	160	

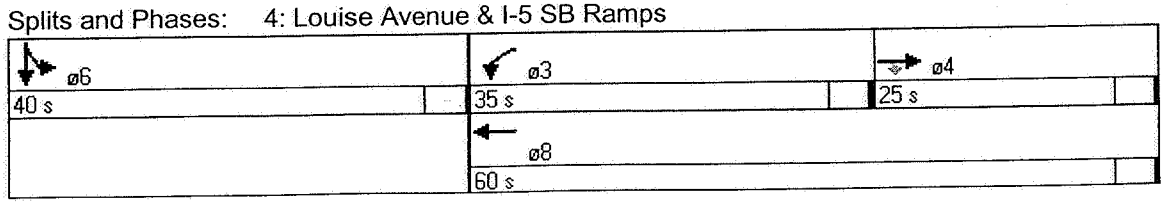
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 61.6 Intersection LOS: E
Intersection Capacity Utilization 139.2% ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Louise Avenue & I-5 SB Ramps

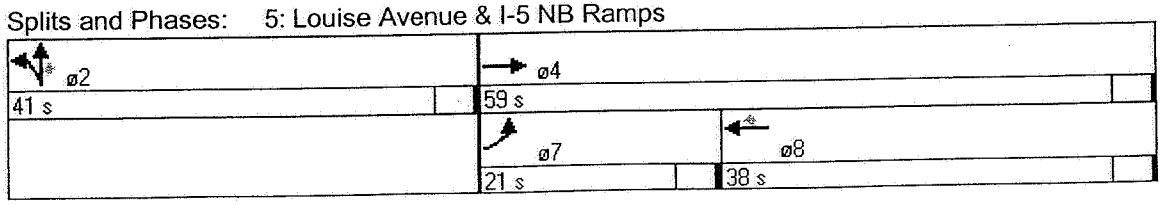


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	0	0	3471	1553	1736	1477	1475	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1736	3471	0	0	3471	1553	1736	1477	1475	0	0	0
Satd. Flow (RTOR)						761		50	50			
Volume (vph)	231	897	0	0	926	845	425	4	912	0	0	0
Lane Group Flow (vph)	325	1263	0	0	1218	1112	582	629	625	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Total Split (s)	21.0	59.0	0.0	0.0	38.0	38.0	41.0	41.0	41.0	0.0	0.0	0.0
Act Effct Green (s)	17.0	55.0			34.0	34.0	37.0	37.0	37.0			
Actuated g/C Ratio	0.17	0.55			0.34	0.34	0.37	0.37	0.37			
v/c Ratio	1.10	0.66			1.03	1.08	0.91	1.09	1.08			
Uniform Delay, d1	41.5	15.9			33.0	8.6	29.8	28.8	28.7			
Delay	103.2	16.2			60.9	54.2	40.8	79.5	78.2			
LOS	F	B			E	D	D	E	E			
Approach Delay		34.0			57.7			66.8				
Approach LOS		C			E			E				
Queue Length 50th (ft)	~237	283			~441	~450	347	~456	~451			
Queue Length 95th (ft)	#279	244			#399	#427	362	#472	#468			
Internal Link Dist (ft)		1489			4043			706			1484	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	500								460			
50th Bay Block Time %												
95th Bay Block Time %								4%	3%			
Queuing Penalty (veh)								11				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 54.1 Intersection LOS: D
Intersection Capacity Utilization 122.9% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Louise Avenue & I-5 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3339	0	1736	3454	0	1736	1694	0	1736	1730	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3339	0	1736	3454	0	1736	1694	0	1736	1730	0
Satd. Flow (RTOR)		48			4			42			19	
Volume (vph)	48	857	291	74	804	30	261	76	72	18	58	32
Lane Group Flow (vph)	61	1453	0	103	1159	0	421	239	0	40	200	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Total Split (s)	10.0	55.0	0.0	11.0	56.0	0.0	33.0	43.0	0.0	11.0	21.0	0.0
Act Effct Green (s)	6.0	51.0		7.0	54.1		29.1	42.1		6.7	15.6	
Actuated g/C Ratio	0.05	0.43		0.06	0.46		0.25	0.35		0.05	0.13	
v/c Ratio	0.70	0.99		1.01	0.73		0.99	0.38		0.43	0.82	
Uniform Delay, d1	57.9	33.3		57.0	27.8		46.1	24.2		57.7	45.1	
Delay	75.5	50.4		125.0	27.6		77.2	24.7		55.7	52.1	
LOS	E	D		F	C		E	C		E	D	
Approach Delay		51.5			35.5			58.2			52.7	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	47	~576		~83	394		~330	117		30	137	
Queue Length 95th (ft)	#96	547		#144	343		283	114		34	94	
Internal Link Dist (ft)		1680			3628			2251			2728	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	125			125			125			125		
50th Bay Block Time %		45%			39%		49%	2%			10%	
95th Bay Block Time %		44%		18%	36%		45%					
Queuing Penalty (veh)		27		51	38		111				2	

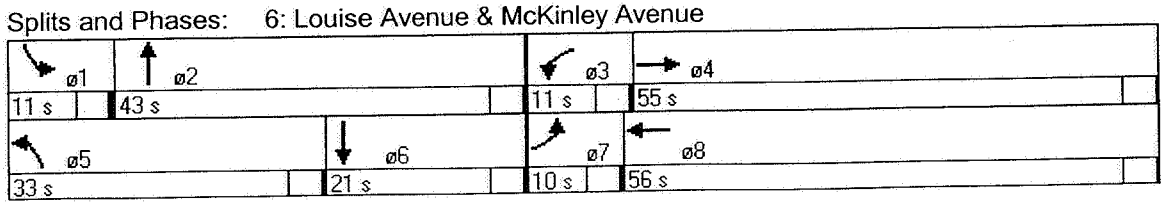
Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 47.3 — Intersection LOS: D
Intersection Capacity Utilization 95.2% — ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Louise Avenue & McKinley Avenue

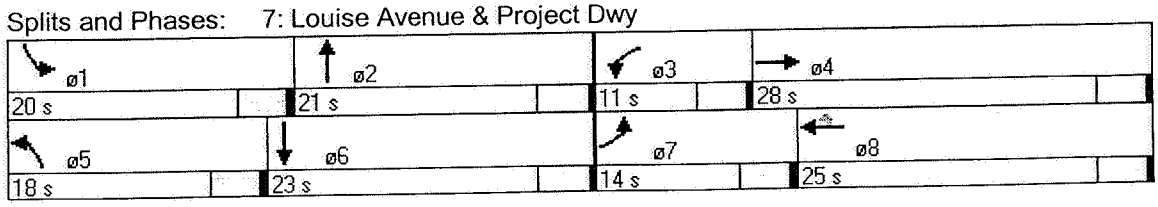


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1671	3145	0	1671	3343	1495	1671	1506	0	1671	1499	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1671	3145	0	1671	3343	1495	1671	1506	0	1671	1499	0
Satd. Flow (RTOR)		192				84		118			282	
Volume (vph)	95	507	330	86	510	77	207	5	109	245	5	299
Lane Group Flow (vph)	103	910	0	93	554	84	225	123	0	266	330	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Total Split (s)	14.0	28.0	0.0	11.0	25.0	25.0	18.0	21.0	0.0	20.0	23.0	0.0
Act Effct Green (s)	8.5	19.8		6.9	18.2	18.2	12.3	8.6		13.9	10.2	
Actuated g/C Ratio	0.13	0.31		0.11	0.29	0.29	0.19	0.14		0.22	0.16	
v/c Ratio	0.47	0.82		0.52	0.58	0.17	0.70	0.40		0.73	0.69	
Uniform Delay, d1	27.0	15.6		28.3	19.2	0.0	23.8	1.0		23.0	3.4	
Delay	30.1	19.0		38.7	21.3	5.9	33.8	7.1		32.5	6.6	
LOS	C	B		D	C	A	C	A		C	A	
Approach Delay		20.1			21.8			24.4			18.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	41	138		38	101	0	88	2		103	16	
Queue Length 95th (ft)	96	#279		#111	179	32	#214	41		#244	93	
Internal Link Dist (ft)		3628			1578			324			241	
50th Up Block Time (%)												
95th Up Block Time (%)										9%		
Turn Bay Length (ft)	400			150		150						
50th Bay Block Time %												
95th Bay Block Time %					15%							
Queuing Penalty (veh)					7							

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 63.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 78.1% ICU Level of Service C
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Louise Avenue & Project Dwy

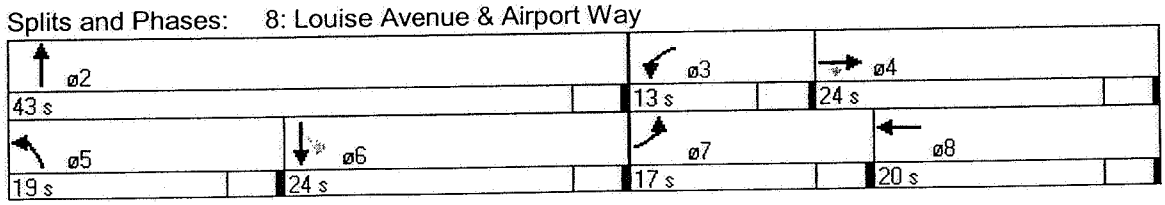


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3471	1553	1736	3402	0	1736	4693	0	1736	4808	0
Flt Permitted	0.950			0.950			0.950			0.395		
Satd. Flow (perm)	1736	3471	1553	1736	3402	0	1736	4693	0	722	4808	0
Satd. Flow (RTOR)			267		19			256			90	
Volume (vph)	168	471	222	76	404	63	185	320	210	99	264	84
Lane Group Flow (vph)	202	567	267	92	563	0	226	646	0	106	374	0
Turn Type	Prot		Perm	Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4							6		
Total Split (s)	17.0	24.0	24.0	13.0	20.0	0.0	19.0	43.0	0.0	24.0	24.0	0.0
Act Effct Green (s)	11.6	18.3	18.3	8.4	15.5		12.8	27.5		15.0	15.0	
Actuated g/C Ratio	0.17	0.28	0.28	0.13	0.24		0.19	0.43		0.23	0.23	
v/c Ratio	0.67	0.58	0.42	0.42	0.68		0.68	0.30		0.63	0.32	
Uniform Delay, d1	27.6	20.0	0.0	28.2	21.6		26.9	6.6		22.4	15.4	
Delay	35.4	23.7	3.9	32.9	28.9		32.0	6.9		31.2	17.8	
LOS	D	C	A	C	C		C	A		C	B	
Approach Delay		20.9			29.5			13.4			20.7	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	92	125	0	42	130		101	35		47	37	
Queue Length 95th (ft)	#166	169	42	82	176		161	46		#114	64	
Internal Link Dist (ft)		1578			3753			5148			5271	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	340		340	340			190			340		
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 64.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 20.6 Intersection LOS: C
Intersection Capacity Utilization 60.4% ICU Level of Service B
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Louise Avenue & Airport Way

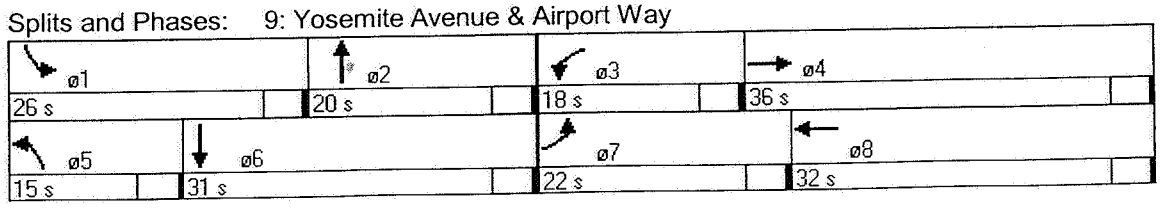


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1736	3357	0	1736	3235	0	1736	4988	1553	1736	4933	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3357	0	1736	3235	0	1736	4988	1553	1736	4933	0
Satd. Flow (RTOR)		38			209				282		13	
Volume (vph)	157	561	157	206	394	328	83	477	257	316	435	35
Lane Group Flow (vph)	249	1139	0	254	891	0	91	524	282	390	580	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Total Split (s)	22.0	36.0	0.0	18.0	32.0	0.0	15.0	20.0	20.0	26.0	31.0	0.0
Act Effct Green (s)	16.9	32.0		14.0	29.2		9.6	15.0	15.0	22.0	29.6	
Actuated g/C Ratio	0.17	0.32		0.14	0.29		0.09	0.15	0.15	0.22	0.30	
v/c Ratio	0.84	1.03		1.04	0.81		0.55	0.69	0.59	1.01	0.39	
Uniform Delay, d1	40.2	32.7		42.9	24.7		44.4	39.5	0.0	38.9	27.3	
Delay	48.4	65.3		103.5	27.5		43.1	39.9	5.0	83.6	28.0	
LOS	D	E		F	C		D	D	A	F	C	
Approach Delay		62.3			44.3			29.3			50.4	
Approach LOS		E			D			C			D	
Queue Length 50th (ft)	153	~404		~177	220		56	116	0	~266	108	
Queue Length 95th (ft)	158	276		#282	251		107	154	73	#378	127	
Internal Link Dist (ft)		2513			3144			4511			5148	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	100			60			100		100	250		
50th Bay Block Time %	33%	51%		58%	51%			10%		8%		
95th Bay Block Time %	34%	43%		71%	53%		11%	29%		35%		
Queuing Penalty (veh)	188	117		287	132		9	17		42		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 99
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 48.3 Intersection LOS: D
Intersection Capacity Utilization 91.7% ICU Level of Service E
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Yosemite Avenue & Airport Way



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1649	1652	1553	0	0	0	0	1675	0	0	1752	0
Flt Permitted	0.950	0.952									0.455	
Satd. Flow (perm)	1649	1652	1553	0	0	0	0	1675	0	0	831	0
Satd. Flow (RTOR)			404					228				
Volume (vph)	821	1	339	0	0	0	0	152	240	254	46	0
Lane Group Flow (vph)	489	489	404	0	0	0	0	426	0	0	536	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Total Split (s)	21.0	21.0	21.0	0.0	0.0	0.0	0.0	39.0	0.0	39.0	39.0	0.0
Act Effct Green (s)	17.0	17.0	17.0					35.0			35.0	
Actuated g/C Ratio	0.28	0.28	0.28					0.58			0.58	
v/c Ratio	1.05	1.04	0.55					0.40			1.11	
Uniform Delay, d1	21.5	21.5	0.0					2.8			12.5	
Delay	67.2	66.6	2.5					3.1			73.6	
LOS	E	E	A					A			E	
Approach Delay		48.0						3.1			73.6	
Approach LOS		D						A			E	
Queue Length 50th (ft)	~209	~209	0					26			~229	
Queue Length 95th (ft)	#340	#338	43					59			139	
Internal Link Dist (ft)		812			814			181			330	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

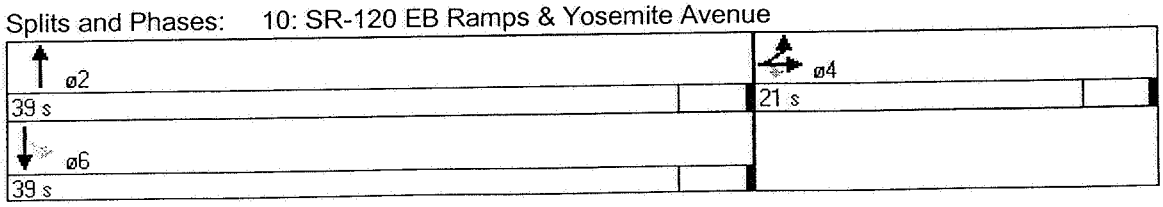
Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 91.2% ICU Level of Service E

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: SR-120 EB Ramps & Yosemite Avenue

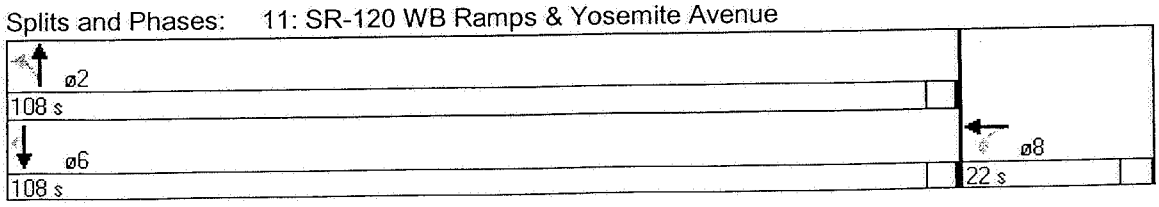


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1692	0	0	1803	0	0	1827	1553
Flt Permitted					0.967			0.844				
Satd. Flow (perm)	0	0	0	0	1692	0	0	1542	0	0	1827	1553
Satd. Flow (RTOR)					15							983
Volume (vph)	0	0	0	137	0	63	286	763	0	0	166	865
Lane Group Flow (vph)	0	0	0	0	290	0	0	1362	0	0	189	983
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Total Split (s)	0.0	0.0	0.0	22.0	22.0	0.0	108.0	108.0	0.0	0.0	108.0	108.0
Act Effct Green (s)					17.9			104.0			104.0	104.0
Actuated g/C Ratio					0.14			0.80			0.80	0.80
v/c Ratio					1.17			1.10			0.13	0.68
Uniform Delay, d1					52.6			13.0			2.9	0.0
Delay					132.5			66.7			2.9	0.2
LOS					F			E			A	A
Approach Delay					132.5			66.7			0.7	
Approach LOS					F			E			A	
Queue Length 50th (ft)					~281			~1305			29	0
Queue Length 95th (ft)					#302			#1186			44	16
Internal Link Dist (ft)		594			1090			330			1416	
50th Up Block Time (%)								19%				
95th Up Block Time (%)								17%				
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								244				

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 46.1 Intersection LOS: D
Intersection Capacity Utilization 160.1% ICU Level of Service H
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: SR-120 WB Ramps & Yosemite Avenue

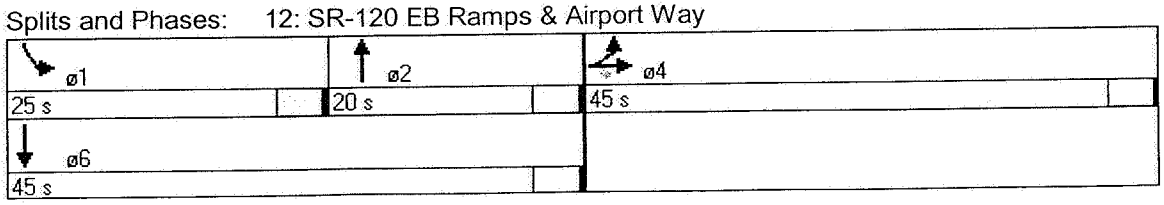


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	3374	0	1736	3471	0
Satd. Flow (RTOR)			268					27				
Volume (vph)	592	0	207	0	0	0	0	381	89	328	418	0
Lane Group Flow (vph)	0	779	272	0	0	0	0	587	0	386	492	0
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Total Split (s)	45.0	45.0	45.0	0.0	0.0	0.0	0.0	20.0	0.0	25.0	45.0	0.0
Act Effct Green (s)		41.0	41.0					16.0		21.0	41.0	
Actuated g/C Ratio		0.46	0.46					0.18		0.23	0.46	
v/c Ratio		0.98	0.32					0.94		0.95	0.31	
Uniform Delay, d1		24.2	0.2					34.8		34.0	15.5	
Delay		47.9	2.2					52.8		61.2	15.7	
LOS		D	A					D		E	B	
Approach Delay		36.1						52.8			35.7	
Approach LOS		D						D			D	
Queue Length 50th (ft)		422	1					167		217	90	
Queue Length 95th (ft)		#498	22					#220		#358	117	
Internal Link Dist (ft)		1134			1263			1206			1435	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)			250							300		
50th Bay Block Time %		26%										
95th Bay Block Time %		29%								22%		
Queuing Penalty (veh)		75								27		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 39.8 Intersection LOS: D
Intersection Capacity Utilization 91.2% ICU Level of Service E
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: SR-120 EB Ramps & Airport Way

