Initial Study

Challenger School

Berryessa Expansion

PDC11-023 and PD11-022

March 17, 2012

CITY OF SAN JOSE

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Challenger School

Berryessa Expansion

Planned Development (PD) Rezoning (PDC11-023)

and

Planned Development (PD) Permit (PD11-022)

March 17, 2012

CITY OF SAN JOSE

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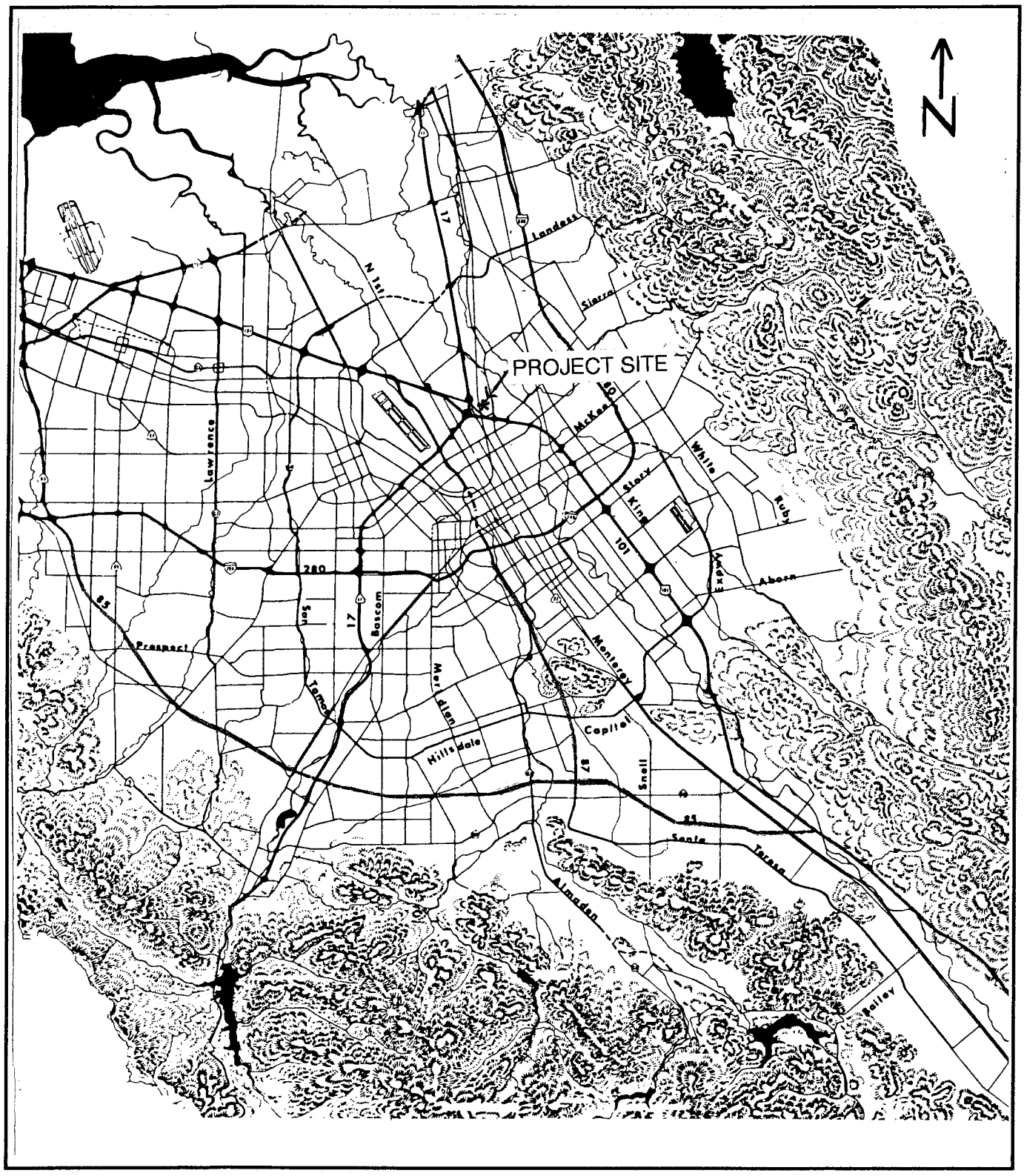
I. PROJECT DESCRIPTION