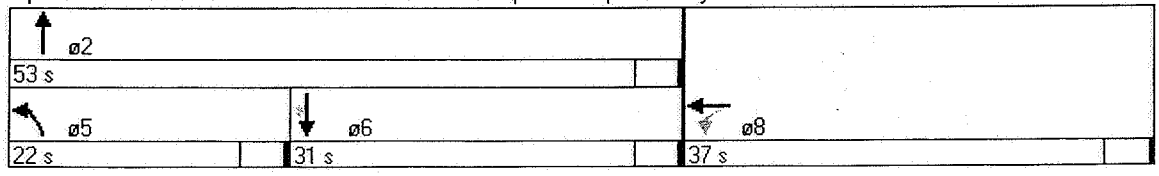


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	0	0	1643	0	1736	3471	0	0	3471	1553
Flt Permitted					0.981		0.950					
Satd. Flow (perm)	0	0	0	0	1643	0	1736	3471	0	0	3471	1553
Satd. Flow (RTOR)					94							295
Volume (vph)	0	0	0	142	0	225	117	814	0	0	632	257
Lane Group Flow (vph)	0	0	0	0	390	0	144	1005	0	0	726	295
Turn Type				Perm			Prot					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8								6
Total Split (s)	0.0	0.0	0.0	37.0	37.0	0.0	22.0	53.0	0.0	0.0	31.0	31.0
Act Effct Green (s)					16.0		10.3	32.4			21.0	21.0
Actuated g/C Ratio					0.28		0.17	0.56			0.37	0.37
v/c Ratio					0.74		0.48	0.51			0.57	0.39
Uniform Delay, d1					13.9		22.7	7.1			14.6	0.0
Delay					15.4		25.9	8.5			18.3	3.1
LOS					B		C	A			B	A
Approach Delay					15.4			10.7			13.9	
Approach LOS					B			B			B	
Queue Length 50th (ft)					86		43	90			104	0
Queue Length 95th (ft)					225		111	186			230	46
Internal Link Dist (ft)		1426			1407			1435			4511	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)							300					
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 57.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 12.7
Intersection LOS: B
Intersection Capacity Utilization 61.2%
ICU Level of Service B

Splits and Phases: 13: SR-120 WB Ramps & Airport Way



APPENDIX C:
AIR QUALITY ASSESSMENT

AIR QUALITY ANALYSIS

ASSIEH INDUSTRIAL DEVELOPMENT

May 27, 2004

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ASSIEH INDUSTRIAL DEVELOPMENT
AIR QUALITY IMPACT ASSESSMENT

INTRODUCTION

This section describes the proposed Assieh Industrial Development (Project) impact on local and regional air quality including the identification of air pollutant standards, current air quality conditions, air quality impacts and associated mitigation measures. Air quality is described in relation to the ambient air quality standards for ozone and particulate matter less than 10 microns in size (PM_{10}). In addition, an analysis of carbon monoxide (CO) pollutant impacts along a representative number of street and road segments adjacent to the Project has also been prepared.

EXISTING ENVIRONMENTAL SETTING

Project Setting

The Project lies within the central portion of the San Joaquin Valley Air Basin (SJVAB) in the City of Manteca in San Joaquin County. The Project site encompasses approximately 79.91 acres and includes the development of land uses referenced in Table 1.

TABLE 1
ASSIEH INDUSTRIAL PARK
PROPOSED LAND USES

TYPE OF USE	Acres/ Units
Warehouse	1,798 x 1,000 sq ft

Regional Setting

The Sierra Nevada Mountain Range surrounds San Joaquin County to the east and the Coastal Range toward the west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in San Joaquin

County is classified as Mediterranean, with moist cool winters and dry warm summers.

Light winds and atmospheric stability provides frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations. The prevailing winds during the summer are from the north and west. These winds, known as "up-valley winds," originate with coastal breezes that enter the Valley through breaks in the coastal ranges, particularly through the Carquinez Straits in the San Francisco Bay Area.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. San Joaquin County and the City of Manteca are occasionally influenced by precursors emitted in the San Francisco Bay Area; however, sources within the Valley are considered to be a greater influence under most conditions. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, CO, for example, may form high concentrations when wind speed is low. During the winter, Manteca experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in San Joaquin County are conducive to the containment of air pollutants.

Air Pollution Sources and Current Air Quality

The San Joaquin Valley Air Pollution Control District (District) is the agency empowered to regulate air pollutant emissions. The District regulates air quality through its permit authority for most types of stationary emission sources and through its planning and review activities for other sources.

Federal and California ambient air quality standards have been established for the following five critical pollutants: nitrogen dioxide, sulfur dioxide, particulate, carbon monoxide, and ozone. Ozone pollution is the most conspicuous type of air pollution,

and is often characterized by visibility-reducing haze, eye irritation, and high oxidant concentrations (i.e., "smog").

In general, there are four major sources of air pollutant emissions in the SJVAB including motor vehicles, industrial plants, agricultural activities, and construction activities. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). Finally, urban areas upwind from San Joaquin County can cause or generate transported emissions from all four-pollutant sources into the Manteca area.

The principal factors that affect air quality in and around San Joaquin County are: (a) the *sink effect*, climatic subsidence and temperature inversions and low wind speeds; (b) *automobile and truck travel*; and (c) increases in mobile and stationary pollutants generated by *local urban growth.*

Applicable federal and State standards for each regulated pollution category compared to monitoring data for the closest monitoring site is provided in Table 2. The applicable standard for each pollution category, for environmental documentation purposes (i.e., identification of significant impacts), is whichever are the more stringent of the federal and State standards. Based upon information provided in Table 2, the City of Manteca and San Joaquin County are in non-attainment for ozone and PM_{10}.

TABLE 2
FEDERAL AND STATE STANDARDS FOR NONATTAINMENT POLLUTANTS IN THE CITY OF MANTECA

Pollutant	Averaging Time	Applicable Standard	Monitoring Station	
			First High	Second High
Ozone *	Max. Hourly High	0.09 ppm State 0.12 ppm Federal	.108 ppm	.106 ppm
Carbon Monoxide (CO)	Max. Eight-hour High Standard Violation	9.0 ppm State/Federal	3.21 ppm	3.16 ppm
	Max. One-hour High Standard Violation	20.0 ppm State 35.0 ppm Federal	4.3 ppm	4.0 ppm
Particulate (PM_{10})	Geometric Mean 24 Hour High	30.0 g/m^3 State 50.0 g/m^3 State	31.0 g/m^3 87.0 g/m^3	30.0 g/m^3 78.0 g/m^3

SOURCE: California Air Resources Board, 2002, Air Quality Data Summary
*NOTE: The monitoring site for ozone is located in the City of Stockton, which is in San Joaquin County.
First and second highest annual data used. All other data was taken from the monitoring site at Stockton-Hazelton Street in Stockton.
CO monitoring site is in San Joaquin County.

Ozone Emissions

The most severe air quality problem in the SJVAB is the high level of ozone. Ozone can cause eye irritation and impair respiratory functions. Accumulations of ozone depend heavily on weather patterns and thus vary substantially from year to year. Ozone is produced in the atmosphere through photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides (NO_X). Numerous small sources throughout the region are responsible for most of the ROG and NO_X emissions in the Basin. [The Federal 8- hour ozone standard has been exceeded an average of sixty-six (66) times per year over the past three years in San Joaquin County.]

Suspended PM_{10} Emissions

PM_{10} refers to particulate matter less than 10 microns in diameter - those that can be inhaled and cause health effects. Common sources of particulate include demolition, construction activity, agricultural operations, traffic and other localized sources such as from fireplaces. Very small particulate of certain substances can cause direct lung damage, or can contain absorbed gases that may be harmful when inhaled. Particulate can also damage materials and reduce visibility. Twenty-four hour PM_{10} standards are exceeded occasionally at the Stockton monitoring station (the standard was violated on 11 days in the past three years). The annual geometric mean has also been exceeded during that same time frame.

Carbon Monoxide (CO)

Because CO is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. The California Air Resources Board (CARB) found CO standards in San Joaquin County in attainment of federal and State standards on March 31, 1998.

Nitrogen Dioxide (NO_2)

The major sources of nitrogen dioxide (NO_2), essential to the formation of photochemical smog, are vehicular, residential, and industrial fuel combustion. NO_2 is the "whiskey brown" colored gas evident during periods of heavy air pollution. NO_2 increases respiratory disease and irritation and may reduce resistance to certain infections. The standards for NO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials and reduce visibility. The standards for SO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Lead (Pb)

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Lead can cause blood effects such as anemia and the inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline continues to increase. The standards for lead are being met in the SJVAB and the District does not expect that the standards will be exceeded in the future.

Air Quality Standards

The federal Clean Air Bill, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. Other federal Clean Air Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the California Clean Air Act (CCAA, State 1988 Statutes, Chapter 1568) that established more stringent State ambient air quality standards, and set forth a program for their achievement. State air basins are established by the CARB. CARB implements State ambient air quality standards, as required in the State CCAA, and cooperate with the federal government in implementing pertinent sections of the federal Clean Air Bill, Amendments. Further, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the State.

Fresno County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Exhibit 1. In addition to Fresno County, the SJVAB includes San Joaquin, Kern, Kings, Madera, Merced, Stanislaus, and Tulare Counties.

The District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within San Joaquin County and

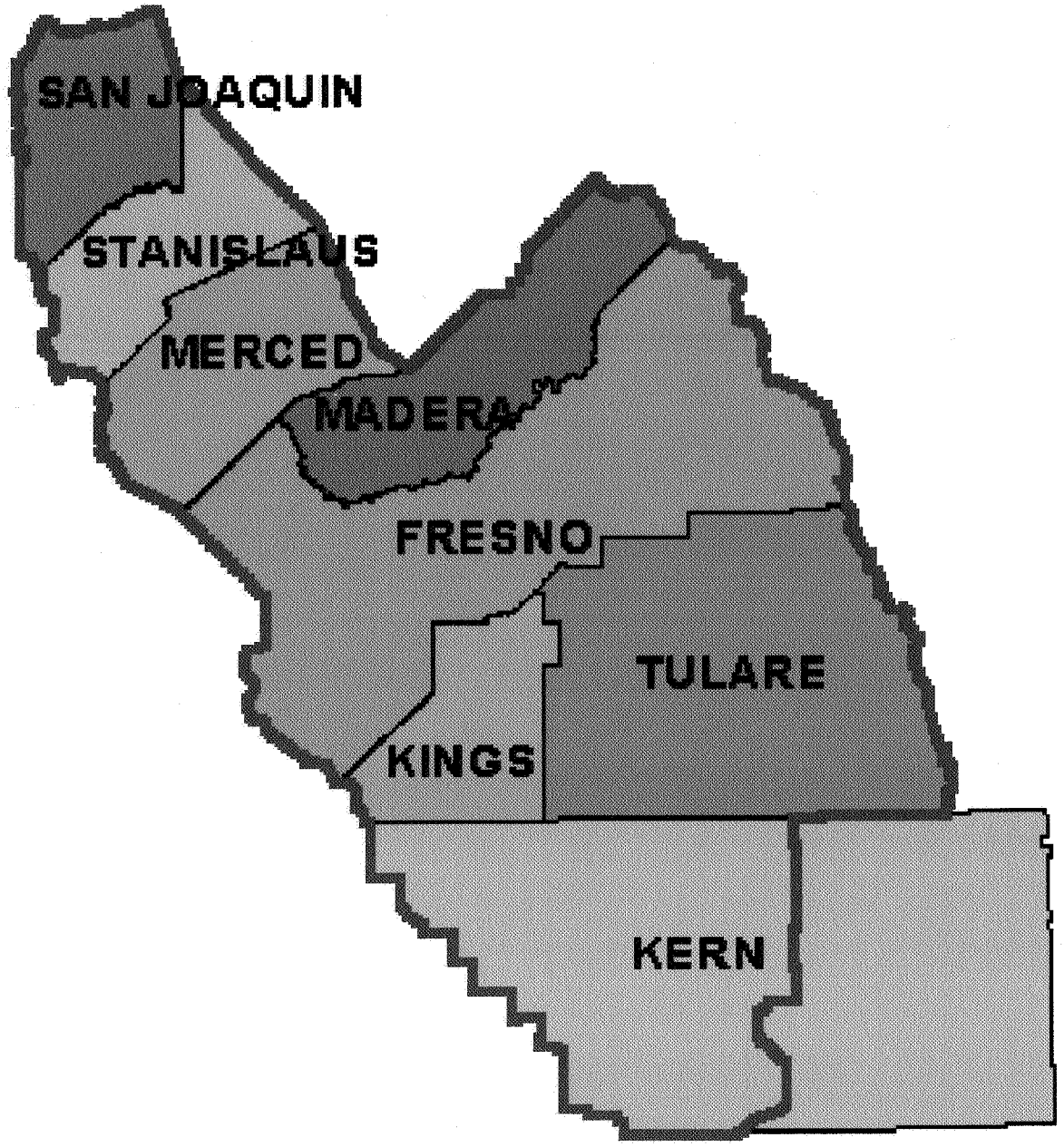
throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The U.S. Environmental Protection Agency (EPA) is responsible for enforcement of the provisions of the federal Clean Air Bill, Amendments. Based on the provisions contained in the 1990 amendment, EPA designated the entire San Joaquin Valley as non-attainment for two pollutants: ozone and particle matter less than 10 microns in size or PM_{10}. More recently, on October 23,2001, the EPA reclassified the San Joaquin Valley ozone nonattainment area from its previous serious status to "severe" because the Valley failed to attain the health-based, 1-hour national Ambient Air Quality Standard for ozone by the Clean Air Act deadline of November 15,1999. Since Manteca is located within the San Joaquin Valley, it is considered to be in non-attainment of ozone and PM_{10} standards.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

Exhibit 1

San Joaquin Valley Air Basin



For regional pollutants such as ozone and PM_{10}, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. The District has established interim thresholds for certain pollutants (reference Table 3). For localized pollutants, such as CO, an increase in concentrations that would result in a predicted violation of the most stringent State or federal standard [20.0 parts per million (PPM) for 1-hour or 9.0 PPM for 8 hours] is considered to represent a significant impact. This assessment provides three types of Project area pollutant impact analysis: (1) regional mobile and area source impacts, (2) street and highway traffic impacts; and (3) construction impacts.

TABLE 3
SJVAPCD INTERIM EMISSION THRESHOLDS

Non-Attainment Pollutant	Minimum Thresholds Tons/Year
NO_X	10
ROG	10
PM_{10}	15

Source: SJVAPCD

Existing Transportation Control Measures (TCMs) & Air Quality Mitigation Programs/ Policies

Until the passage of the CCAA, the primary role of air districts throughout California was control of stationary sources of pollution such as industrial processes and equipment (stationary sources). With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and are encouraged to adopt indirect source control programs to reduce area source emissions. These mandates created the need for the District to work closely with cities, counties, and with regional transportation planning agencies (RTPAs) to develop new programs.

SJVAPCD (District) Air Quality Attainment Plan (AQAP)

The SJVAPCD AQAP - the District developed TCMs with assistance from the RTPAs. The TCMs fall into several categories including mobility improvements, trip reduction programs, and user incentives among others.

This joint effort culminated in the development and subsequent adoption of eleven

TCMs listed below.

1. Alternative Work Schedules
2. Bicycling
3. Fleet Operators Alternate Fuels Program
4. Park-and Ride Lots
5. Parking Management
6. Passenger Rail
7. Public Transit
8. Rideshare Program
9. Telecommunications
10. Traffic Flow Improvements
11. Trip Reduction Programs

San Joaquin Valley TCM Program

The District, in association with the Valley RTPAs, prepared Phase I of the Valley-wide TCM Program. The District adopted the Program in March 1994. The Program is intended to address CARB comments provided to the District during review of the adopted AQAP TCMs and to further describe how the TCMs will be implemented, monitored, and enforced. The TCM Program also identifies which TCMs are applicable to specific types of jurisdictions within the Valley.

Rate of Progress Plans

Various TCMs that have been incorporated into the Rate of Progress (ROP) Plans, or have been identified by the regional transportation planning agency (San Joaquin Council of Governments) to provide for positive air quality conformity findings associated with the 2001 San Joaquin Council of Governments' Regional Transportation Plan (RTP) and the Federal Transportation Improvement Program (FTIP).

Standards of Significance

According to the California Environmental Quality Act (CEQA), a project will normally have a significant adverse impact on air quality if it will "violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations."

For regional pollutants such as ozone, PM_{10}, sulfur dioxide or nitrogen dioxide, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. For non-attainment pollutants (ozone precursors or PM_{10}), any net increase in regional emissions is considered significant.

For localized pollutants, such as carbon monoxide, an increase in concentrations that would result in a predicted violation of the most stringent State or federal standard (20.0 PPM for 1-hour or 9.0 PPM for 8-hours) is considered to represent a significant impact. This assessment provides for two types of localized area pollutant impact analysis; street and highway improvements and traffic volumes and construction impacts.

For purposes of this environmental assessment, an impact is considered significant if one or more of the following conditions occur from implementation of the Project:

- regional air quality emission exceed standards;
- local air quality emission exceed standards;
- significant construction related air quality impacts occur; and/or
- the creation of objectionable odors.

AIR QUALITY IMPACTS

This section of the Air Quality Assessment addresses and analyzes the regional or area-wide and the localized air quality impacts associated with the Project.

Regional and Area Source Air Quality Impacts of the Future Project Scenario

The following regional air quality impact assessment has been developed to identify the amount of pollutant increases from mobile and area sources associated with the No

Project and Project Alternatives. These analyses provide for estimated emissions (ROG, NO_X and PM_{10}).

The Air Quality Impact Analysis process associated with the No Project and Project Alternative included the following steps:

- STEP 1 Determined regional mobile source impacts considering trip rates, acres, total trips, trip types and vehicle fleet mix related to the No Project Alternative uses for the year 2025 (reference Appendix A). Programs or data sources (URBEMIS/EMFAC) contained in Air Quality Analysis Tools (AQAT) software were used to conduct this analysis.

- STEP 2 Determined area source operations emissions considering the South Coast Air Quality Management District (SCAQMD) methodology for specific uses related to the No-Project Alternative for the year 2025 (reference Appendix A).

- No Project Regional and Area Source Operations Impact Assessment

The Existing Project Site currently is vacant land, therefore the No-Project Alternative does not have area source operation impacts on regional air quality.

- Project Regional and Area Source Operations Impact Assessment

The Air Quality Impact Analysis process associated with the Project Alternative included the same steps as applied for the No Project Alternative.

Results of the 2025 regional mobile source analysis and the area source operations analysis for the Project are reflected in Table 4 and worksheets are provided in Appendix A. Specifically, year 2025 emissions projection results indicate that emissions associated with the Project will not exceed District Interim Emissions Thresholds. The results indicate that the Project will not have significant effects on regional air quality.

TABLE 4

Regional Mobile Source Emissions (lbs. Per day) *1				
Land Use	**Units/SQFT.**	**ROG**	**NO_X**	**PM_{10}**
Warehouse	1,738.83 x 10^3 sq. ft	27.87	23.55	6.01
Total Regional Mobile Source Emissions				
Area Source Operations Emissions (lbs. per day)*2				
Land Use	**Units/SQFT.**	**ROG**	**NO_X**	**PM_{10}**
Warehouse	1,738.83 x 10^3 sq. ft	0.16	0.81	0.00
Total Area Source Emissions				
Total Emissions (lbs. Per day)				
Land Use	**Units/SQFT.**	**ROG**	**NO_X**	**PM_{10}**
Warehouse	1,738.83 x 10^3 sq. ft	28.03	24.36	6.01
TOTAL EMISSIONS				
Total Emissions (tons per year)				
Land Use	**Units/SQFT.**	**ROG**	**NO_X**	**PM_{10}**
Warehouse	1,738.83 x 10^3 sq. ft	4.99	5.20	1.10
TOTAL EMISSIONS		**4.99**	**5.2**	**1.1**

Methodology for operating emissions was provided from SCAQMD CEQA Air Quality Handbook.

*1 Mobile Sources Emissions calculated using URBIMIS 2001 model.

*2 Area Source Emissions include Stationary Sources.

- Quantitative Analysis

The analysis of the Project represents the worst case scenario. This scenario does not exceed the District Interim Emission Thresholds.

Localized (Circulation and Construction) Air Quality Impacts

Circulation Impacts

Based on both the existing and future with project conditions reported in the Transportation Analysis prepared by Kimley Horn Associates, the No Project and Project Alternatives are expected to generate automobile traffic that will affect air quality along adjacent streets and highways. Adjacent to such roadways, the measurable pollutant most significant is CO.

A carbon monoxide analysis was performed to determine if increased traffic generated by the project would cause conditions to exceed the State or federal standard CO concentrations of 20 parts per million (PPM) for 1 hour (the federal maximum standard of 35 PPM is far less stringent than the State's maximum standard of 20 PPM). Further, emissions generated from development projects must also not exceed the minimum 8 hour standard of 9 PPM. To analyze the No Project's and Project's "worst case" CO concentrations along such roadways, the analysis methodology considered the highest second annual maximum CO concentration reported in 2002, using approximately 4.03 PPM as an estimate of the background concentration for the 1 hour standard and 3.21 PPM as an estimate of the background concentration for the 8 hour standard (source: CARB annual publications). Seventy-five degrees (75°) Fahrenheit was used as the mean summer temperature in Manteca. The emissions rates used in this analysis were obtained from the EMFAC 2001 model contained in AQAT.

Four (4) representative roadway segments and six (6) receptor sites were chosen to conduct the analysis. The CALINE4 model was run using "worst case" conditions for existing and future conditions with the No- Project and Project Alternatives.

- **Existing Analysis**

To assess the impacts of increased traffic generated by this project and other planned developments, an analysis of existing peak hour volumes was developed. The trip assignments for existing and existing plus project were used as reported in the December 2003, Traffic Impact Analysis prepared by Kimley-Horn Associates.

Results of the Existing Without Project and Existing With Project CO concentration analysis during the AM and PM Peak Hours are contained in Tables 5 through 8. Appendix B contains analysis details and results. Based upon the results, CO concentration levels will meet federal and State air quality standards for the No Project and Project Alternatives.

TABLE 5
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS AM
Existing without Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.2	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	4.9/4.4	3.7/3.4	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	4.25	3.3	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

TABLE 6
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS PM
Existing without Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	4.1	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	4.0	3.2	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	4.7/4.3	3.6/3.3	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	4.18	3.5	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

TABLE 7
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS AM
Existing with Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.2	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	4.9/4.4	3.8/3.5	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	4.3	3.4	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

TABLE 8
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS PM
Existing with Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	6.9/7.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	6.5	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	5.1	3.3	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	5.9/5.1	4.1/3.3	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	6.1	3.4	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

- **Year 2025**

To assess the cumulative impacts of increased traffic generated by other planned developments, an analysis of future year 2025 peak hour volumes was developed. Again the year 2025 trip assignments were used as reported in the December 2003, Traffic Impact Analysis prepared by Kimley-Horn Associates.

Results of the year 2025 No Project and Project CO concentration analysis during the AM and PM Peak Hours are contained in Tables 9 through 12. Appendix B contains analysis details and results. Based upon the results, CO concentration levels will meet federal and State air quality standards for the No Project and Project Alternatives.

TABLE 9
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS AM
Future No-Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.2	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	4.9/4.4	3.8/3.4	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	4.25	3.35	NO/NO	NO/NO

Source: VRPA Technologies, June 2003.

TABLE 10
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS PM
Future No Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 8.01	**R1/R2** 5.53	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	4.0/4.1	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	4.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	4.1	3.3	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	5.1/4.5	4.1/3.6	NO/NO	NO/NO
AVERAGES/SUMRY		35.0	9.0	20.0	9.0	4.3	3.45	NO/NO	NO/NO

Source: VRPA Technologies, June 2003

TABLE 11
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS AM
Future Plus Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	6.6/6.7	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	6.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	5.0	3.3	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	5.6/5.0	4.1/3.6	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	5.8	3.45	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

TABLE 12
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS PM
Future Plus Project (1 hour and 8 hour CO concentration)

RECEPTORS		AIR QUALITY STANDARDS				AIR QUALITY LEVELS FOR EACH RECEPTOR (R1 and R2)		ARE STANDARDS EXCEEDED (YES/NO)?	
		FEDERAL		STATE					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	**R1/R2** 4.03	**R1/R2** 3.21	NO/NO	NO/NO
1	Louise Ave – (McKinley/Airport Way)	35.0	9.0	20.0	9.0	8.2/8.5	3.2/3.3	NO/NO	NO/NO
2	Louise Ave – (East of Airport Way)	35.0	9.0	20.0	9.0	7.0	3.2	NO/NO	NO/NO
3	Airport Way – (North of Louise)	35.0	9.0	20.0	9.0	5.3	3.3	NO/NO	NO/NO
4	Airport Way – (South of Louise)	35.0	9.0	20.0	9.0	6.4/5.4	4.3/3.7	NO/NO	NO/NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	6.8	3.5	NO/NO	NO/NO

Source: VRPA Technologies, December 2003.

Construction Impacts

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period. Further, asphalt paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone.

PM10 emissions can result from construction activities of the project. The SJVAPCD requires implementation of effective and comprehensive control measures, rather than a detailed quantification of emissions. The SJVAPCD has determined that compliance with Regulation VIII for all sites and other control measures will constitute sufficient mitigation to reduce PM10 impacts to a level considered less than significant.

MITIGATION MEASURES

The following mitigation measures are designed to minimize localized fugitive dust during grading and construction activities of the Project:

M _.1 All active portions of construction sites, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used.

M__.2 All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour.

M__.3 All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.

M__.4 The area disturbed by clearing, earth moving, or excavation activities shall

be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass is evident.

M__.5 Construction site vehicle speeds shall be limited to 15 miles per hour.

M__.6 If used, petroleum-based dust palliatives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials.

M__.7 Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated from construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping.

M__.8 All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications.

M__.9 During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time.

M__.10 When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines.

M__.11 Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways.

The following applicable mitigation measures are designed to minimize the area and mobile source emissions associated with the Project:

M__.12 The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions.

M__.14 Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits.

M__.15 Implementation of planned street and highway, transit, and bikeway improvements (as may be specified in the Transportation Impact Assessment) adjacent to the Project site necessary to relieve congestion and reduce idling.

M__.16 Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all commercial/residential developments.

M__.18 Use of HVAC equipment with a SEER of 12 or greater.

M__.19 Provide pedestrian/transit oriented project design.

M__.21 Commit to on-site improvements; bikeways, transit infrastructure, pedestrian enhancements.

M__.22 Contribute towards TCM implementation programs.

CUMULATIVE AIR QUALITY IMPACTS

Level of Significance Following Mitigation

- This analysis does not identify any potentially significant impacts to air quality that could result from implementation of the Project (Area Source and Mobile Emissions). This AQIA contains adequate measures that may mitigate Project specific impacts to less than significant levels. Because the project is located in a non-attainment area for certain pollutants, VRPA Technologies recommends mitigation measures be incorporated in to the project in order to minimize the area and mobile source emissions associated with the Project:

APPENDIX A

URBEMIS 2002 For Windows 7.4.2

File Name: C:\Documents and Settings\Owner\My Documents\03-033 Assieh Industrial Park\New assieh.ur
Project Name: Assieh Industrial Development
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	0.08	0.01	0.58	0.00	0.00
TOTALS (lbs/day, mitigated)	0.08	0.01	0.58	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	18.27	13.87	146.04	0.35	3.15
TOTALS (lbs/day, mitigated)	18.27	13.87	146.04	0.35	3.15

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	18.35	13.88	146.62	0.35	3.15
TOTALS (lbs/day, mitigated)	18.35	13.88	146.62	0.35	3.15

APPENDIX B

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Existing Plus Project AM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

VD= .0 CM/S Z0= 100. CM ALT= 0. (M)
VS= .0 CM/S

II. METEOROLOGICAL CONDITIONS

RUN	U (M/S)	BRG (DEG)	CLASS	AMB (PPM)	MIXH (M)	SIGTH (DEG)	TEMP (C)
1. Hour 1	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
2. Hour 2	1.0	0.	7 (G)	3.2	1000.	17.00	15.0
3. Hour 3	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
4. Hour 4	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
5. Hour 5	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
6. Hour 6	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
7. Hour 7	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
8. Hour 8	1.0	0.	7 (G)	3.2	1000.	17.50	15.0

III. LINK GEOMETRY

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	H (M)	W (M)
A. Link A	0	0	-804	0	AG	.0	28.0
B. Link B	0	0	804	0	AG	.0	28.0
C. Link C	0	0	0	804	AG	.0	28.0
D. Link D	0	0	0	-804	AG	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: No Project AM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES

RUN		LINK A	LINK B	LINK C	LINK D
1	VPH	1053	895	809	1281
	EF	30.	30.	30.	30.
2	VPH	900	800	700	1000
	EF	30.	30.	30.	30.
3	VPH	800	700	600	900
	EF	30.	30.	30.	30.
4	VPH	700	600	500	800
	EF	30.	30.	30.	30.
5	VPH	600	500	400	700
	EF	30.	30.	30.	30.
6	VPH	500	400	300	600
	EF	30.	30.	30.	30.
7	VPH	400	300	200	500
	EF	30.	30.	30.	30.
8	VPH	300	200	100	400
	EF	30.	30.	30.	30.

V. RECEPTOR LOCATIONS AND MULTI-RUN AVERAGE CONCENTRATIONS

RECEPTOR	COORDINATES (M) X	Y	Z	AVG (PPM)
1. Recpt 1	-800	13	1.8	3.2
2. Recpt 2	-600	11	1.8	3.3
3. Recpt 3	-30	-100	1.8	3.8
4. Recpt 4	200	17	1.8	3.2
5. Recpt 5	76	-400	1.8	3.5
6. Recpt 6	100	200	1.8	3.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: With Project pm 2003
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

VD= .0 CM/S Z0= 100. CM ALT= 0. (M)
VS= .0 CM/S

II. METEOROLOGICAL CONDITIONS

RUN	U (M/S)	BRG (DEG)	CLASS	AMB (PPM)	MIXH (M)	SIGTH (DEG)	TEMP (C)
1. Hour 1	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
2. Hour 2	1.0	0.	7 (G)	3.2	1000.	17.00	15.0
3. Hour 3	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
4. Hour 4	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
5. Hour 5	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
6. Hour 6	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
7. Hour 7	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
8. Hour 8	1.0	0.	7 (G)	3.2	1000.	17.50	15.0

III. LINK GEOMETRY

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	H (M)	W (M)
A. Link A	0	0	-804	0	AG	.0	28.0
B. Link B	0	0	804	0	AG	.0	28.0
C. Link C	0	0	0	804	AG	.0	28.0
D. Link D	0	0	0	-804	AG	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: With Project pm 2003
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES

RUN		LINK A	LINK B	LINK C	LINK D
1	VPH	1240	1231	1203	1738
	EF	30.	30.	30.	30.
2	VPH	1050	1050	1050	1500
	EF	30.	30.	30.	30.
3	VPH	950	950	950	1350
	EF	30.	30.	30.	30.
4	VPH	850	850	850	1100
	EF	30.	30.	30.	30.
5	VPH	700	700	700	950
	EF	30.	30.	30.	30.
6	VPH	550	550	550	800
	EF	30.	30.	30.	30.
7	VPH	400	400	400	650
	EF	30.	30.	30.	30.
8	VPH	250	250	250	500
	EF	30.	30.	30.	30.

V. RECEPTOR LOCATIONS AND MULTI-RUN AVERAGE CONCENTRATIONS

RECEPTOR	COORDINATES (M) X	Y	Z	AVG (PPM)
1. Recpt 1	-800	13	1.8	3.2
2. Recpt 2	-600	11	1.8	3.3
3. Recpt 3	-30	-100	1.8	4.1
4. Recpt 4	200	17	1.8	3.2
5. Recpt 5	76	-400	1.8	3.6
6. Recpt 6	100	200	1.8	3.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Future with Project AM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

VD= .0 CM/S Z0= 100. CM ALT= 0. (M)
VS= .0 CM/S

II. METEOROLOGICAL CONDITIONS

RUN	U (M/S)	BRG (DEG)	CLASS	AMB (PPM)	MIXH (M)	SIGTH (DEG)	TEMP (C)
1. Hour 1	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
2. Hour 2	1.0	0.	7 (G)	3.2	1000.	17.00	15.0
3. Hour 3	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
4. Hour 4	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
5. Hour 5	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
6. Hour 6	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
7. Hour 7	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
8. Hour 8	1.0	0.	7 (G)	3.2	1000.	17.50	15.0

III. LINK GEOMETRY

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	H (M)	W (M)
A. Link A	0	0	-804	0	AG	.0	28.0
B. Link B	0	0	804	0	AG	.0	28.0
C. Link C	0	0	0	804	AG	.0	28.0
D. Link D	0	0	0	-804	AG	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Future with Project AM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES

RUN		LINK A	B	C	D
1	VPH	1663	1169	1466	1622
	EF	30.	30.	30.	30.
2	VPH	1400	1050	1200	1550
	EF	30.	30.	30.	30.
3	VPH	1200	950	1000	1400
	EF	30.	30.	30.	30.
4	VPH	1000	850	850	1250
	EF	30.	30.	30.	30.
5	VPH	800	700	700	1100
	EF	30.	30.	30.	30.
6	VPH	600	550	550	950
	EF	30.	30.	30.	30.
7	VPH	400	400	400	800
	EF	30.	30.	30.	30.
8	VPH	250	250	250	650
	EF	30.	30.	30.	30.

V. RECEPTOR LOCATIONS AND MULTI-RUN AVERAGE CONCENTRATIONS

RECEPTOR	COORDINATES (M) X	Y	Z	AVG (PPM)
1. Recpt 1	-800	13	1.8	3.2
2. Recpt 2	-600	11	1.8	3.3
3. Recpt 3	-30	-100	1.8	4.1
4. Recpt 4	200	17	1.8	3.2
5. Recpt 5	76	-400	1.8	3.6
6. Recpt 6	100	200	1.8	3.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Future with Project PM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

VD= .0 CM/S Z0= 100. CM ALT= 0. (M)
VS= .0 CM/S

II. METEOROLOGICAL CONDITIONS

RUN	U (M/S)	BRG (DEG)	CLASS	AMB (PPM)	MIXH (M)	SIGTH (DEG)	TEMP (C)
1. Hour 1	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
2. Hour 2	1.0	0.	7 (G)	3.2	1000.	17.00	15.0
3. Hour 3	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
4. Hour 4	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
5. Hour 5	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
6. Hour 6	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
7. Hour 7	1.0	0.	7 (G)	3.2	1000.	17.50	15.0
8. Hour 8	1.0	0.	7 (G)	3.2	1000.	17.50	15.0

III. LINK GEOMETRY

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	H (M)	W (M)
A. Link A	0	0	-804	0	AG	.0	28.0
B. Link B	0	0	804	0	AG	.0	28.0
C. Link C	0	0	0	804	AG	.0	28.0
D. Link D	0	0	0	-804	AG	.0	28.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Future with Project AM
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES

RUN		LINK A	B	C	D
1	VPH	1902	1423	1694	1622
	EF	30.	30.	30.	30.
2	VPH	1700	1250	1500	1500
	EF	30.	30.	30.	30.
3	VPH	1500	1100	1300	1350
	EF	30.	30.	30.	30.
4	VPH	1300	950	1200	1100
	EF	30.	30.	30.	30.
5	VPH	1100	800	1000	950
	EF	30.	30.	30.	30.
6	VPH	900	650	800	800
	EF	30.	30.	30.	30.
7	VPH	700	500	600	650
	EF	30.	30.	30.	30.
8	VPH	500	350	400	500
	EF	30.	30.	30.	30.