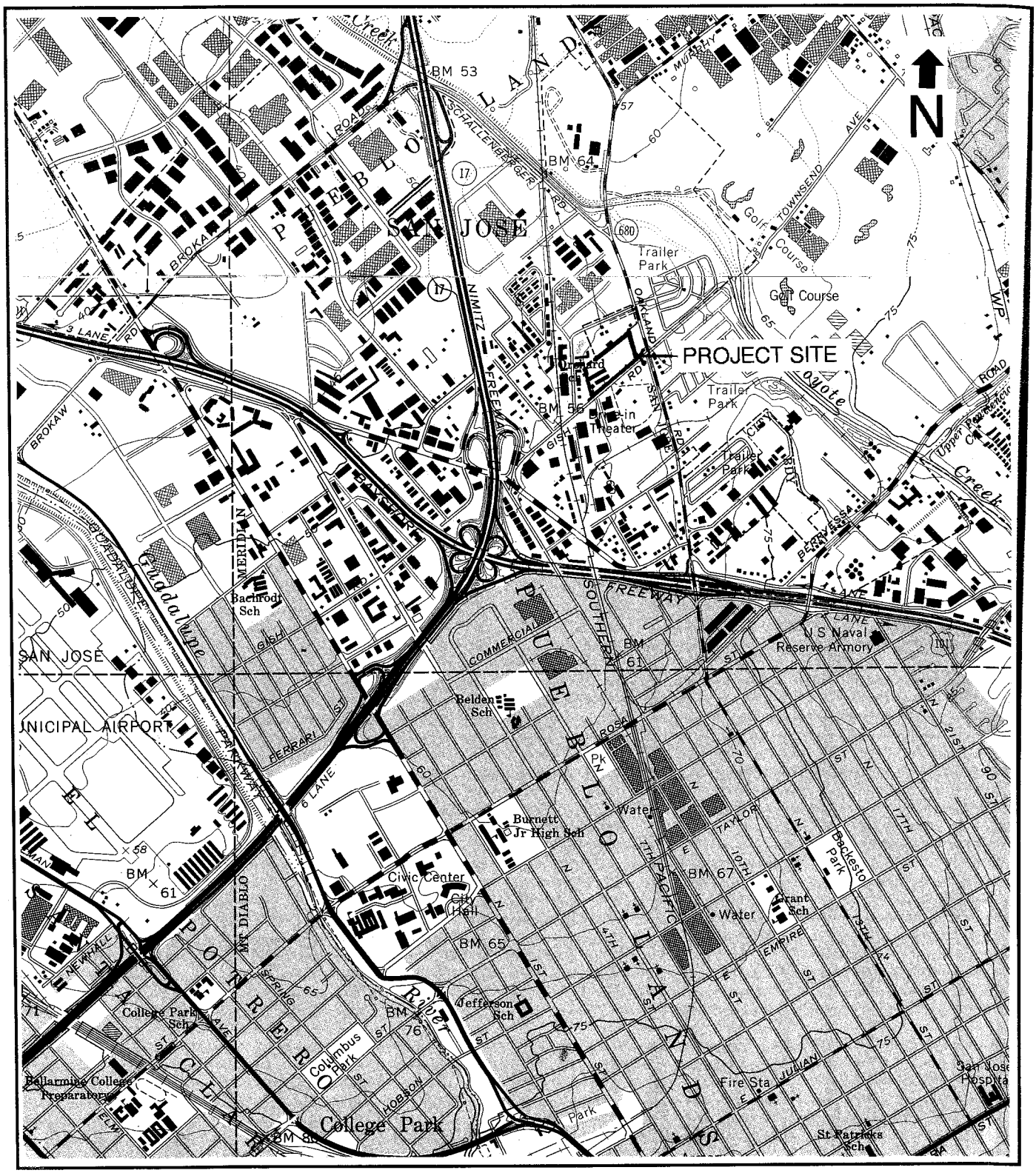
A. GENERAL INFORMATION

Lead Agency Contact:	Jenny Nusbaum, Project Manager City of San Jose Planning, Building and Code Enforcement 200 East Santa Clara Street, 3rd Floor San Jose, CA 95113 408-535-7872 jenny.nusbaum@sanjoseca.gov
Applicant:	Challenger School 9735 South 500 West Sandy, UT 84070 801-599-5588 Attn: Fred Healey fhealey@challengerschool.com
Property Owner:	Babb LLC 9735 South 500 West Sandy, UT 84070
Environmental Consultant:	Mindigo & Associates 1984 The Alameda, Suite 1 San Jose, CA 95126 408-554-6531, (fax) 408-554-6577 rmindigo@aol.com
Name of Project:	Challenger School – Berryessa Expansion
Location and Address:	Northwest side of E. Gish Road, approximately 500 feet southwest of Oakland Road (711 E. Gish Road)
Brief Description of Project:	**Planned Development (PD) Rezoning** and **PD Permit** applications to allow a private school to increase the enrollment to 935 students and add 8 portable classrooms to an existing private school facility on approximately 7.23 gross and net acres
Assessor's Parcel Number(s):	237-04-010