V. RECEPTOR LOCATIONS AND MULTI-RUN AVERAGE CONCENTRATIONS

RECEPTOR	COORDINATES (M) X	Y	Z	AVG (PPM)
1. Recpt 1	-800	13	1.8	3.2
2. Recpt 2	-600	11	1.8	3.3
3. Recpt 3	-30	-100	1.8	4.3
4. Recpt 4	200	17	1.8	3.2
5. Recpt 5	76	-400	1.8	3.7
6. Recpt 6	100	200	1.8	3.3

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Future with Project PM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.1 PPM		
SIGTH=	18. DEGREES	TEMP=	15.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	0	0	-804	0	*	AG	1902	30.0	.0	28.0
B. Link B	*	0	0	804	0	*	AG	1423	30.0	.0	28.0
C. Link C	*	0	0	0	804	*	AG	1694	30.0	.0	28.0
D. Link D	*	0	0	0	-804	*	AG	1622	30.0	.0	28.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-800	13	1.8
2. Recpt 2	*	-600	11	1.8
3. Recpt 3	*	-30	-100	1.8
4. Recpt 4	*	200	17	1.8
5. Recpt 5	*	76	-400	1.8
6. Recpt 6	*	100	200	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Future with Project AM
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	97.	8.2	3.8	.1	.0	.2
2. Recpt 2	95.	8.5	3.9	.2	.0	.2
3. Recpt 3	13.	6.4	.4	.2	1.0	.7
4. Recpt 4	261.	7.0	.7	1.9	.1	.3
5. Recpt 5	343.	5.4	.3	.0	.3	.7
6. Recpt 6	201.	5.3	.1	.3	.2	.6

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: With Project AM 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.1 PPM		
SIGTH=	18. DEGREES	TEMP=	15.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	0	0	-804	0	*	AG	1053	30.0	.0	28.0
B. Link B	*	0	0	804	0	*	AG	895	30.0	.0	28.0
C. Link C	*	0	0	0	804	*	AG	809	30.0	.0	28.0
D. Link D	*	0	0	0	-804	*	AG	1281	30.0	.0	28.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-800	13	1.8
2. Recpt 2	*	-600	11	1.8
3. Recpt 3	*	-30	-100	1.8
4. Recpt 4	*	200	17	1.8
5. Recpt 5	*	76	-400	1.8
6. Recpt 6	*	100	200	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: With Project AM 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	97.	6.6	2.2	.1	.0	.1
2. Recpt 2	95.	6.7	2.3	.2	.0	.1
3. Recpt 3	20.	5.6	.1	.2	.3	.8
4. Recpt 4	260.	6.0	.4	1.3	.0	.2
5. Recpt 5	339.	5.0	.2	.0	.0	.6
6. Recpt 6	196.	5.0	.0	.2	.0	.6

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: With Project pm 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.0 PPM		
SIGTH=	18. DEGREES	TEMP=	15.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	0	0	-804	0	*	AG	1240	30.0	.0	28.0
B. Link B	*	0	0	804	0	*	AG	1231	30.0	.0	28.0
C. Link C	*	0	0	0	804	*	AG	1203	30.0	.0	28.0
D. Link D	*	0	0	0	-804	*	AG	1738	30.0	.0	28.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-800	13	1.8
2. Recpt 2	*	-600	11	1.8
3. Recpt 3	*	-30	-100	1.8
4. Recpt 4	*	200	17	1.8
5. Recpt 5	*	76	-400	1.8
6. Recpt 6	*	100	200	1.8

□□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: With Project pm 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: With Project AM 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	4.1 PPM		
SIGTH=	18. DEGREES	TEMP=	15.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	0	0	-804	0	*	AG	1053	30.0	.0	28.0
B. Link B	*	0	0	804	0	*	AG	895	30.0	.0	28.0
C. Link C	*	0	0	0	804	*	AG	809	30.0	.0	28.0
D. Link D	*	0	0	0	-804	*	AG	1281	30.0	.0	28.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-800	13	1.8
2. Recpt 2	*	-600	11	1.8
3. Recpt 3	*	-30	-100	1.8
4. Recpt 4	*	200	17	1.8
5. Recpt 5	*	76	-400	1.8
6. Recpt 6	*	100	200	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: With Project AM 2003
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	97.	6.9	2.6	.1	.0	.2
2. Recpt 2	95.	7.1	2.7	.2	.0	.2
3. Recpt 3	21.	5.9	.2	.3	.4	1.1
4. Recpt 4	260.	6.5	.5	1.7	.0	.3
5. Recpt 5	339.	5.2	.2	.0	.1	.8
6. Recpt 6	196.	5.1	.0	.3	.0	.7

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. Recpt 1	97.	6.6	2.2	.1	.0	.1
2. Recpt 2	95.	6.7	2.3	.2	.0	.1
3. Recpt 3	20.	5.6	.1	.2	.3	.8
4. Recpt 4	260.	6.0	.4	1.3	.0	.2
5. Recpt 5	339.	5.0	.2	.0	.0	.6
6. Recpt 6	196.	5.0	.0	.2	.0	.6

APPENDIX D:
NOISE ASSESSMENT

NOISE IMPACT ASSESSMENT

ASSIEH INDUSTRIAL DEVELOPMENT

May 27, 2004

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ASSIEH INDUSTRIAL DEVELOPMENT NOISE IMPACT ASSESSMENT

INTRODUCTION

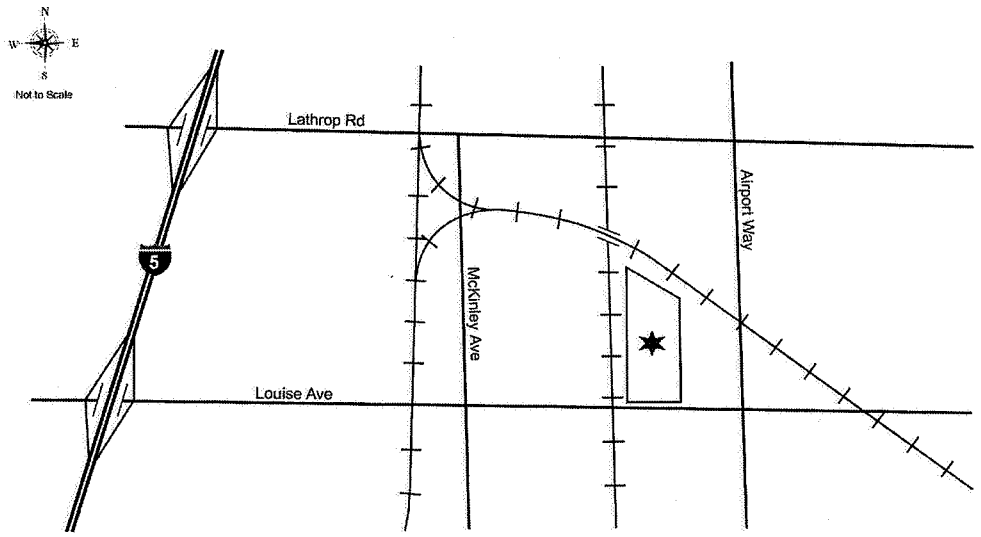
This Noise Impact Assessment (NIA) has been prepared for the purpose of identifying potential noise impacts that may result from the proposed development of an Industrial Development at 2403 W. Louise Avenue in the City of Manteca. The proposed Project is located in Southeast San Joaquin County.

DESCRIPTION OF THE REGION/PROJECT

Figure 1 identifies the location of the Project along with major roadways within the vicinity of the Project site. The project site is located in the northern San Joaquin Valley within the County of Manteca. For noise impact assessment purposes, the "Project" is defined as a combined 1,738,830 square feet of warehouse space located on the north side of Louise and west of Airport Way. Existing noise sources in the area include road traffic, airplanes and trains.

METHODOLOGY

When preparing an NIA, guidelines set by affected agencies must be followed. Acoustical terminology used for this NIA is documented in Appendix A. In analyzing noise levels, the Federal Highway Administration's (FHWA) Highway Traffic Noise Prediction methodology must be applied. Safety concerns must also be analyzed to determine the need for appropriate mitigation resulting from increased noise due to increased traffic adjacent to the Project and other evaluations such as the need for noise barriers and other noise abatement improvements. Criteria levels are given as A-weighted decibels. First, existing "baseline" traffic noise levels are established based on previously collected traffic data and using Sound32 modeling. Sound32 is the Caltrans version of FHWA's STAMINA 2.0/OPTIMA Traffic Noise Prediction Programs. Once existing levels are established, future levels, based on expected traffic growth, are calculated and compared to both the existing noise level and the Noise Abatement Criteria (reference Table 1). It should be noted that the Noise Abatement Criteria levels are not standards, but are levels at which FHWA has determined that noise is of sufficient magnitude that abatement must be considered, as referenced in the United States Code of Federal Regulations Title 23 Part 772, the noise standard mandated by federal law.



Project Location | **Figure 1**

Legend

Project Site

VRPA Technologies, Inc.

TABLE 1
NOISE ABATEMENT CRITERIA
[Hourly A-Weighted Sound Level-decibels (dBA)]

Activity Category	$L_{eq}(H)$	$L_{10}(h)$	Description of activity category
A	57 (exterior)	60 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	70 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	75 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	—	—	Undeveloped lands
E	52 (interior)	55 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: United States Code of Federal Regulations, Title 23, Part 772

When comparing the different alternatives, the findings will determine if an impact will occur as a result of the Project. Under FHWA and Caltrans rules, noise barriers should be considered to mitigate noise impacts associated with transportation improvement projects when the following criteria are met.

First, a future noise level that represents a "substantial increase" over existing noise levels (defined as 12 dBA), regardless of the beginning noise level, is considered an impact. Second, if the Noise Abatement Criteria are approached or exceeded, abatement measures must be investigated. The Criteria are expressed in two descriptors (L_{10} and L_{eq}) for both indoor and outdoor locations and various land use types.

TRAFFIC NOISE

Existing traffic noise levels were evaluated using the FHWA Highway Traffic Noise Prediction Model. Traffic volumes from the Traffic Impact Analysis for this project prepared by Kimley-Horn Associates in April of 2002 (including truck percentages) and speeds of 35 to 40 miles per hour along Louise were entered into the model to estimate noise levels at locations adjacent to the Project. No provision was made for depressed roadways, soundwalls or other factors that would affect noise levels. Potential impacts are classified as follows:

- Low – L_{dn} 60 dB or below;
- Moderate - L_{dn} 61 dB to 70 dB; and

- High - L_{dn} 71 dB or greater.

The potential for adverse noise impacts is generally moderate to high along most segments of State highways, and is generally low to moderate along most segments of other roads and highways.

NOISE IMPACTS

The analysis contained in this section addresses potential noise impacts resulting from implementation of the proposed project. Traffic noise along the Project has been qualitatively analyzed based on projected traffic volumes. On-site noise sources were based on information contained in the operational statement and other information provided by project proponents. .

The previous section provides a description of the acoustical terminology applied to determine noise impacts. Unless otherwise stated, all sound levels reported are in A-weighted decibels (dBA). A-weighing de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards use A-weighing, as it provides a high degree of correlation with human annoyance and health effects.

Project Generated Traffic Noise

To assess the traffic noise impacts that the Project may have on the surrounding land uses, the first step is to determine the baseline or the existing noise condition. The second is to then compare the baseline to future (No Project) level results, based on expected traffic growth and the Noise Abatement Criteria levels. The third step is then compare the No Project noise levels to the Project noise levels.

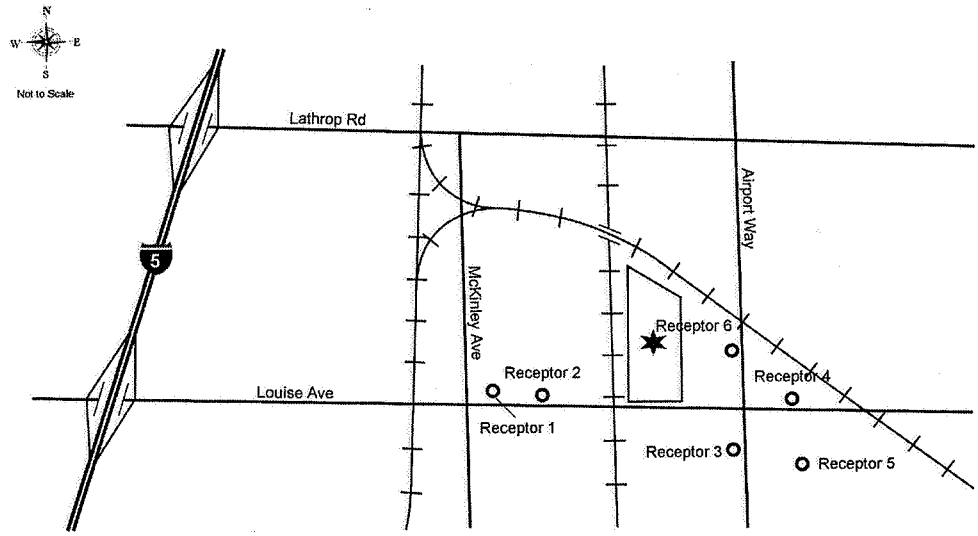
Existing Conditions

The first step toward assessing Project noise impacts is to thoroughly assess all existing noise conditions. To accomplish this task, VRPA Technologies staff compiled current traffic counts and existing geometric conditions. Staff also identified existing sensitive noise receptors along the subject corridor and field measured the existing noise levels during peak hours of traffic at these locations to calibrate modeling efforts. Existing noise sources in the area include airplanes, trains and traffic.

Referencing Figure 2, all analysis is reported by the following receptor locations:

- Residence at 2075 Louise (Receptor 1);
- Educational offices between Louise and Airport Way (Receptor 2);
- Residence at 891 Airport Way (Receptor 3);
- Residence at 3399 Louise (Receptor 4)
- Residence at end of cul-de-sac north of Geneva Way (Receptor 5)
- Residence at 15887 Airport Way (Receptor 6)

Results of the noise analysis along the existing street and highway system in the Project area are reflected in Table 2, and are further described in technical worksheets at the back of this NIA.



Receptor Locations | **Figure 2**

Legend

Project Site

Receptor Location

VRPA Technologies, Inc.

TABLE 2
NOISE IMPACTS FOR EXISTING AND EXISTING WITH PROJECT

Receptor	Existing Ldn Measured	Existing Ldn Predicted	Diff. (Model Calibration Amount)	Exist. w/Project L_{eq} Calib.	Exist & Exist w/Project Diff.
Receptor 1					
Residence at 2075 Louise	67.5	69.5	2.2	69.7	2
Receptor 2					
Office Located on Louise	71.7	73.6	1.9	73.7	2
Receptor 3					
Residence at 891 Airport Way	71.3	66.3	-5	73.5	2.2
Receptor 4					
Residence at 3399 Louise	66.7	68.5	1.8	68.9	2.2
Receptor 5					
Residence on cul-de-sac north of Geneva Way	57.5	62.2	4.7	59.8	2.3
Receptor 6					
Residence at 15887 Airport Way	65.7	69.3	3.3	67.8	2.1

Results of the analysis indicate that Receptors 2 and 3 along the Project corridor are currently above the Noise Abatement Criteria in the Activity Category B.

Existing With Project Conditions

Impacts on existing noise conditions resulting from the Project are described in this section. In this scenario, the Sound32 model was used to analyze the same volumes. The results of the analysis are identified in Table 2 above and in technical worksheets at the back of this document.

When the Project is added to the background or existing noise levels, an increase in predicted noise occurs (2.3 dBA). A significant impact occurs when the increase exceeds 4.0 dBA.

Future Conditions Without Project

Impacts in the Project area resulting from 22 years of growth and development (through 2025) without the Project are described in this Section. This alternative is also referred to as the No Project Alternative. Traffic conditions were referenced from the Traffic Impact Assessment to reflect logical growth in vehicle trips. Results are identified in Table 3.

Future Conditions With Project

Impacts on future noise conditions resulting from the Project are described in this section. In this scenario, the future year volumes associated with the Project were analyzed. Results are identified in Table 3.

It should be noted that the comparison of No Project to Project is not applicable when determining whether a significant impact on noise levels will occur. The appropriate comparison is Existing Conditions Vs Future Conditions With Project. To provide for this analysis, Table 4 below was prepared. Table 4 compares Future Conditions With the Project to Existing Conditions. A comparison of Existing Conditions to Future Conditions With the Project indicates that there will be noise impacts in the range 1.8 dBA to 3.8 dBA. A substantial increase in noise level however, is generally defined as 4 dBA; therefore, the Project will not cause an adverse impact. It is important to note that a majority of the increase in transportation-related noise levels is attributable to traffic unrelated to the proposed project.

TABLE 3
NOISE IMPACTS FOR FUTURE WITHOUT PROJECT (NO PROJECT) AND FUTURE WITH PROJECT ALTERNATIVES

Receptor	Future Without Project (No Project) Ldn-Predicted	Future With Project Ldn Predicted	Future & Future With Project Difference
Receptor 1			
Residence at 2075 Louise	73.3	73.5	.2
Receptor 2			
Office Located on Louise	76.8	77.4	0.6
Receptor 3			
Residence at 891 Airport Way	68.6	69.2	0.6
Receptor 4			
Residence at 3399 Louise	72.3	72.6	0.3
Receptor 5			
Residence on cul-de-sac north of Geneva Way	64.5	65.1	0.6
Receptor 6			
Residence at 15887 Airport Way	71.2	71.8	0.6

TABLE 4
FUTURE CONDITIONS WITH PROJECT AND EXISTING CONDITIONS

Receptor	Existing Ldn Measured	Future w/Project Ldn Calibrated	Existing & Future w/Project Difference
Receptor 1			
Residence at 2075 Louise	67.5	71.5	3.8
Receptor 2			
Office Located on Louise	71.7	74.9	3.2
Receptor 3			
Residence at 891 Airport Way	71.3	74.2	2.9
Receptor 4			
Residence at 3399 Louise	66.7	70.5	3.8
Receptor 5			
Residence on cul-de-sac north of Geneva Way	57.5	60.4	2.9
Receptor 6			
Residence at 15887 Airport Way	66.7	68.5	1.8

On-Site Noise Sources

Noise sources associated with the Assieh industrial development include parking lot activity (e.g., vehicle circulation, engines starting, door slams), truck delivery and loading dock activity. From off-site locations, noise from parking lot activity would be inaudible over the traffic noise on Louise Avenue. Noise from other on-site sources would be occasionally audible, at most, over background traffic. It is projected that the noise from these sources would reach maximum levels of 75 dBA at the site boundary with typical levels 10 to 20 lower.

The design of the project, specifically the truck dock located behind the proposed buildings, typically will provide a minimum noise attenuation of 20 dBA for receptors in the project vicinity based on the size and height of the buildings. Given the absence of noise-sensitive receptors in the immediate project vicinity, and distance attenuation and barrier attenuation from the proposed project design features, intermittent noise levels at nearby residences would be reduced to less than significant levels at the residences nearest to the project site. The project would not result in significant noise impacts from on-site sources.

INVESTIGATION OF APPROPRIATE MITIGATION MEASURES

Noise Barriers

As indicated above, noise impacts resulting from short-term and long-term on-site project operations will be less than significant. No mitigation is required on-site.

Noise mitigation was considered for the existing homes in the project area, which currently exceed the City noise standards due traffic noise with or without the project. In this case, and according to City of Manteca Planning Department, the existing homes are rural residential homes, which will be non- conforming to the latest General Plan. These residential units are planned for removal as development occurs in the area.

Depending on the timing of development in the area and how long these homes stay in place, the only possible mitigation to reduce noise impacts in the project area would be the retrofit of homes through construction due to site distance requirements, breaks required for driveways and cost effectiveness. Noise barriers cannot interrupt the line of sight between the noise source and the receiver. Additionally, the barriers would not be cost effective because the protection is for a limited number or residential receivers.

Temporary Noise Mitigation

Temporary noise impacts will result from construction of the project, however, with adherence to requirements set forth in the Manteca Municipal Code, impacts resulting from construction and construction related activities would be less than significant.

APPENDIX A

ACOUSTICAL TERMINOLOGY

The following terminology has been used for purposes of this NIA:

Ambient Noise Level: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10p.m. and ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.

Decibel, dBA: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micro-newtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition often decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

L_{eq}(h): The hourly value of L_{eq}.

L_{max}: The maximum noise level recorded during a noise event

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). L_{10} equals the level exceeded 10 percent of the time.

L_n(h): The hourly value of L_n.

Noise Exposure Contours: Lines drawn about a noise source indicating

constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to the duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and the reference duration of one second

Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighing filter network. The A-weighing filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Note: *CNEL and DNL represent daily levels of noise exposure averaged on an annual basis,* while L_n *represents the average noise exposure for a shorter time period, typically one hour.*

APPENDIX B

SOUND 2000 WORKSHEETS

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
AIRPORT WAY 2025 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	10.	11.*	12.					B1 P1	900.0	

.1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 3	67.	500.	69.9
2	REC 5	67.	500.	65.8
3	REC 6	67.	500.	72.5

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
2
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
11.

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
AIRPORT WAY 2003 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	BARRIER HEIGHTS 0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	10.	11.*	12.					B1 P1	900.0	

.1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 3	67.	500.	68.5
2	REC 5	67.	500.	64.5
3	REC 6	67.	500.	71.1

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
2
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
11.

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
AIRPORT WAY 2025 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	10.	11.*	12.					B1 P1	900.0	
	0	1	2	3	4	5	6	7			

.1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 3	67.	500.	68.6
2	REC 5	67.	500.	64.5
3	REC 6	67.	500.	71.2

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
2
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
11.

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
AIRPORT WAY 2025 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	BARRIER HEIGHTS 0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	10.	11.*	12.					B1 P1	900.0	

.1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 3	67.	500.	69.2
2	REC 5	67.	500.	65.1
3	REC 6	67.	500.	71.8

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
2
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
11.