Santa Clara Valley Map

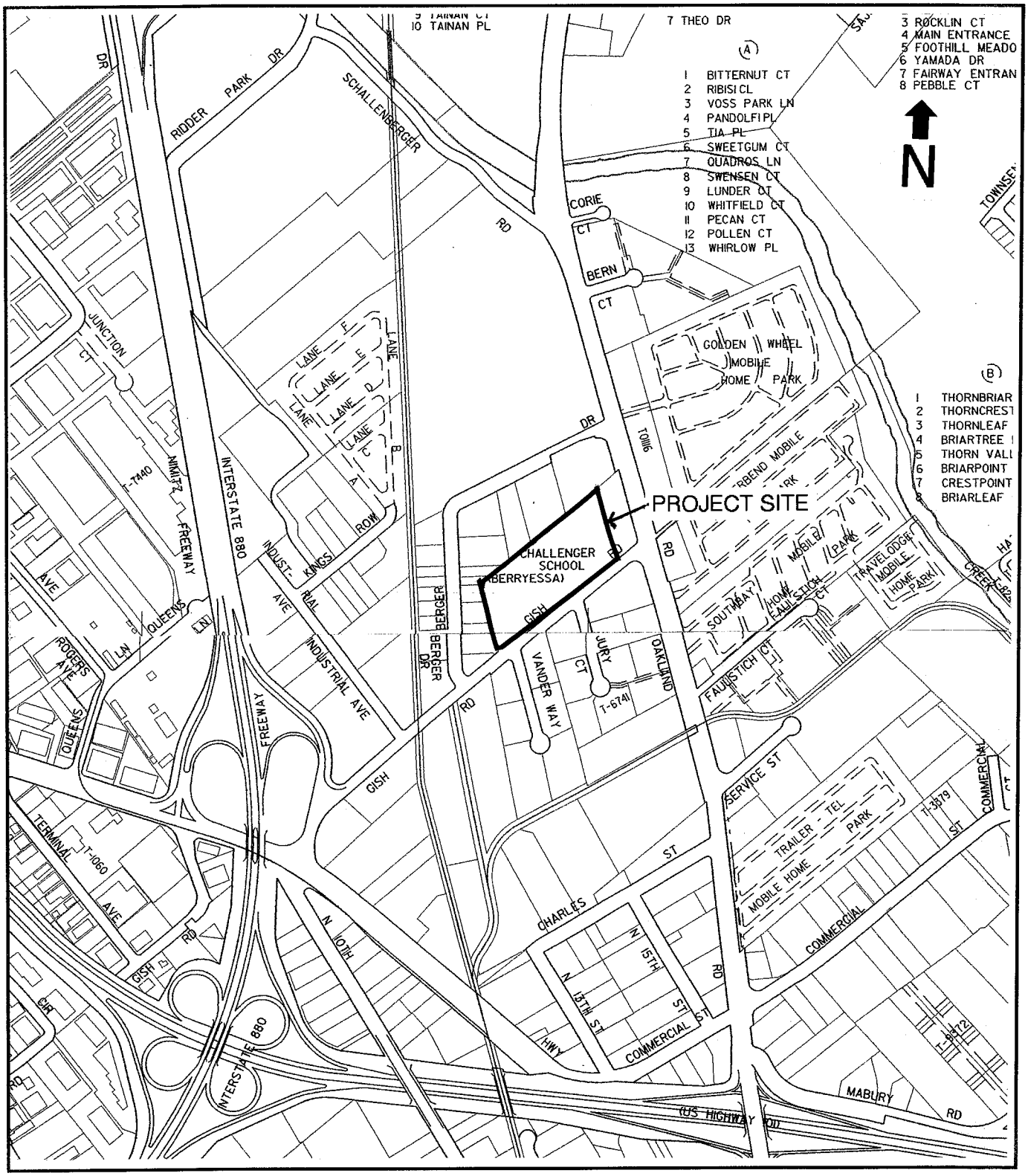
Figure 1



Source: San Jose West and Milpitas Quadrangles (1961, photorevised 1980)

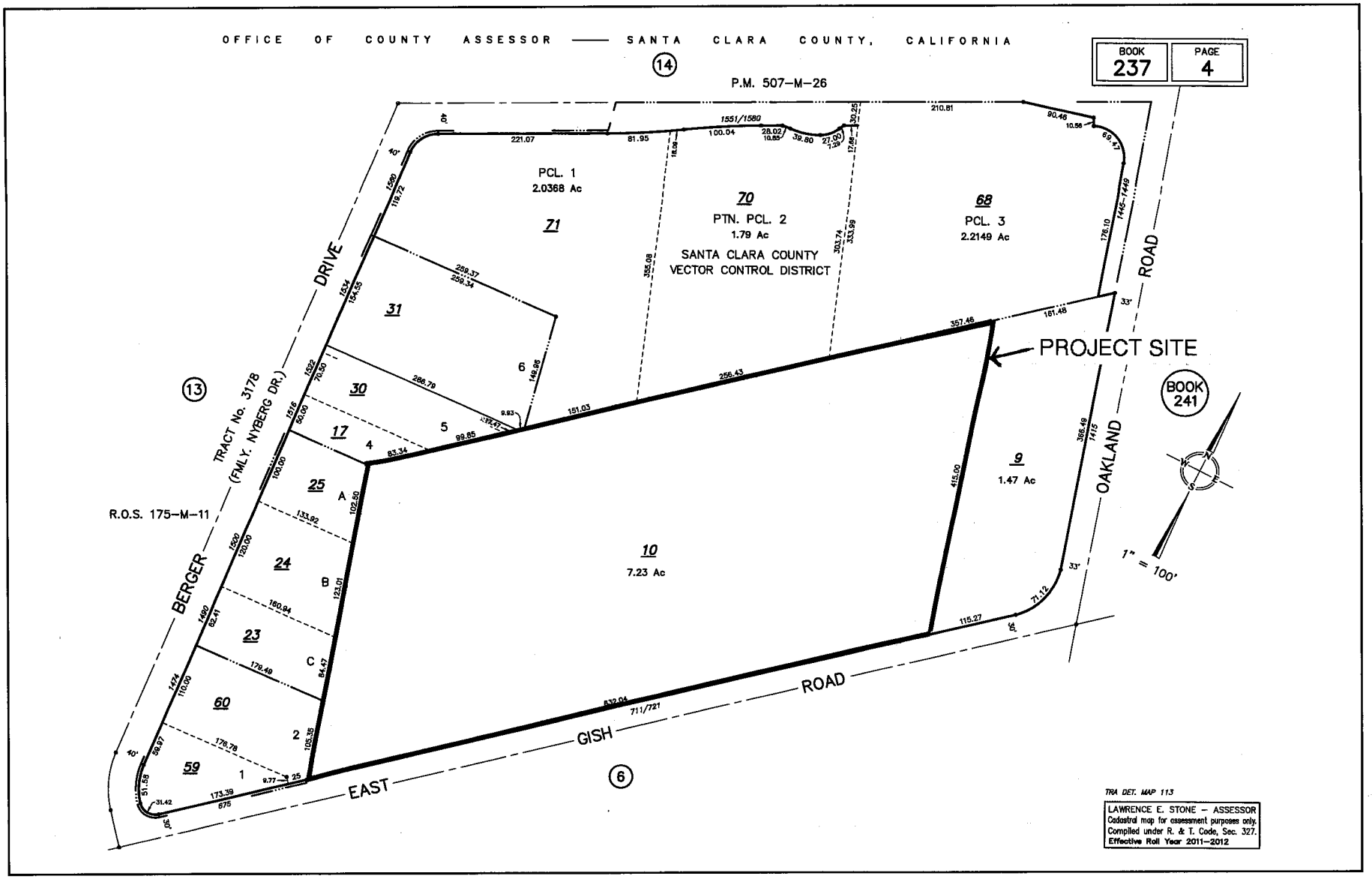
USGS Map

Figure 2



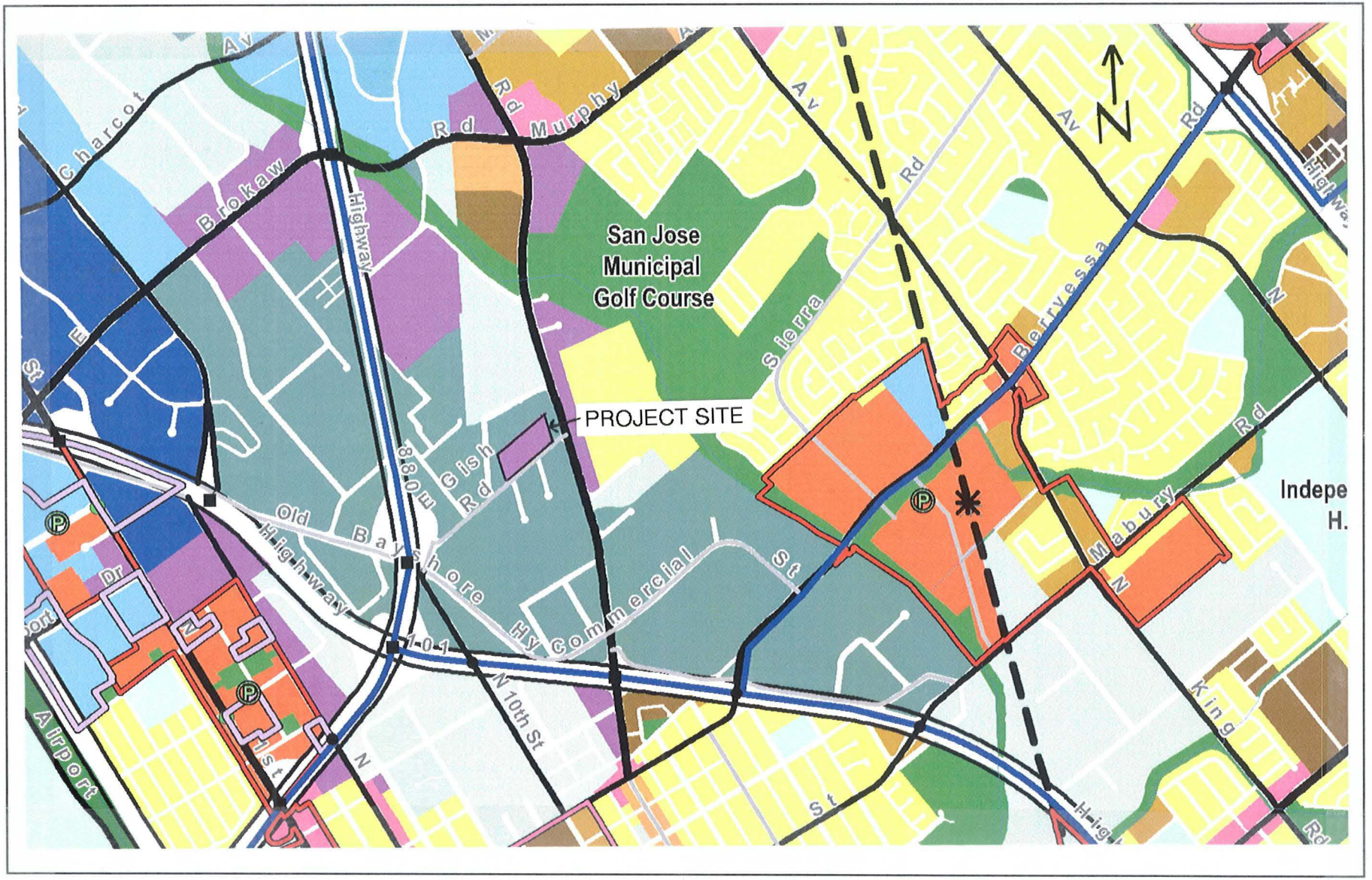
Vicinity Map

Figure 3



Assessor's Parcels

Figure 4



General Plan Map

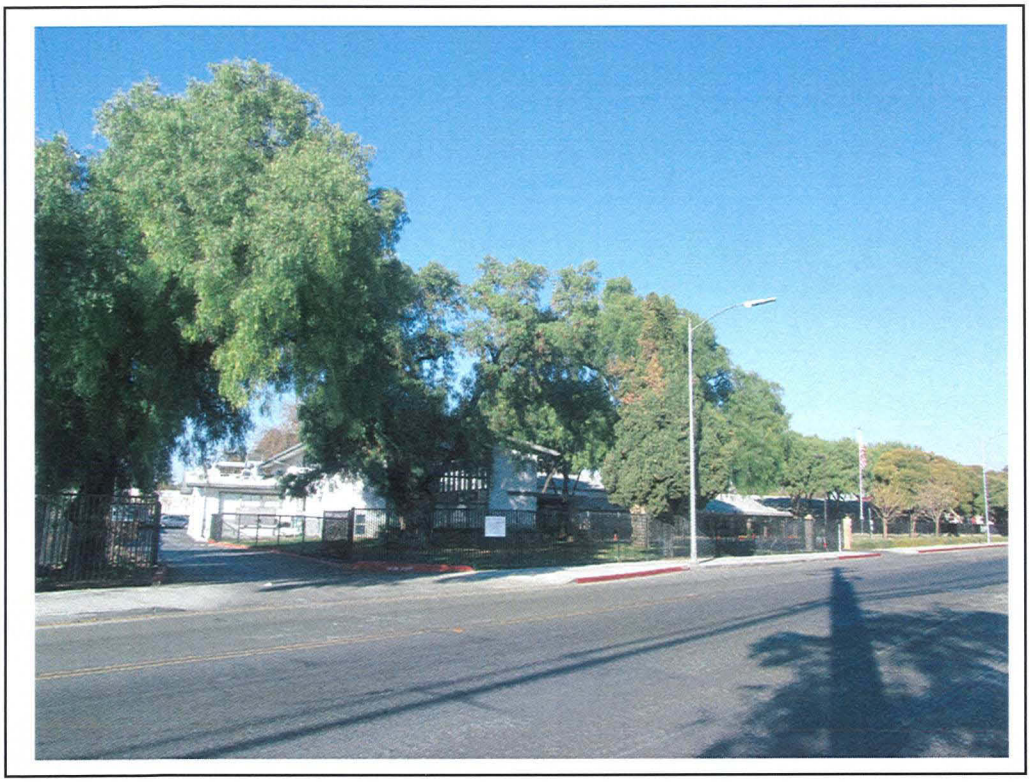
Figure 5

Zoning Map

Figure 6

Aerial Photo of the Site

June 19, 2011 Figure 7



Viewing northeasterly along E. Gish Road from the southwesterly corner.

Viewing southwesterly along E. Gish Road from the southeasterly corner

View of the Site

January 12, 2012 Figure 8

Viewing northerly toward the ball field (future parking area).

Viewing northeasterly along the northerly boundary.

View of the Site

January 12, 2012 Figure 9

Viewing southerly toward the existing building to be removed.

Viewing northerly toward the existing portable classrooms to be removed.

View of the Site

January 12, 2012 Figure 10

B. PROJECT OBJECTIVE

The objective of this project is to expand the Challenger School facilities at their Berryessa site, in accordance with the goals and policies of the City of San Jose.

C. BACKGROUND

The project site is the site of the former Orchard Elementary School within the Orchard School District. Orchard School was in operation at this location from 1928 through 1998. Challelnger School has been in operation on the site since 1998 and has a current enrollment of 775 students. An administration building was constructed on the northerly corner of the site in 2010.