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
LOUISE AVE 2003 NOPROJECT

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	900.0	
	0	1	2	3	4	5	6	7			

.1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 1	67.	500.	72.1
2	REC 2	67.	500.	76.0
3	REC 4	67.	500.	71.1

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0.

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
LOUISE AVE 2025 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	900.0	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 1	67.	500.	71.7
2	REC 2	67.	500.	75.6
3	REC 4	67.	500.	70.7

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0.

LOUISE AVE 2025 WITH PROJECT
T-EB TRAFFIC, 1
712 , 40 , 15 , 35 , 15 , 35
T-WB TRAFFIC, 2
919 , 40 , 19 , 35 , 19 , 35
L- EB LANE 1, 1
N,0,4,0
900,4,0
L- WB LANE 1, 2
N,0,-4,0
900,-4,0
BARRIER NO BERM, 1, 92 ,0, 0
1
0,4,0,0,B1 P1
900,4,0,0,B1 P2
R, 1, 67, 500
300,13,2,REC 1
R, 2, 67, 500
360,10.7,2,REC 2
R, 3, 67, 500
320,17,2,REC 4
D, 4.5
1, ALL
C,C

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
LOUISE AVE 2025 WITH PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	900.0	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	REC 1	67.	500.	73.5
2	REC 2	67.	500.	77.4
3	REC 4	67.	500.	72.5

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0.

- High - L_{dn} 71 dB or greater.

The potential for adverse noise impacts is generally moderate to high along most segments of State highways, and is generally low to moderate along most segments of other roads and highways.

NOISE IMPACTS

The analysis contained in this section addresses potential noise impacts resulting from implementation of the proposed project. Traffic noise along the Project has been qualitatively analyzed based on projected traffic volumes. On-site noise sources were based on information contained in the operational statement and other information provided by project proponents.

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Project Generated Traffic Noise

To assess the traffic noise impacts that the Project may have on the surrounding land uses, the first step is to determine the baseline or the existing noise condition. The second is to then compare the baseline to future (No Project) level results, based on expected traffic growth and the Noise Abatement Criteria levels. The third step is then compare the No Project noise levels to the Project noise levels.

Existing Conditions

The first step toward assessing Project noise impacts is to thoroughly assess all existing noise conditions. To accomplish this task, VRPA Technologies staff compiled current traffic counts and existing geometric conditions. Staff also identified existing sensitive noise receptors along the subject corridor and field measured the existing noise levels during peak hours of traffic at these locations to calibrate modeling efforts. Existing noise sources in the area include airplanes, trains and traffic.

Referencing Figure 2, all analysis is reported by the following receptor locations:

- Residence at 2075 Louise (Receptor 1);
- Educational offices between Louise and Airport Way (Receptor 2);
- Residence at 891 Airport Way (Receptor 3);
- Residence at 3399 Louise (Receptor 4)
- Residence at end of cul-de-sac north of Geneva Way (Receptor 5)
- Residence at 15887 Airport Way (Receptor 6)

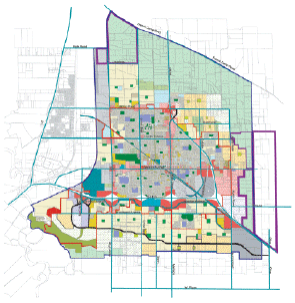
Appendix B:
Assieh Industrial Development Project
Final Environmental Impact Report

B-1: Final Environmental Impact Report (Response to Comments)

Response to Comments
on the
Draft Environmental Impact Report
for the
City of Manteca
Assieh Industrial Development Project

October 2004

Prepared for:



City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
Contact: Mr. Benjamin Cantu, Advanced Planning Manager
209.239.8424

Prepared by:

Michael Brandman Associates
2000 Crow Canyon Place, Suite 415
San Ramon, CA 94583
Contact: Jason M. Brandman, Regional Manager
925.830.2733

TABLE OF CONTENTS

Section 1: Introduction and Executive Summary of the Draft EIR 1
1.1 Authority 1

Section 2: List of Commentors 2

Section 3: Response to Comments 3
3.1 Introduction 3
3.2 Comment Letters and Responses 3
3.2.1 State Agencies 6
3.2.2 Regional Agencies 14
3.2.3 Individuals 24

Section 4: Errata and Revisions to the Draft EIR 25
4.1 Introduction 25

SECTION 1:
INTRODUCTION AND EXECUTIVE SUMMARY OF THE DRAFT EIR

1.1 AUTHORITY

In accordance with Section 15088 of the State of California Environmental Quality Act (CEQA) Guidelines, the City of Manteca (City), as the lead agency, has evaluated the comments received on the Draft Environmental Impact Report (Draft EIR) (State Clearinghouse No. 2203052069) for the Assieh Industrial Development Project (AIDP). Written responses to the comments and additional documents have been prepared and are included in this volume of the EIR, together with a copy of the Draft EIR. The responses will serve to assist the City of Manteca's decision-making boards and commission in their review of the Final EIR for the AIDP.

This Response to Comments document is organized into four sections:

- **Section 1 - Introduction**
- **Section 2 - List of Commentors:** Provides a list of the agencies, organizations, and individuals that commented on the Draft EIR.
- **Section 3 - Responses to Comments:** Includes a copy of all letters received and responded to Section 3 also provides responses to comments on environmental points describing the disposition of issues, explaining the Draft EIR analysis process, supporting Draft EIR conclusions, or providing information or corrections, as appropriate. For easier reading, the section is organized with the responses to each letter immediately following the letter.
- **Section 4 - Errata and Refinements to the Draft EIR:** Includes an addendum listing refinements and clarifications, incorporated into the text of the EIR.

SECTION 2:
LIST OF COMMENTORS

Commentors **Author Code**

State Agencies

State of California Public Utilities Commission ..... PUC
State of California Department of Transportation ..... CALTRANS

Regional

San Joaquin Valley Air Pollution Control District ..... SJVAPCD
San Joaquin Council of Governments ..... SJCOG
San Joaquin County Public Works Department ..... SJCPW
South San Joaquin Irrigation District ..... SSJID

Individuals

Georgianna Reichert ..... GR

SECTION 3:
RESPONSE TO COMMENTS

3.1 INTRODUCTION

In accordance with Section 15088 of the State of California Environmental Quality Act (CEQA) Guidelines, the City of Manteca (City), as the lead agency, evaluated the comments received on the Draft EIR (State Clearinghouse No. 2003052069) for the proposed Assieh Industrial Development Project (AIDP) and prepared responses to the comments. This Response to Comments document becomes part of the Final EIR for the project in accordance with Section 15132 of the State CEQA Guidelines.

The Draft EIR was distributed for public circulation by the City in June 2004. The City used the following methods to elicit comments on the Draft EIR: distributing copies of the Draft EIR to state, regional, and local agencies, as well as local libraries, and individuals.

3.2 COMMENT LETTERS AND RESPONSES

The comment letters and responses are provided on the following pages. All corrections, clarifications, and refinements are herein incorporated by reference into the Draft EIR text.

STATE OF CALIFORNIA
PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

ARNOLD SCHWARZENEGGER, *Governor*

RECEIVED
JUN 25 2004
Community Development Department

June 28, 2004

File No.183-39
SCH# 2003052069

Benjamin Cantu
Planning Manager
City of Manteca
1001 West Center Street
Manteca, CA 95337

RE: Notice of Completion for City of Manteca Community Development Project

Dear Mr. Cantu:

As the state agency responsible for rail safety within California, we recommend that any projects planned adjacent to or near the rail corridors in the County are planned with the safety of these rail corridors in mind. New developments may contribute to an increase in traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. PUC-1

Safety factors to consider include the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists in the City.

If you have any questions in this matter, please call me at (916) 324-7134

Very truly yours,

David Stewart
Utilities Engineer
Consumer Protection and Safety Division

3.2.1 STATE AGENCIES

State of California Public Utilities Commission

Response to PUC-1

The following text shall be added to page 4.2-22, after Table 4.2-3:

Railroad Crossings

There are eight railroad crossings in the vicinity of the proposed project, three on Louise Avenue, two on Lathrop Road, one on Yosemite Avenue, one on Airport Way, and two on McKinley Avenue. As proposed, the project will have a singular access point at Louise Avenue. The driveway will operate as a signalized intersection, thereby metering the flow of traffic onto area streets. Vehicles entering Louise Avenue from the site either could turn right (driving through two railroad crossing) or left (driving through one railroad crossing), or travel down McKinley Avenue (driving through one railroad crossing). Vehicles may be required to drive through the Yosemite Avenue crossing to access State Route (SR) 120. Vehicles turning left (north) on Airport Way would drive through that railroad crossing. Because of the street layout and expected traffic patterns, the two crossings on Lathrop Road are not likely to be regularly utilized as a result of the proposed project.

The following text shall be added to the end of page 4.2-33:

Impact 4.2-D: Increased traffic from the AIDP on area railroad crossings may increase wear-and-tear of railroad crossings' infrastructure. (Less Than Significant Impact)

New development will not only contribute to increased traffic volumes on streets and intersections but also on the railroad crossings mentioned above. This could lead to unsafe conditions at these crossings if not improved to support the additional traffic. The railroad crossing on Lathrop Road is not likely to be affected by the project. The State Public Utilities Commission (PUC) is responsible for regulating railroad safety. To address railroad crossing safety, the applicant will consult with the State Public Utilities Commission prior to building permit issuance to determine the extent of impact on railroad crossings, unsafe conditions, and appropriate improvements. Safety factors include grade separation for major thoroughfares, improvements to existing at-grade railroad crossings and appropriate fencing of the project site.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
Implementation of the proposed project would not result in a significant impact related to the wear-and-tear of railroad crossings' infrastructure.

Impact 4.2-E: The lack of fencing of the project site along the railroad right-of-way could leave tracks exposed to pedestrians, which would also represent a safety issue associated with the AIDP. (Less Than Significant Impact)

An existing railroad line is located in proximity to the project site along its northern and western boundary. Project plans include perimeter fencing, which will serve to protect pedestrian traffic generated by the project from rail activity. Therefore, implementation of the AIDP would not result in significant pedestrian safety impacts associated with nearby railroad operations.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Implementation of the proposed project would not result in significant pedestrian safety impacts associated with railroad operations to the north and west of the site.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 STOCKTON, CA 95201
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July 16, 2004

10-SJ-120-PM 1.18
DEIR Assieh Industrial
Development Project
SCH #2003052069

Mr. Kyle Kollar
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337

Dear Mr. Kollar:

Thank you for the opportunity to review the Draft Environmental Impact Report (DEIR) for the City of Manteca, Assieh Industrial Development Project. The proposed project is located at the eastern terminus of East Madruga Road, 400 feet East of South Guthmiller Road.

We have circulated this document through our District functional units for review and have the following comments:

TRAFFIC OPERATIONS

- Please provide a Technical Traffic Analysis Report (Traffic Impact Study) and traffic simulation files, Synchro, etc. Technical Traffic Analysis Report should include the following:

  -Analyze the Level of Service (LOS Worksheet) for signalized intersections, unsignalized intersections, mainline freeway segments and freeway ramp junction using HCM 2000 Analysis methodology, HCS 2000 software and Synchro traffic simulation software.

  -Analysis output result files.

CALTRANS-1

- DEIR, appendix B, page 3, states that the Villa Ticino West Development was not incorporated in this study since the project was still in the planning stage. Therefore, "this analysis prepared an estimate of the traffic likely to be generated..." Also mentioned was "since then, a traffic report has been prepared." If that is true, this analysis should be revised to incorporate the traffic from Villa Ticino West Development.

CALTRANS-2

- DEIR, appendix B, page 24, states "consideration was given to adding additional left turn lanes when turn volumes exceeded more than 300 vehicles per hour. Right turn lanes were considered when right turn volumes exceeded more than 200 vehicles per hour." However, the "Impacts and Mitigations" section on page 33 fail to mention any mitigations at the Lathrop Rd/I-5 intersection, Louise Ave/I-5 intersection, Yosemite Ave/SR120 intersection and Airport Way/SR120 intersection. These intersections show an increase in left turn movements that warrant dual left turn lanes.

CALTRANS-3

- Traffic Operations does not concur with the conclusion and recommendation of the DEIR, appendix B, Traffic Impact Analysis at this time. Please provide a detailed analysis for review to determine the mitigations needed.

TRAVEL FORECASTING

CALTRANS-4

- The existing traffic volumes that were used for EB on to SR-120 were found to be too low in both the AM and PM by a factor of 10. It states 15 (17) peak hour trips it should be around 175/(175).

If you are aware of any controversy regarding any of our requirements, please contact Lynn O'Connor at (209) 948-7575 (e-mail: lynn_o'connor@dot.ca.gov) or me at (209) 941-1921. We look forward in continuing to work with you in a cooperative manner on the project.

Sincerely,

TOM DUMAS, Chief
Office of Intermodal Planning

cc: Scott Morgan
State Clearinghouse

State of California Department of Transportation

Response to comment CALTRANS 1:

Traffic analysis was completed using Highway Capacity Software (HCS) at unsignalized intersections and Synchro software at signalized intersections. Both software platforms are based on methodology found in the Highway Capacity Manual (2000). Study intersections included freeway ramp intersections where it is anticipated that project traffic will enter and exit the freeway. Mitigation was recommended at locations that failed to meet the level of service criteria and to address identified impacts.

Because the project scoping process did not identify the mainline or ramp junctions as being required for analysis, no evaluation was completed in the Draft EIR. However, in response to the request for analysis of the mainline and ramp junctions, a qualitative review of the potential effect of project traffic on Interstate-5 (I-5) and SR 120 traffic volumes was conducted for this response.

According to the published *Annual Average Daily Traffic Volumes (2003)* from CALTRANS, peak hour volume on I-5 is approximately 8,700 vehicles near the Louise Road interchange. Trips generated by the proposed project would result in an approximate 2 percent increase of traffic on I-5 near the interchange. At other interchanges, that percentage is anticipated to be lower.

Published peak hour volumes on SR 120 range from 4,900 near the Airport Way interchange to 5,800 near the I-5 interchange. Project trips generated by the proposed project would result in an approximate increase of 2 percent and less than 1 percent, respectively.

I-5 and SR 120 segments near the project site typically operate at the speed limit even during the peak hour; therefore, the project is not anticipated to result in a significant impact to the mainline highway segments or ramp junctions.

Response to comment CALTRANS 2:

To the extent possible, the Draft EIR used the same assumptions as found in the Villa Ticino Project Report. This included traffic volumes at the shared new access on Louise Avenue, and trip generation for the single-family and multi-family residential units. However, trip generation for commercial land uses was oversimplified in the Villa Ticino Report (e.g., treated as all shopping center uses). For that reason, the Draft EIR prepared a much more detailed calculation of trip generation uses (e.g., supermarket, specialty retail, restaurants, and gas station) which resulted in a much higher volume of total project trips. Therefore, the Draft EIR trip generation results are considered conservative in comparison with the Villa Ticino Report.

Response to comment CALTRANS 3:

As noted in the Draft EIR, consideration to adding additional right and left turn lanes was given when traffic volumes exceeded specific thresholds. However, justification for additional turn lanes was weighed against the results of the operational analyses. Although several of the turn movements satisfy the thresholds for consideration, the results of the traffic analyses indicate that there is sufficient capacity at the intersections to meet the level of service objectives without the addition of more turn lanes.

Response to comment CALTRANS 4:

Traffic counts collected for the Draft EIR were reviewed and compared with traffic counts collected for an April 2002 study by Farhad and Associates. The comparison found that traffic volumes entering the eastbound SR 120 ranged from one vehicle in the AM to 15 vehicles in the PM.

Therefore, unless there has been a significant change to traffic conditions since the preparation of both the Draft EIR and the 2002 study, it appears that the comment by CALTRANS is in error.

San Joaquin Valley
Air Pollution Control District

July 16, 2004

Reference #: 20040314

Benjamin Cantu
City of Manteca
Community Development Department
1001 W. Center Street
Manteca, CA 95337

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ASSIEH INDUSTRIAL DEVELOPMENT PROJECT.

Dear Mr. Cantu:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the proposed project and offers the following comments:

The San Joaquin Valley's air quality has been designated nonattainment by the EPA and by the Air Resources Board (ARB) for O_3 (ozone) and PM-10 (fine particulate matter, dust). The Federal Clean Air Act (CAA) and the California Clean Air Act require areas that are designated nonattainment to reduce emissions until standards are met. SJVAPCD-1

Based upon the information provided in the Draft Environmental Impact Report (DEIR) the District disagrees with the finding identified in the air quality section of the report. The air quality analysis uses the year 2025 as the year for emission calculation / projection completion, based on conversations with Mr. Benjamin Cantu, City of Manteca Planning, it appears as if project completion is scheduled in the near future. Therefore emission calculations need to be calculated based upon projects scheduling. Additionally, if the project has over a five year projected build-out, analyses should be done for the final build-out year and one intermediate year. If projected emissions exceed thresholds for any analysis year, the impacts are considered to be significant. SJVAPCD-2

David L. Crow
Executive Director/Air Pollution Control Officer

Northern Region Office
4230 Kiernan Avenue, Suite 130
Modesto, CA 95356-9322
(209) 557-6400 • FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
(661) 326-6900 • FAX (661) 326-6985

www.valleyair.org

Finally, there is no discussion of toxic emissions associated with diesel-fueled engines and vehicles. The California Air Resources Board has issued a report entitled **Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles** (October 2000). Appendix VII of the report provides several risk characterization scenarios, which may serve as a starting point for estimating risks from diesel engine emissions. The District will work with applicants to review appropriate methodology for estimating toxic risk. SJVAPCD-3

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me at (209) 557-6400.

Sincerely,

John Cadrett
Environmental Planner
Northern Region

C: file

3.2.2 REGIONAL AGENCIES

San Joaquin Valley Air Pollution Control District

Response to SJVAPCD comment 1:

Although the operation of the proposed project will contribute to on-going air emissions, mitigation is provided to reduce impacts to less than significant. More specifically, traffic-related mitigation measures 4.2-B-1, 4.2-B-2 and 4.2-B-3, on page 4.2-32 of the Draft EIR, serves to reduce idling traffic and therefore reduce ozone precursors. Construction-related air quality mitigation measures 4.3-B-1 through 4.3-B-11 on page 4.3-8 of the Draft EIR, serve to reduce PM_{10} emissions. Long-term air quality mitigation measures 4.3-C-1 through 4.3-C-8 on page 4.3-11, will reduce onsite stationary onsite emissions in addition to reducing vehicular emissions associated with long-term operation of the proposed project.

Response to SJVAPCD comment 2:

Air quality analyses typically consider the following scenarios: existing conditions without project, existing conditions with project, future conditions without project and future conditions with project (the future scenario is usually associated with build-out of a given city's general plan). For this response; however, VRPA Technologies developed the following regional air quality impact assessment to identify the amount of pollutant increases from mobile and area sources associated with the development of the project in phases.

The following text shall be added to page 5-14 after table 5-4:

The project will be built in two phases. Phase one will include the construction of 397,774 square feet (sq.ft.) of warehouse space to be completed in the year 2005, and phase two will include the remaining 1,006,909 sq.ft. to be completed in 2006. This analysis provides for estimated emissions (reactive organic gases -- ROG, nitrous oxide -- NO_X, and particulate matter -- PM_{10}). Also included is the analysis of regional mobile source impacts considering trip rates, acres, total trips, trip types and vehicle fleet mix for the proposed phased construction years. URBEMIS2002 software was used to conduct this analysis.

Results of the 2005 phase one and 2006 phase two regional mobile source analysis and the area source operations analysis for the Project are reflected in Table 5-5 below. Specifically, year 2006 emissions projection results indicate that emissions associated with the project will exceed District Interim Emissions Thresholds of 10 tons per year for ROG and NO_X.

Table 5-5
Project Phase Emission
2005 and 2006

Land Use	Sq. Ft.	ROG	NO_X	PM_{10}
Area Source Emission (tons per year)				
Phase 1 – Industrial Park	397,774	0.02	0.15	0.00
Phase 2 – Industrial Park	1,006,909	0.02	0.15	0.00
Operational Emissions (tons per year)				
Phase 1 – Industrial Park	397,774	6.22	8.55	6.22
Phase 2 – Industrial Park	1,006,909	12.73	16.98	13.13
Total Emissions	**1,404,683**	**18.99**	**25.83**	**19.35**
Source: VRPA Technologies, August 2004				

The analysis of the Project for the year 2005 and 2006 indicates that the project will exceed the San Joaquin Valley Air Pollution Control District's level of significance criteria of 10 tons per year for both ROG and NO_X. The exceedence occurs as a result of the operational (vehicle) emissions from travel to and from the site. Mitigation measures listed in the Air Quality Impact Assessment for this project, and included in the Draft EIR, would mitigate impacts from project operations to less than significant levels.

Response to SJVAPCD comment 3:

The following text shall be included on the bottom of page 3-2:

3.5.2 Regional Agencies

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has recently become more stringent about requiring a Hazardous Risk Assessment (HRA) for most new development projects. In response to the potential for increased hazards from diesel trucks, SJVAPCD may require an HRA for this project.

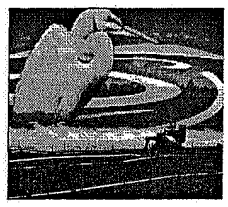
The following shall be included on the bottom of page 4.3-11.

Impact 4.3-D: Operation of the project will most likely involve the use of diesel trucks, which have greater and more toxic emissions than do passenger vehicles. (Less Than Significant Impact)

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has recently become more stringent about requiring a Hazardous Risk Assessment (HRA) for most new development projects. In response to the potential for increased hazards from diesel trucks, SJVAPCD may require an HRA for this project. Prior to tenant improvement approval, the applicant will coordinate, in consultation with the City, with the SJVAPCD on the need to prepare an HRA. If an HRA is warranted, the applicant, in consultation with the City, will coordinate with the SJVAPCD to review the appropriate methodology for estimating toxic risk.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
Implementation of the proposed project would not result in significant toxic emission impacts associated with diesel truck emissions.



SJCOG, Inc.

555 E. Weber St. • Stockton, CA 95202 • (209) 468-3913 • FAX (209) 468-1084

RECEIVED
JUL 19 2004
Community Development Department

SJMSCP RESPONSE TO LEAD AGENCY ADVISORY AGENCY NOTICE TO SJCOG, Inc.

To: Ben Cantu, Manteca Community Development Department

From: Jerome Washington, SJCOG, Inc.

Date: July 16, 2004

Re: **Lead Agency Project Title:** Assieh Industrial Development Project
Lead Agency Project Number: N/A
Assessor Parcel Number(s): N/A

Total Acres to be Converted from Open Space Use: 80

Habitat Types to be Disturbed: Multi-Purpose Open Space (Pay Zone A)

Species Impact Findings: Findings to be determined by SJMSCP biologist.

Dear Mr. Kollar:

The City of Manteca is a signatory to San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP satisfies requirements of both the state and federal endangered species acts, and ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). Although participation in the SJMSCP is voluntary, lead agents should be aware that if project applicants choose against participating in the SJMSCP, they will be required to provide alternative mitigation in an amount and kind equal to that provided in the SJMSCP.

SJCOG, Inc. has reviewed the Draft Environmental Impact Report (DEIR). This project involves developing an 80-acre industrial park, consisting of six industrial warehouse structures, to be constructed in two phases. The project site is located north of Louise Ave. and west of Airport Way; within the city limits of Manteca.

This project will require the conversion of Multi-Purpose Open Space Habitat (Pay Zone A) and as such should condition the project applicant(s) to participate in the SJMSCP. SJCOG-1

If you have any questions, please give me a call at (209) 468-3913.

San Joaquin Council of Governments

Response to comment SJCOG 1:

Based on the initial study for the project, it was determined that the proposed project site does not support sensitive habitat.

THOMAS R. FLINN
DIRECTOR

THOMAS M. GAU
DEPUTY DIRECTOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

BENTON ANGOVE
BUSINESS ADMINISTRATOR

Public Works
San Joaquin County
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JUL 23 2004
Community Development Department

July 20, 2004

Mr. Benjamin Cantu, Advance Planning Manager
City of Manteca - Community Development Department
1001 West Center Street
Manteca, California 95337

SUBJECT: PUBLIC REVIEW COMMENTS OF THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ASSIEH INDUSTRIAL DEVELOPMENT DEPARTMENT PROJECT

Dear Mr. Cantu:

The San Joaquin County Department of Public Works has reviewed the above-referenced document and our concerns, recommendations, and corrections are as follows:

1. The traffic circulation analysis indicates no additional traffic on Airport Way north of Lathrop Road. This seems unlikely as Airport Way serves as a major north/south Stockton-Manteca connection. The airport, UPRR multimodal facility, and the south Stockton industry, as well as employee traffic, would utilize Airport Way. This should be analyzed and mitigated as necessary. SJCPW-1

2. At the intersection of Airport Way/Lathrop Road (near-term), would it further improve the overall LOS from D to C if a right-turn-overlap is implemented with the eastbound right and northbound left-turn lanes? This intersection does not show any AIDP trips but somehow treatment to the right-turn movement will improve overall LOS, explain. SJCPW-2

3. At the site entrance, Exhibit 4.2-5 and table 4.2-4 have conflicting values. AM out is about 21 percent off. SJCPW-3

4. Transportation and Circulation: Page 4.2-24 Project Trip Distribution and Assignment: All references to exhibits under this heading are inaccurate. An exhibit illustrative of project trip distribution is missing. This should be corrected to allow the reviewer full consideration of the subject analysis, especially since the complete traffic analysis is contained in an appendix that was not provided for review. SJCPW-4

Thank you for the opportunity to be heard. Should you have questions or need additional information regarding the above comments, please contact me at 953-7624.

Sincerely,

CLAUDIA GEMBERLING
Environmental Coordinator

CG:tee
TP-4G070-E1

c: Adam Brucker, Associate Planner
Pete Martin, Senior Civil Engineer
Tom Okamoto, Senior Civil Engineer

San Joaquin County Department of Public Works

Response to comment SJCPW-1:

The Draft EIR assumed that project traffic oriented to the north would principally use I-5 and SR-120, with approximately 15 percent of the project traffic passing through the Lathrop Road/Airport Way intersection. Assuming that some of the 15 percent travels through the intersection as a north or southbound through movement (as suggested by SJCPWD), rather than as a right or left turn movement, it would result in the same or less delay and congestion at the intersection. Thus, no new impact would be expected if some of the project traffic travels on Airport Way, north of Lathrop Road.

Response to comment SJCPW-2:

Adding a right-turn overlap is possible and would be expected to reduce delay at the intersection. However, the mitigation identified in the Draft EIR addresses level of service deficiencies and further signal improvement required for the project that would reduce impacts at this intersection.

Response to comment SJCPW-3:

Based on the trip generation calculations, exiting vehicles in the AM peak hour should have been reported in the Draft EIR Table as 114 rather than 144. Furthermore, it should be noted that Exhibit 4.2.5 conservatively added five additional trips (e.g., above the reported trip generation in Table 4.2-4) between the Assieh project and the Villa Ticino project to represent the potential trip capture between the two developments. Table 4.2-4 has been corrected to reflect the accurate trip generation.

Response to comment SJCPW-4:

The following sentence has been added to the third paragraph on page 4.2-24:

It is important to note that this scenario does not include the trips generated by the project; rather, it represents projects already approved that will generate traffic in the project area (namely, the Villa Ticino project).

Exhibits 4.2-7, 4.2-8, and 4.2-9 have been renamed to more accurately reflect their meaning and the associated text has been modified, thereby reducing any potential confusion on the part of the reader.

Exhibit 4.2-7 has been renamed Approved Development No Project Generated Traffic Volumes.

Exhibit 4.2-8 has been renamed Project Development Generated Traffic Volumes (this also represents the illustrative exhibit of project trip generation), and Exhibit 4.2-9 has been renamed Approved Development Plus Project Development Generated Traffic Volumes.

SOUTH SAN JOAQUIN IRRIGATION DISTRICT

June 17, 2004

Darcy Goulart
City of Manteca
Community Development Dept.
1001 W. Center Street
Manteca, CA 95337

RECEIVED
JUN 21 2004
Community Development Department

Re: Assieh Industrial project

Dear Ms. Goulart:

The South San Joaquin Irrigation District owns, operates, and maintains a drainage facilities known as the FCOC, located adjacent to the west boundary of the property described in the above referenced notice. This drain consists of a large open canal that is used for District operations and permitted storm drainage discharges by the City of Manteca and others.

Upon review of the information supplied, there is some cause for concern for the District relative to the proposed project as it relates to potential discharge of drainage into the FCOC. According to the information provided, the development would rely heavily upon drainage into the FCOC. The previous and proposed use of the property poses some substantial water quality issues that will need to be mitigated. SSJID-1

Additionally, the drainage canal has a limited capacity. This was identified in a recent hydraulic study that emphasized the need to make major improvement to the canal to accommodate any proposed additional inflows. Flows that are currently entering the facility are permitted under an extension of an expired agreement between the City of Manteca and the District. The two agencies are in the process of negotiating a new agreement that would consider including properties such as this that are not covered under the existing agreement and have not been covered under any previous agreements. SSJID-2

In order to enable staff to better evaluate any potential impacts relating to this project, more information relative to water quantity and quality will need to be provided. Further the environmental impact report will need to address those concerns and provide specific information concerning mitigation of those concerns. SSJID-3

The District will also need to be included as an approving agency for any plans that will involve discharge of drain water into District facilities. SSJID-4

P. O. Box 747, Ripon, CA 95366-0747 • Phone 209/823-3101 • FAX 209/823-8406

If there are further questions please feel free to contact me at (209) 249-4617.

Sincerely,

Sam Bologna

Sam Bologna
Engineering Department Supervisor

cc: Mike Gilton

South San Joaquin Irrigation District

Response to comment SSJID-1:

As noted on page 4.5-6 of the Draft EIR, the project will be required to comply with the City's Stormwater Management Plan – Post Construction Stormwater Management in New Development and Redevelopment Plan, which stipulates measures to control stormwater quality, such as the development of post construction programs that consider water quality impacts of new development. This will reduce potential operational impacts to water quality to less than significant.

Response to comment SSJID-2:

As noted on page 4.5-6 of the Draft EIR, the project will retain stormwater on-site until capacity is available at the French Camp Outlet Canal (FCOC).

Response to comment SSJID-3:

The hydrology and water quality analysis was based on the hydraulic capacity evaluation prepared for the SSJID's FFOC and the City of Manteca's Storm Drainage Master Plan, which comprehensively addresses the issue of water quality. Additional water quality analysis was not identified as necessary by the SSJID during the NOP review and comment process. It is unclear what additional information would be required. As part of the project, the applicant will require approval from the City and SSJID to discharge into FCOC. SSJID will have the option to condition that approval, if additional measures are required to ensure water quality.

Response to comment SSJID-4:

The Final EIR will identify SSJID as a responsible agency that requires approval to discharge into FCOC. The following has been added as the last paragraph on page 3-2 of the Draft EIR:

South San Joaquin Irrigation District. The applicant is required to obtain approval from the South San Joaquin Irrigation District to discharge stormwater into the French Camp Outlet Canal (FFOC), which is owned and maintained by the district.

July 15, 2004

In response to the impacts for the proposed new use for the property next to the Davis office, the major impacts is Lawrence Avenue is not designed to handle any more large truck traffic, with one distribution center already in place no more should be allowed until such time as the roads are widened, the trucks cannot make the turn from Cuprit to Lawrence without going out of their lane, when the topic is from people going to work or returning there is total grid lock and more large trucks will only add to the problem,

GR-1

GR-2

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JUL 15 2004
Community Development Departmen

over

Noise - When large trucks start the noise is deafening.

GR-3

Georgeann Rouhart
3605 E Laura
Manteca Ca
95337

3.2.3 INDIVIDUALS

Georgianna Reichert

Response to GR-1:

The transportation analysis took into account the existing truck traffic and the potential for the project to generate additional truck traffic. To mitigate traffic impacts, the project includes widening an eastbound turn lane at the intersection of Airport Way and Lathrop Road. In addition, the intersection of McKinley Avenue and Louise Avenue will be widened, and westbound and southbound turn pockets will be installed. As noted in mitigation measure 4.2-B-3, an eight-phase traffic signal will be installed at the intersection of Louise Avenue and the project driveway. This mitigation will reduce impacts to less that significant by maintaining or inducing acceptable levels of service.

Response to GR-2:

Please see response to GR-1.

Response to GR-3:

The noise analysis for the Draft EIR indicates that the project will not raise noise beyond what is considered by the City to be significant, which according to the Draft EIR Thresholds of Significance would be an increase of more than 4 dBA. However, noise levels will exceed established noise levels and the cumulative impact of the project in conjunction with other foreseeable projects would be significant and unavoidable. While the burden of this impact does not rest entirely on the proposed project, CEQA requires that the City adopt a Statement of Overriding Considerations. The City will also have to make findings to support the decision.

It is true that a person exposed to high noise levels (generally over 80 dbA) repeatedly or for prolonged periods can suffer from hearing damage. According to CALTRANS' "Technical Noise Supplement," the main cause of permanent, gradual damage is daily exposure to industrial noise at very close range. A traumatic loss of hearing can come with a short and sudden exposure to an extremely high noise level such as a gunshot or explosion. Transportation noise levels experienced by the community and general public are typically not high enough to produce hearing damage.

SECTION 4:
ERRATA AND REVISIONS TO THE DRAFT EIR

4.1 INTRODUCTION

The following section includes revisions to the text of the Draft EIR and are listed by page number.

The mitigation measures on page 4.2-32 shall be revised as follows:

4.2-B-1: The applicant shall construct a 125-foot eastbound right turn bay at the intersection of Airport Way and Lathrop Road to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection.

4.2-B-2: The applicant shall construct a 100-foot westbound and a 100-foot southbound right turn bay at the intersection of McKinley Avenue and Louise Avenue to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection.

4.2-B-3: The applicant shall install an 8-phase traffic signal at the intersection of Louise Avenue and the project driveway to improve the operation to LOS C in the AM and PM. Based on the proportion of AIDP traffic compared with Villa Ticino West project, the AIDP project shall pay 52 percent and the Villa Ticino West project shall pay 48 percent of the total design and construction costs.

The following text shall be added to page 4.2-22, after Table 4.2-3:

Railroad Crossings

There are eight railroad crossings in the vicinity of the proposed project, three on Louise Avenue, two on Lathrop Road, one on Yosemite Avenue, one on Airport Way, and two on McKinley Avenue. As proposed, the project will have a singular access point at Louise Avenue. The driveway will operate as a signalized intersection, thereby metering the flow of traffic onto area streets. Vehicles entering Louise Avenue from the site either could turn right (driving through two railroad crossing) or left (driving through one railroad crossing), or travel down McKinley Avenue (driving through one railroad crossing). Vehicles may be required to drive through the Yosemite Avenue crossing to access State Route (SR) 120. Vehicles turning left (north) on Airport Way would drive through that railroad crossing. Because of the street layout and expected traffic patterns, the two crossings on Lathrop Road are not likely to be regularly utilized as a result of the proposed project.

The following text shall be added to the end of page 4.2-33:

Impact 4.2-D:	**Increased traffic from the AIDP on area railroad crossings may increase wear-and-tear of railroad crossings' infrastructure. (Less Than Significant Impact)**

New development will not only contribute to increased traffic volumes on streets and intersections but also on the railroad crossings mentioned above. This could lead to unsafe conditions at these crossings if not improved to support the additional traffic. The railroad crossing on Lathrop Road is not likely to be affected by the project. The State Public Utilities Commission (PUC) is responsible for regulating railroad safety. To address railroad crossing safety, the applicant will consult with the State Public Utilities Commission prior to building permit issuance to determine the extent of impact on railroad crossings, unsafe conditions, and appropriate improvements. Safety factors include grade separation for major thoroughfares, improvements to existing at-grade railroad crossings and appropriate fencing of the project site.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
Implementation of the proposed project would not result in a significant impact related to the wear of railroad crossings.

Impact 4.2-E: The lack of fencing of the project site along the railroad right-of-way could leave tracks exposed to pedestrians, which would also represent a safety issue associated with the AIDP. (Less Than Significant Impact)

An existing railroad line is located in proximity to the project site along its northern and western boundary. Project plans include perimeter fencing, which will serve to protect pedestrian traffic generated by the project from rail activity. Therefore, implementation of the AIDP would not result in significant pedestrian safety impacts associated with nearby railroad operations.

Mitigation Measures
No mitigation measures are required.

Level of Significance After Mitigation
Implementation of the proposed project would not result in significant pedestrian safety impacts associated with railroad operations to the north of the site.

The following text shall be added to page 5-14 after table 5-5:

The project will be built in two phases. Phase one will include the construction of 397,774 square feet (sq.ft.) of warehouse space to be completed in the year 2005, and phase two will include the remaining 1,006,909 sq.ft. to be completed in 2006. This analysis provides for estimated emissions (reactive organic gases -- ROG, nitrous oxide -- NO_X, and particulate matter -- PM_{10}). Also include is the analysis of regional mobile source impacts considering trip rates, acres, total trips, trip types and vehicle fleet mix for the proposed phased construction years. URBEMIS2002 software was used to conduct this analysis.

Results of the 2005 phase one and 2006 phase two regional mobile source analysis and the area source operations analysis for the Project are reflected in Table 5-5 below. Specifically, year 2006 emissions projection results indicate that emissions associated with the Project will exceed District Interim Emissions Thresholds of 10 tons per year for ROG and NO_X.

Table 5-5
Project Phase Emission
2005 and 2006

Land Use	Sq. Ft.	ROG	NO_X	PM_{10}
Area Source Emission (tons per year)				
Phase 1 – Industrial Park	397,774	0.02	0.15	0.00
Phase 2 – Industrial Park	1,006,909	0.02	0.15	0.00
Operational Emissions (tons per year)				
Phase 1 – Industrial Park	397,774	6.22	8.55	6.22
Phase 2 – Industrial Park	1,006,909	12.73	16.98	13.13
Total Emissions	**1,404,683**	**18.99**	**25.83**	**19.35**

The analysis of the Project for the year 2005 and 2006 indicates that the project will exceed the San Joaquin Valley Air Pollution Control District's level of significance criteria of 10 tons per year for both ROG and NO_X. The exceedence occurs as a result of the operational emissions from travel to and from the site. Transportation related mitigation measures listed in the Air Quality Impact Assessment for this project, and included in the Draft EIR, would mitigate impacts from project-related traffic. Mitigation is also provided in the Air Quality Impact Assessment and Draft EIR to offset traffic-related emissions by implementing other energy saving techniques on-site.

The following text shall be included on the bottom of page 3-2

3.5.2 Regional Agencies

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has recently become more stringent about requiring a Hazardous Risk Assessment (HRA) for most new development projects. In response to the potential for increased hazards from diesel trucks, SJVAPCD may require an HRA for this project.

The following table shall replace Table 4.2-4 on page 4.2-23:

Table 4.2-4: Site Trip Generation

Land Use	Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting	Total
Warehousing	6,967	518	114	632	172	544	716
Source: Kimley-Horn and Associates, Inc., May 2003							

The mitigation measures on page 4.3-11 shall be revised as follows:

4.3-C-4: Install energy efficient lighting. Space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements. Overall project design shall include an increase of Title 24 requirements by a minimum of 15 percent.

4.3-C-6: Provide pedestrian/transit oriented project design, including bus shelters and turnouts with benches.

4.3-C-8: Contribute towards TCM implementation programs, including the provision of parking for carpools.

The following shall be included on the bottom of page 4.3-11.

Impact 4.3-D: Operation of the project will most likely involve the use of diesel trucks, which have greater and more toxic emissions than do passenger vehicles. (Less Than Significant Impact)

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has recently become more stringent about requiring a Hazardous Risk Assessment (HRA) for most new development projects. In response to the potential for increased hazards from diesel trucks, SJVAPCD may require an HRA for this project. Prior to tenant improvement approval, the applicant will coordinate, in consultation with the City, with the SJVAPCD on the need to prepare an HRA. If an HRA is warranted, the applicant, in consultation with the City, will coordinate with the SJVAPCD to review the appropriate methodology for estimating toxic risk.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Implementation of the proposed project would not result in significant toxic emission impacts associated with diesel truck emissions.

The following sentence has been added to the third paragraph on page 4.2-24:

It is important to note that this scenario does not include the trips generated by the project; rather, it represents projects already approved that will generate traffic in the project area (namely, the Villa Ticino project).

Exhibits 4.2-7, 4.2-8, and 4.2-9 have been renamed to more accurately reflect their meaning and the associated text has been modified, thereby reducing any potential confusion on the part of the reader.

Exhibit 4.2-7 has been renamed Approved Development No Project Generated Traffic Volumes.

Exhibit 4.2-8 has been renamed Project Development Generated Traffic Volumes (this also represents the illustrative exhibit of project trip generation), and

Exhibit 4.2-9 has been renamed Approved Development Plus Project Development Generated Traffic Volumes.

The following has been added as the last paragraph on page 3-2 of the Draft EIR:

South San Joaquin Irrigation District. The applicant is required to obtain approval from the South San Joaquin Irrigation District to discharge stormwater into the French Camp Outlet Canal (FFOC), which is owned and maintained by the district.

Table 4.3-3 on page 4.3-3 shall be replaced as follows:

Table 4.3-3: Regional and Area Source Emissions

Land Use	Units/Sq. Ft.	ROG	NOx	PM_{10}
Regional Mobile Source Emissions (lbs. Per day) [1] Warehouse	1,404.68 x 10^3 sq. ft	18.27	13.87	3.15
Area Source Operations Emissions (lbs. per day)[2] Warehouse	1,404.68 x 10^3 sq. ft	0.08	0.01	0.00
Total Emissions (lbs. Per day) Warehouse	1,404.68 x 10^3 sq. ft	18.35	13.88	3.15
Total Emissions (tons per year) Warehouse	1,404.68 x 10^3 sq. ft	3.04	2.95	0.57

Methodology for operating emissions was provided from SCAQMD CEQA Air Quality Handbook.
[1] Mobile Sources Emissions calculated using URBIMIS 2001 model.
[2] Area Source Emissions include Stationary Sources.
Source: VRPA Technologies, May 2004.

As mitigated, however, the AIDP will not result in emissions that exceed the established SJVAPCD interim thresholds detailed in Table 4.3-2.

Impact 4.4-A on page 4.4-7 shall be replaced as follows:

Impact 4.4-A:	**Implementation of the AIDP is not consistent with the relevant noise goal and policies of the Manteca General Plan Update 2023. (Significant Unavoidable)**

The following text shall be added to the bottom of page 4.4-8:

Impact 4.4-D:	**On-site noise generators will increase noise levels in the vicinity of the project. (Less Than Significant Impact)**

Noise sources associated with the AIDP include parking lot activity (e.g., vehicle circulation, engines starting, door slams), truck delivery and loading dock activity. From off-site locations, noise from parking lot activity would be inaudible over the traffic noise on Louise Avenue. Noise from other on-site sources would be occasionally audible, at most, over background traffic. It is projected that the noise from these sources would reach maximum levels of 75 dBA at the site boundary with typical levels 10 to 20 dBA lower.

The design of the project, specifically the truck dock located behind the proposed buildings, typically will provide a minimum noise attenuation of 20 dBA for receptors in the project vicinity based on the size and height of the buildings. Given the absence of noise-sensitive receptors in the immediate project vicinity, and distance attenuation and barrier attenuation from the proposed project design features, intermittent noise levels at nearby residences would be reduced to less than significant levels at the residences nearest to the project site. The project would not result in significant noise impacts from on-site sources.

Mitigation Measure
None required.

Level of Significance After Mitigation
Less than significant.

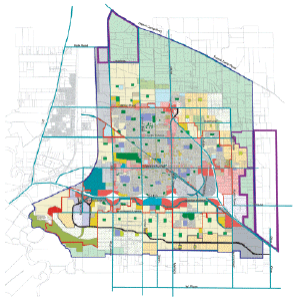
B-2: Mitigation Monitoring and Reporting Plan

Mitigation Monitoring and Reporting Program
for the
City of Manteca
Assieh Industrial Development Project

State Clearinghouse No. 2003052069

October 2004

Prepared for:



City of Manteca
Community Development Department
1001 West Center Street
Manteca, CA 95337
Contact: Mr. Benjamin Cantu, Advanced Planning Manager
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Prepared by:

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TABLE OF CONTENTS

Section 1: Introduction 1

Section 2: Project Management 2

Responsibilities 2
General Procedures 2

Section 3: Mitigation Monitoring Matrix 3

LIST OF TABLES

Table 1: City of Manteca AIDP Mitigation Monitoring Program 4

SECTION 1:
INTRODUCTION

Section 21081.6 to the State of California Public Resources Code requires a Lead or Responsible Agency that approves or carries out a project where an Environmental Impact Report (EIR) has identified significant environmental effects to adopt a "reporting or monitoring program for adopted or required changes to mitigate or avoid significant environmental effects." The City of Manteca Community Development Department is the Lead Agency for the Assieh Industrial Development Project (AIDP) EIR and therefore, is responsible for implementation of the Mitigation Monitoring and Reporting Program (MMRP). The Final EIR has also been prepared for the AIDP, which addresses potential environmental impacts and where appropriate, recommended measures to mitigate these impacts. As such, an MMRP is required for the EIR to ensure that all relevant mitigation measures that have been adopted are subsequently implemented.

Section 2 of this document describes the roles of responsible parties in implementing and monitoring the adopted mitigation measures, and generally describes the program procedures.

Table 1 in Section 3 of this document includes the list of mitigation measures and identifies the timing of the implementation or verification of each measure, the method of verification, the party responsible for verifying that the measure is complete, and the party responsible for implementing mitigation. The City and/or project applicant are responsible for the implementation of each measure, and the City representative is responsible for verifying that the measure has been satisfactorily completed, and/or written evidence has been submitted to the City that verifies that the measure has been satisfactorily completed.

SECTION 2:
PROJECT MANAGEMENT

RESPONSIBILITIES

The MMRP for the AIDP will be in place through construction of the project and/or until all mitigation measures are implemented. The Community Development Department of the City of Manteca is the Lead Agency for the project. If required, the City will be responsible for designating another agency, such as the Regional Water Quality Control Board (RWQCB), to take responsibility for implementation of the MMRP, or portions of the MMRP, if and when appropriate.

The City of Manteca Community Development Department is responsible for verifying compliance with the mitigation measures and as such, the Community Development Department has the primary role of coordinating the compliance verifications of all other parties. These parties, or designated assignees, are responsible for ensuring that the mitigation measures are completed, and are vested with the authority to act accordingly.

GENERAL PROCEDURES

The Director of the Community Development Department or designated assignee will be responsible for the overall management of the MMRP. Assignments of responsibility are included in Section 3.

The designated "monitor" noted above shall oversee elements of the MMRP and review compliance using procedures developed by the Community Development Department. The designated monitor shall ensure compliance with the adopted mitigation measures and ensure proper action is taken on each measure. If it is found that an adopted mitigation measure is not being properly implemented, the Director of the Community Development Department shall require corrective actions to ensure adequate implementation.

SECTION 3:
MITIGATION MONITORING MATRIX

Table 1 is a matrix of the mitigation measures adopted for the AIDP. The text in the table is organized as follows:

- Column one identifies the section of the EIR in which the mitigation measure is found.
- Column two lists the number and specific text of the mitigation measure.
- Column three lists the method of verifying that the mitigation measure is being implemented.
- Column four lists the timing of the verification that the mitigation measure is implemented.
- Column five lists the party responsible for monitoring and verifying that the measure has been satisfactorily completed. The City position level listed in column four is generally the individual responsible for approving the mitigation measure. However, there may be circumstances that require a higher level of approval within an agency.
- Column six lists the party responsible for implementing and/or funding the mitigation measure.

Table 1: City of Manteca AIDP Mitigation Monitoring Program

EIR Section	Mitigation Measure	Method of Verification	Timing of Verification	Verifying Party	Responsible Party
LAND USE	No mitigation measures necessary.				
TRANSPORTATION AND CIRULATION	**4.2-B-1:**The applicant shall construct a 125-foot eastbound right turn bay at the intersection of Airport Way and Lathrop Road to improve the intersection operation to LOS D in the PM peak hour. The street approach will require widening at the intersection. **4.2-B-2:** The applicant shall construct a 100-foot westbound and a 100-foot southbound right turn bay at the intersection of McKinley Avenue and Louise Avenue to improve the intersection operation to LOS D in both the AM and PM peak hours. The street approaches will require widening at the intersection. **4.2-B-3:** The applicant shall install an 8-phase traffic signal at the intersection of Louise Avenue and the project driveway to improve the operation to LOS C in the AM and PM. Based on the proportion of AIDP traffic compared with Villa Ticino West project, the AIDP project shall pay 52 percent and the Villa Ticino West project shall pay 48 percent of the total design and construction costs.	Site Inspection Receipt of Fees	Prior to the issuance of Building Permits Prior to the issuance of Building Permits	Community Development Department Community Development Department	Developer Developer
AIR QUALITY	**4.3-B-1:** All active portions of the construction site, earthern access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is completed for the day. Where feasible, reclaimed water shall be used.	Review and approval of site plans and specifications and site inspection	During Design Review and ongoing during construction	Community Development Department, Public Works Department and the San Joaquin Valley Air Pollution	Developer

EIR Section	Mitigation Measure	Method of Verification	Timing of Verification	Verifying Party	Responsible Party
	4.3-B-2: All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour averaged over one hour. **4.3-B-3:** All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. **4.3-B-4:** The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass is evident. **4.3-B-5:** Construction site vehicle speeds shall be limited to 15 miles per hour. **4.3-B-6:** If used, petroleum-based dust palliatives shall meet the road oil requirements of the District's rule regarding Cutback Asphalt Paving Materials. **4.3-B-7:** Streets adjacent to the Project site shall be swept as needed to remove silt that may have accumulated from construction activities. The streets are required to be wet prior to or in conjunction with rotary sweeping. **4.3-B-8:** All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications. **4.3-B-9:** During the smog season (May through October) the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time.			Control District	

EIR Section	Mitigation Measure	Method of Verification	Timing of Verification	Verifying Party	Responsible Party
	4.3-B-10: When available, diesel powered or electric equipment shall be utilized in lieu of gasoline-powered engines. **4.3-B-11:** Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways. **4.3-C-1:** Install energy efficient street lighting and parking lot lighting. **4.3-C-2:** Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits. **4.3-C-3:** Implementation of planned street and highway, transit, and bikeway improvements (as may be specified in the Transportation Impact Assessment) adjacent to the Project site as necessary to relieve congestion and reduce idling. **4.3-C-4:** Install energy efficient lighting. Space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements. Overall project design shall include an increase of Title 24 requirements by a minimum of 15 percent. **4.3-C-5:** Install HVAC equipment with a SEER of 12 or greater. **4.3-C-6:** Provide pedestrian/transit oriented project design, including bus shelters and turnouts with benches. **4.3-C-7:** Commit to on-site improvements; bikeways, transit infrastructure, pedestrian	Review and approval of site plans and specifications	During Design Review	Department of Community Development	Developer

EIR Section	Mitigation Measure	Method of Verification	Timing of Verification	Verifying Party	Responsible Party
	enhancements, and secure bicycle parking. **4.3-C-8:** Contribute towards TCM implementation programs, including the provision of parking for carpools.				
NOISE	**4.4-B-1:** All construction shall comply with standard City conditions regarding allowable times of construction, properly operating mufflers, location of staging areas away from sensitive uses where feasible, notification of nearby residents of pile driving, etc. These include the following: • Construction activities shall be limited 7 AM to 5 PM (Monday through Friday), 9 AM to 5 PM (Saturday), and no construction activities on Sunday or holidays for any construction within 500-feet of existing residences; • All internal combustion engines for construction equipment shall be properly muffled and maintained; • Notification of nearby residents (within 500-feet) when pile driving is expected; • A name, address, and phone number of a contact person that will handle noise complaints, shall be posted at the site; • Installation of portable acoustical barriers around pile driving equipment; and • Unnecessary idling of internal combustion engines shall be prohibited.	Review and approval of site plans and specifications and periodic site inspections	Prior to the issuance of Building Permits and ongoing during construction	Public Works Department	Developer
FIRE SERVICES	**4.6.1-B-1:** The AIDP shall pay a fire facility fee, as established by the Fire Department fee schedule, for the construction, staffing, and operation of a new fire station that will service the project site and	Receipt of fees	Prior to the issuance of Building Permits	Public Works Department, and the Fire Department	Developer

EIR Section	Mitigation Measure	Method of Verification	Timing of Verification	Verifying Party	Responsible Party
	surrounding area. **4.6.1-B-2:** The AIDP shall provide for water storage per the design criteria dictated by the Manteca Public Works Department.	Review of site plans and specifications	Prior to the issuance of Building Permits		Developer
WATER SERVICES	**4.6.3-B-1:** The project applicant shall be required to pay a water development fee to assist in the funding of system-wide capacity improvements and offset municipal costs of the expansion of water treatment facilities and delivery systems.	Receipt of fees	Prior to the issuance of Building Permits	Community Development Department	Developer
WASTEWATER SERVICES	**4.6.5-B-1:** Prior to the issuance of building permits, the applicant shall provide verification to the City that there will be adequate wastewater service installed prior to occupancy of the project to serve the AIDP.	Review of site plans and site inspection	Prior to issuance of building permits	Public Works Department	Developer
ENERGY FACILITIES AND SERVICE	**4.6.6-B-1:** Prior to approval of development plans, the applicant shall perform an ALTA Land Title Survey for the purpose of identifying easements that traverse across the project site. **4.6.6-B-2:** Development plans shall provide for unrestricted utility access and prevent easement encroachments that impair maintenance and operation of PG&E facilities. **4.6.6-B-3:** The project applicant shall be responsible for costs associated with the relocation of any existing PG&E facilities that are relocated to accommodate project development.	Review of final site plan, ALTA survey	During design review	Public Works Department	Developer

B-3: City of Manteca Resolution No. R2003-412

RESOLUTION NO. R2003-412

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANTECA CERTIFYING THE GENERAL PLAN 2023 ENVIRONMENTAL IMPACT REPORT AND ASSOCIATED DOCUMENTS

WHEREAS, the City Council of the City of Manteca, at a special meeting held October 1, 2003, held a duly advertised and noticed public hearing on the General Plan 2023 Environmental Impact Report; and

WHEREAS, at the duly advertised public hearing, the City Council received testimony supporting and opposing the Environmental Impact Report from those interested parties.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the City of Council of the City of Manteca that it does hereby take the following action:

- Certify the General Plan 2023 Environmental Impact Report as a legally adequate document;
- Approve the Finding as a Statement of Overriding Considerations as Outlined in Exhibit A that the benefits associated with implementation of the General Plan 2023 will outweigh the negative and unmitigatable impacts on visual resources, agricultural resources, regional air quality, biological resources, population increase and expanded energy sources and infrastructure;
- Accept the General Plan 2023 Mitigation Monitoring Program (on file in the Community Development Department); and
- Finds that the Project Alternatives to the General Plan 2023 are all infeasible as outlined in Exhibit A noted above.

DATED: October 6, 2003
ROLL CALL:
AYES: Councilmembers DeBrum, Harris, Hernandez and Snyder
NOES: None
ABSENT: Councilmember Weatherford
ABSTAIN: None
ATTEST:

JOANN TILTON, CMC
CITY CLERK

VINCENT HERNANDEZ, II
MAYOR PRO TEMPORE

EXHIBIT-A

Findings and Statement of Overriding Considerations

Environmental Impact Report

Manteca General Plan 2023

1. INTRODUCTION

Prior to considering the approval of a proposed project, a Lead Agency must certify that the Environmental Impact Report (EIR) prepared for the project is in compliance with the California Environmental Quality Act (CEQA), *and must make one or more of the following* **"findings"** for each significant impact identified (CEQA Guidelines Section 15091):

a) Changes or alterations have been required in, or incorporated into, the proposed project which *avoid or substantially* lessen the significant environmental effect as identified in the EIR.

b) 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 adopted by such other agency or can and should be adopted by such other agency.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the EIR.

CEQA requires the Lead Agency to balance the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable" (CEQA Guidelines Section 15093 (a)).

The Lead Agency must state in writing the specific reasons to support approval of a project which will result in significant environmental effects identified as not avoided or substantially lessened in the final EIR. Substantial evidence in the public record is required to support such a **"statement of overriding considerations."**

This document presents the "findings" and "statement of overriding considerations" for the City of Manteca General Plan 2023.

EXHIBIT-A

2. FINDINGS

The City Council hereby makes the following findings for each of the significant environmental effects (impacts) identified in the EIR for the City of Manteca General Plan 2023:

A. Aesthetics and Visual Resources

(1) Significant Effect: **Buildout of the proposed General Plan 2023 would degrade the existing scenic vistas found in the General Plan Study Area.**

(a) Finding: The General Plan includes goals, policies, and implementation measures that are intended to protect the open space and visual resources of Manteca, including Resource Conservation Policy RC-P-17 that requires maximizing the potential for open space and visual experiences. However, there are no mitigation measures which will avoid the impact of development on the existing open space vistas of agricultural fields and orchards. The environmental effect would remain significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further lessen the General Plan's effect on existing scenic vistas.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects on existing scenic vistas. These benefits are described in Section 3 below.

(2) Significant Effect: **The existing visual character or quality of the area will be degraded.**

(a) Finding: The General Plan includes goals, policies, and implementation measures that are intended to protect the existing agricultural visual character and quality of Manteca. These include Resource Conservation Policy RC-P-15 that promotes public and private open space within urbanized parts of Manteca to provide visual contract with the built environment. Community Design Goal CD-11 requires retention of visual reminders of the agricultural heritage of the community. Community Design Policies CD-P- 47, 48, and 49 allow for the retention of pockets of agricultural activity and orchard-like landscape corridor plantings. Community Design Implementation Measure CD-I-14 establishes that landscape plantings along SR 99 and SR 120 reflect the natural character of the region in selection of trees and groundcovers. Implementation of these goals, policies, and implementation measures will lessen the impact to the existing agricultural visual character and quality to some extent, but not to a less-than-significant level. The environmental effect would remain significant.

EXHIBIT A

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further lessen the General Plan's effect on existing visual character and quality.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects on existing visual character and quality. These benefits are described in Section 3 below.

B. Agricultural Resources

(1) Significant Effect: **Implementation of the City of Manteca General Plan 2023 (Project) will result in conversion of Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance to non-agricultural use.**

(a) Finding: The Land Use Element of the General Plan directs the major growth area, as defined by the Primary Urban Service boundary, in a manner that avoids Prime Farmlands where feasible. Some areas of Prime Farmlands are within existing urban areas. Land Use Policy LU-P-41 encourages continuation of agricultural uses on lands within the Primary and Secondary Urban Services Boundary lines pending their development as urban uses. Land Use Implementation Measure LU-I-1 requires a growth management system with an objective of conserving viable agricultural and open space lands. Resource Conservation Goal RC-9 promotes continuation of agricultural uses and discourages the premature conversion of agricultural land. Policies RC-P-18 and RC-P-19 support continuation of agricultural uses on lands designated for urban use until urban development is imminent, and provides for an orderly and phased development pattern so that farmland is not subjected to premature development pressure. Implementation of these goals, policies, and implementation measures will lessen the impact to agricultural resources to some extent, but not to a less-than-significant level. The environmental effect would remain significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further lessen the General Plan's effect on agricultural resources.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects on agricultural resources. These benefits are described in Section 3 below.

(2) Significant Effect: **Implementation of the General Plan 2023 will cause a conflict with existing zoning for agricultural use, or a Williamson Act contract.**

(a) Finding: The General Plan's Resource Conservation Element addresses the issue of agricultural zoning and Williamson Act contracts. Policies RC-P-22 and RC-P-26 promote the protection of designated agricultural lands and discourage the cancellation of Williamson Act contracts outside the Primary Urban Service boundary. Implementation Measure RC-I-31 promotes working with San Joaquin County to support continuation of County agricultural zoning. Implementation of these policies and implementation measure will lessen the impact to agricultural zoning and Williamson Act contracts to some extent, but not to a less-than-significant level. The environmental effect would remain significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further lessen the General Plan's effect on agricultural zoning and Williamson Act contracts.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects on agricultural zoning and Williamson Act contracts. These benefits are described in Section 3 below.

C. Air Quality

(1) Significant Effect: **Implementation of the General Plan 2023 could violate air quality standards or contribute substantially to the current nonattainment status for ozone and PM10.**

(a) Finding: The San Joaquin Valley is currently designated as "severe nonattainment" for the state ozone 1-hour standard, and "serious nonattainment" for the federal 1 hour ozone and 24-hour fine particulate matter (PM10) standards. Any additional sources of these pollutants will contribute to this nonattainment status. The Air Quality Element of the General Plan contains goals, policies, and implementation measures which are intended to reduce the contribution of the General Plan to regional nonattainment status for ozone and PM-10. Goals AQ-1, 2,3, and 4 address measures to achieve and maintain ambient air quality standards through transportation planning, alternative modes of transportation, and energy conservation. Policies AQ-P-7, 8, and 9 address reduction of construction dust and vehicle emissions, and minimizing particulate air pollution from woodburning devices and other burning of combustible material. Implementation Measures AQ-I-4, 13, and 14 require construction activity plans that provide dust management measures, sufficient conventional heating devices in all new residences without reliance on

woodburning heating devices, and compliance with EPA standards for woodburning heating devices. Implementation of these goals, policies, and implementation measures may help reduce the contribution of the General Plan to regional nonattainment status for ozone and PM-10, but not to a less-than-significant level. The environmental effect would remain significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further reduce the contribution of the General Plan to regional nonattainment status for ozone and PM-10.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects of the contribution of the General Plan to regional nonattainment status for ozone and PM-10. These benefits are described in Section 3 below.

(2) Significant Effect: **Implementation of the General Plan 2023 would result in a cumulatively considerable net increase in ozone and PM10 air pollutants.**

(a) Finding: Given that the Valley is nonattainment for ozone and PM10, there are no mitigation measures to significantly reduce the cumulative increase of these air pollutants when proposing additional urban development. However, the following policies and implementation measures are intended to reduce the net increase to the region's cumulative air pollution from the General Plan. Air Quality Policies and Implementation Measures AQ-P-2, AQ-I-4, 5, 6 and 7 promote land use planning practices which reduce the need for trips, promote mixed-use development, and locate development near public transportation corridors. Air Quality Policies and Implementation Measures AQ-P-4, 5, and 6, AQ-I-9 and 10 promote transportation planning practices which develop street systems with efficient traffic flow, provide alternatives to the automobile, coordinate public transportation networks, maintain acceptable traffic levels of service (LOS), and install dedicated pedestrian/bicycle pathways connecting adjacent development. Implementation of these policies and implementation measures may help reduce the cumulative net increase to ozone and PM-10 pollutants, but not to a less-than-significant level. The environmental effect would remain significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further reduce the cumulative net increase to ozone and PM-10 pollutants.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects of the cumulative net increase to ozone and PM-10 pollutants. These benefits are described in Section 3 below.

EXHIBIT A

D. Biological Resources

(1) Significant Effect: **Impacts on biological resources from the buildout of the General Plan 2023 may be cumulatively significant.**

(a) Finding: The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) is, in effect, a plan to mitigate both the site specific and the cumulative impacts of individual projects on biological resources within San Joaquin County. If all project proponents opted to participate in the SJMSCP, cumulative effects of the buildout of the General Plan could be mitigated to a less-than-significant level. However, given the voluntary nature of participation in the SJMSCP, the level of significance cannot be mitigated to less than significant. Any project proponent who opts against participating in the Plan will be proceeding under the "project-by-project" evaluation and mitigation process with each permitting agency. Since project-by-project evaluation cannot reasonably foresee the overall effects on biological resources of individual projects under multiple agency control, cumulative impacts may result. General Plan Conservation Resource Implementation Measure RC-I-32 is intended to reduce the cumulative impact by promoting the City's continued support and compliance with the requirements of the SJMSCP when reviewing proposed public and private land use changes. However, since it cannot be assumed that all project proponents will opt to participate in the SJMSCP, the environmental effect must be considered significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measures and alternatives identified in the EIR which could further reduce the cumulative impact on biological resources from buildout of the General Plan 2023.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects of the cumulative impact on biological resources from buildout of the General Plan 2023. These benefits are described in Section 3 below.

E. Population and Housing

(1) Significant Effect: **Implementation of the General Plan 2023 would increase the City's population over existing conditions.**

(a) Finding: There are no specific mitigation measures that will reduce or eliminate the impact of increased population on Manteca and the surrounding area. However, monitoring and regulating growth to a responsible level will maintain the integrity of the community. The environmental effect would remain significant.

EXHIBIT-A

(b) Finding: *Specific economic, legal, social, technological, and other considerations make* infeasible any mitigation measures and the alternatives identified in the EIR which could further reduce the increase in population from buildout of the General Plan 2023.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects of the increase in population from buildout of the General Plan 2023. These benefits are described in Section 3 below.

F. Public Facilities and Services

(1) Significant Effect: **The General Plan 2023 would require expanded energy sources and infrastructure for expanded urban development.**

(a) Finding: The need for expanded energy sources and infrastructure is required with expanded urban development. Public Facilities and Services Goal PF-10 requires that adequate, reliable electric service is made available to all users in the City. Policy PF-P-28 directs cooperation with and encouragement of efforts to expand the opportunities for electric power service in the City. Implementation Measures PF-I-14 and 16 address City participation in electric generation and/or service distribution within the City, and coordination of the planning for utility extension with utility companies. Implementation Measure PF-I-15 encourages energy conservation measures and innovative uses of solar energy, heat recovery, and co-generation in all structural and industrial processes. Implementation Measure PF-I-15 may help reduce the amount of energy and infrastructure needed to serve new urban development in the City of Manteca, but not to a less-than-significant level. The environmental effect remains significant.

(b) Finding: Specific economic, legal, social, technological, and other considerations make infeasible the mitigation measure and alternatives identified in the EIR which could further reduce the amount of energy and infrastructure needed to serve new urban development from buildout of the General Plan 2023.

(c) Finding: Specific overriding economic, legal, social, technological, and other benefits of the General Plan outweigh the significant effects expanded energy sources and infrastructure needed to serve new urban development from buildout of the General Plan 2023. These benefits are described in Section 3 below.

EXHIBIT A

The City Council hereby makes the following findings regarding its consideration of Alternatives to the General Plan 2023.

In order to evaluate the possible environmental impacts resulting from a range of alternatives that could reasonably attain the basic objectives of the General Plan, four (4) alternatives were analyzed in the EIR. These alternatives are:

(1) No Project Alternative No. 1: No Development

(2) No Project Alternative No. 2: Buildout of 1988 General Plan

(3) Higher Density Alternative

(4) Reduced Development Area Alternative

The following is a brief description of each alternative and the reasons why the alternatives were considered and rejected by the City Council for implementation of the General Plan.

A. No Project Alternative No. 1: No Development

Under this scenario, no additional dwelling units are constructed and no additional square footage of non-residential uses in added to the City. Other than maintenance, rehabilitation, and renovation activities (which are not generally defined as "projects" under CEQA), the existing status quo is maintained within the City's corporate boundaries. Since no annexation of unincorporated areas would occur, development within the Sphere of Influence would remain under the jurisdiction of San Joaquin County. It is assumed that development would continue to occur both in County areas, and within those areas located outside the corporate boundaries of the City. This alternative was rejected because it is considered infeasible: it is unreasonable to assume that conditions within the City will be retained as they currently exist.

For the reasons stated throughout these Findings, and particularly as stated in this section and in the Statement of Overriding Considerations, the City Council finds that adoption of the chosen alternative, and not the No Project No. 1: No Development Alternative, is proper and appropriate, and would implement the City's policies in a feasible, balanced manner.

B. No Project Alternative No. 2: Buildout of 1988 General Plan

Under this second "no project" alternative, buildout of the Study Area would occur in accordance with those land use policies contained in the 1988 General Plan. In drawing comparisons between this alternative and other alternatives presented in the EIR, it should be noted that the Study Area addressed in the 1988 General Plan is comparable to the Study Area now under consideration. The Study Area boundary differs primarily along the south edge. Since the retention of the existing land use policies, as presented in the 1988 General Plan, will result in incrementally less development than now proposed under the General Plan 2023, the potential

EXHIBIT A

project-related effects of that action will also be incrementally less than those associated with the proposed project. This alternative was rejected because, although development in the project planning area may be incrementally less, the cumulative impacts of this alternative are assumed to be comparable to those associated with the proposed project (General Plan 2023). This is based upon the assumption that development will occur if there is a market demand, and if it is not built within the City Limits, it will be built in the surrounding County area. It is critical to plan for this development rather than simply allow it to occur.

For the reasons stated throughout these Findings, and particularly as stated in this section and in the Statement of Overriding Considerations, the City Council finds that adoption of the chosen alternative, and not the No Project No. 2: Buildout of the 1988 General Plan Alternative, is proper and appropriate, and would implement the City's policies in a feasible, balanced manner.

C. Higher Density Alternative

This alternative allows the same population projection as the proposed project (General Plan 2023), but allocates less land area to residential land use. This alternative would result in higher density residential development. This alternative assumes that the same number of dwelling units projected in the General Plan 2023 would be developed on twenty percent (20%) less land area, thereby increasing density. These densities fall within the upper range established by the General Plan 2023. This alternative is considered the "environmentally preferred alternative" based on the beneficial effect gained by using less land to accommodate the planned growth. Further comparative analyses leading to this "environmentally preferred alternative" conclusion is discussed on pages 16-8 through 16-13 of the Draft EIR. However, this alternative was rejected for the following reasons:

- The densities resulting from this alternative are approximately twenty percent higher than conventional market-driven housing. The market for such housing has not been tested in the Manteca area.

- The same densities can be achieved through implementation of the General Plan 2023, if accepted by the market.

For the reasons stated throughout these Findings, and particularly as stated in this section and in the Statement of Overriding Considerations, the City Council finds that adoption of the chosen alternative, and not the Higher Density Alternative, is proper and appropriate, and would implement the City's policies in a feasible, balanced manner.

D. Reduced Development Area Alternative

This alternative allocates the land use types and policies in the General Plan 2023 to the land area defined as the Primary Urban Service Area in the 1988 General Plan. Application of the new policies and land use in the 1988 service boundary would result in a reduced development area,

EXHIBIT-A

and less potential development than the proposed General Plan 2023. The 1988 Primary Urban Service boundary and the General Plan 2023 Primary Urban Service boundary cover similar areas; however, the 1998 Service area did not include land in the Southwest Plan Area (west of Airport Way and south of SR 120). Under this alternative, the urban land uses would be reduced from 12,623.7 acres to 8,191.6 acres. This alternative was rejected because the development land area allocated by the General Plan would be reduced by 35%, resulting in less land to accommodate the planned growth.

For the reasons stated throughout these Findings, and particularly as stated in this section and in the Statement of Overriding Considerations, the City Council finds that adoption of the chosen alternative, and not the Reduced Development Area Alternative, is proper and appropriate, and would implement the City's policies in a feasible, balanced manner.

3. STATEMENT OF OVERRIDING CONSIDERATIONS

The City Council hereby finds that the benefits associated with implementation of the General Plan 2023 will outweigh the negative and unmitigatable impacts on visual resources, agricultural resources, regional air quality, biological resources, population increase, and expanded energy sources and infrastructure. Described below are the specific overriding economic, legal, social, technological, and other benefits of the General Plan 2023 which outweigh the significant effects on the environment.

Logical Growth of the City

Manteca has generally grown in a compact pattern around the historic center of the City at the crossroads of Yosemite Avenue and Main Street. Residential neighborhoods have developed within boundaries established by the major streets spaced one mile apart. This General Plan directs land use to continue the historic pattern of compact urbanization. The developed portion of the City should retain its distinct, compact form with clear, well-defined edges.

The expansion of the urbanized area is enabled by the extension of basic public services, notably sewer, drainage and streets. The City plans the extension of these services through periodic preparation of various public facility master plans, such as water, sewer and drainage. These master plans are coordinated through a Public Facilities Implementation Plan (PFIP) that identifies and establishes the funding mechanism for specific capital improvements. The PFIP is a key to implementing the land use goals (Land Use Element) and public facilities goals (Public Services and Facilities Element) of the General Plan.

Community Form, Scale and Identity

The community identity is established by important visual characteristics that provide cues for travelers, as well as residents. Among these are:

EXHIBIT-A

- the scale or size of the City
- well-defined edges and gateways
- an identifiable pattern of streets and land uses
- attractive streetscapes and public places
- notable landmarks, both natural and man-made

Attractive new land uses along the major highways, new landmarks visible from several vantage points throughout the City, and new gateway features along the highways and other major roads at City boundaries can contribute significantly to establishing a strong positive identity for Manteca.

The existing commercial core area should be retained and reinforced as the functional and social center of the City for residents. Urbanization should generally extend outward from this center.

In the future, population increases and a growing regional role for Manteca may generate the need for a second commercial, office, residential, institutional and entertainment core area east of the existing downtown. The Land Use Map identifies such a site designated as Commercial Mixed Use along Austin Road between Yosemite Avenue and the future extension of SR 120. This site would provide a new town center complex that would include employment, high-density residential use, entertainment, and regional retail use under a comprehensive master plan.

Attractive, Sustainable Neighborhoods

Neighborhoods are the fundamental organizing concept for residential land use. The neighborhoods are typically not more than one mile in any dimension to provide a reasonable walking distance from any part of the neighborhood to the schools, parks, and commercial centers.

The land use in each neighborhood is predominantly residential, but will typically include a neighborhood school, parks, and a mixed-use commercial area that includes retail or commercial goods or service facilities.

Preservation of the existing housing and enhancement of existing neighborhoods is important to maintaining the quality of life in the City.

Support of Public Transit and Bicycle and Pedestrian Circulation

High activity areas should be located to facilitate the use of public transit.

The organization of land use and circulation networks should permit and encourage walking and bicycling to major activity centers such as shopping, recreation facilities, and schools.

EXHIBIT-A

Commercial, employment, recreational and institutional land uses should be conveniently located near the residential neighborhoods.

Housing Opportunity

The General Plan responds to the need for diversity in housing opportunity and changes in market demand for housing types in two primary ways. First, the residential density (dwelling units per acre) categories are broadened to provide more flexibility and diversity in the types of dwelling units in each neighborhood. Second, the Land Use Map identifies more sites distributed throughout the community for specific residential categories in order to ensure more diversity in the housing supply.

Employment and Economic Development

During the twenty-year horizon of this General Plan, Manteca will experience economic development that will add to and diversify the local economy. This will consist of additional growth in warehousing and distribution, but should also include significant new components, such as office and service sectors, research and development, and manufacturing.

Increases in population have the potential to drive a demand for new retail establishments and local-serving professional office uses. The range of commercial and professional services will expand as Manteca reaches threshold populations.

The General Plan responds to the needs of economic development by designating locations for:

- warehouse, distribution and manufacturing;
- business park;
- research and development and light manufacturing, and
- a major mixed-use regional retail and service center.

The General Plan also provides two new land use categories not previously used in the General Plan. The newly-established Commercial Mixed Use (CMU) and Business Industrial Park (BIP) categories are intended to expand the opportunities for economic development by providing opportunities to integrate high density residential, office and retail/service uses on a single site.

Live/Work Housing

It is anticipated that the percentage of individuals working at home will increase over the next twenty years. At home workers may include telecommuters, professional services, small service businesses, mail order, and any number of other entrepreneurial endeavors. It is the intent of this General Plan to support such activities. The residential design policies provide the flexibility to include most types of small business within the premises, and the mixed use commercial sites are intended to include services and facilities that would support workers in the neighborhood. Such

support services include technical services, such as copy and secretarial services, teleconferencing centers and day care. The commercial sites will also typically contain coffee shops and plazas that provide a social setting for people who work at home.

Public Services and Fiscal Stability

Growth will provide additional revenue sources, but will also place additional service burdens on the City of Manteca. The challenge is to balance growth with funds for required new services. The Land Use Element provides a mix of land use categories and implementation measures to ensure that the overall balance of land use is sustained over time.

The City will monitor the mix of land use in order to gauge future decisions on land use, public service levels and capital investments.

Access to Open Space

Existing open space is found in the neighborhood parks, a few agricultural areas within and on the perimeter of the urban area, and the utility corridors.

The City is surrounded by agricultural land that provides visual open space on the north, east and south. Agricultural activity has significantly altered most of the natural features that predated the urban development of the area. Consequently, there are no natural drainage ways, significant stands of trees, or other natural features that would guide or provide the core of an open space network within the City.

In the absence of natural features that could define an open space network, the General Plan encourages the creation of a network of open spaces in the storm drainage channels, and naturalized landscaping along major thoroughfares and bike paths. The open drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

Agricultural Productivity

Agricultural productivity will remain a significant element of the economy in San Joaquin County. The General Plan supports the existing level of agricultural production by directing development in a compact, concentric form in order to reduce the demand for new development areas. Existing agricultural activities will be retained within the City where practical.