D. DESCRIPTION

EXISTING USE

The project site is currently a developed school facility.

PD REZONING and PD PERMIT

The project is a **Planned Development (PD) Rezoning** from A(PD), Planned Development District, to A(PD) or CIC(PD), Planned Development District, and a **PD Permit** application to allow Challenger School to add classrooms and students. Site improvements include 8 portable classrooms, driveways and parking, and landscaping. The Project Data table and reduced copies of the project plans follow, Figures 11 through 17. Full size copies are available for review at the City of San Jose Planning Division.

School Operations

Challenger School has a total of 775 students (preschool through 8th grade) and 70 employees at this location. The project would increase these totals to 935 (+160) students and 76 (+6) employees. The school is regularly open from 7:00 a.m. to 6:00 p.m. Monday through Friday. Classes run from 8:30 a.m. to 3:30 p.m., with morning and after-school care during the remainder of the day. Evening events throughout the year include three Back-to-School nights in September; a Christmas concert in December; two Spring programs in May; and 8th-grade graduation in June. In addition, there is a Saturday daytime open house and a Saturday morning testing day in February.

Landscaping

Landscaping and trees are located around the school buildings. New landscaping is planned around the new portables and parking areas. The landscaping will include a mixture of trees, shrubs and groundcover, as shown on the following Planting Plan, Figure 17.

Access

Existing access to the school is from E. Gish Road via one inbound driveway located at the eastern end of the project site and one outbound driveway located toward the western end.

Faculty and staff have a separate full access driveway located west of the outbound-only driveway.

Since all drop-off/pick-up activities will continue to occur onsite, adequate vehicle queuing space must be provided onsite. The loading areas consist of two 1,100-foot lanes, for a total of 2,200 feet of available vehicle queuing space. Based on existing observations, the entire student loading area is utilized during the a.m. drop-off period, momentarily backing up westbound traffic on Gish Road; while there is ample vehicle queuing space within the student loading area during the 3:00 p.m. peak student pick-up period. The additional 160 students require 400 feet of additional storage, or 200 feet more per lane than what currently exists, equating to approximately 16 vehicles added to the peak vehicle queue. Since there is no way to provide the additional vehicle storage that would be required onsite, school start times for grades 4-8 and grades 1-3 will be further staggered to allow more vehicles to clear the site before the next group arrives. This would result in adequate onsite vehicle storage at all times.

Parking
Off-street parking for the project is provided in two parking areas: one along the westerly boundary and one along the easterly boundary. There is a total of approximately 83 off-street parking spaces on the site and the project would add approximately 26 spaces for a total of approximately 109 spaces; a minimum of one space per teacher and employee.

Exterior Lighting
Standard electroliers using low pressure sodium vapor lights in accordance with the City's Outdoor Lighting on Private Developments Policy are currently located along E. Gish Road. Downward-directed lighting fixtures with low-elevation standards are provided within the project interior. All exterior lighting is subject to the City's Outdoor Lighting Policy 4-3.

Utilities
All utilities required to serve the project, including sanitary sewer, wastewater treatment, water supply, storm drainage, natural gas, electricity and telephone, as further described in the following Utilities and Service Systems section, currently exist on the site.

Demolition
The project proposes the demolition of an existing building, portable classrooms and a garage, as shown on the following Demolition Plan, Figure 11.

Hazardous Materials
Hazardous materials other than those for normal school and landscaping use will not be used as a part of the operation of any of the establishments on the project site. Hazardous materials are used in industrial operations on surrounding sites. The school has Emergency Response Procedures that are revised when new development or other changes to the site layout are approved by the City of San Jose.

Grading
Minor grading is proposed for the project improvements.

Water Quality Treatment
In accordance with the Santa Clara Valley Urban Runoff Pollution Prevention Program NPDES MS4 permit and City Council Policies 6-29 and 8-14, the project includes bioretention areas, as further discussed in the following Hydrology and Water Quality section.

Tree Removal
There are a number of existing trees onsite, five (four Ordinance-sized) of which are to be removed, as further discussed in the following Biological Resources section.

Public Improvements
There are no public improvements with this project.

Public Land Reservations
There are no public land reservations with this project.

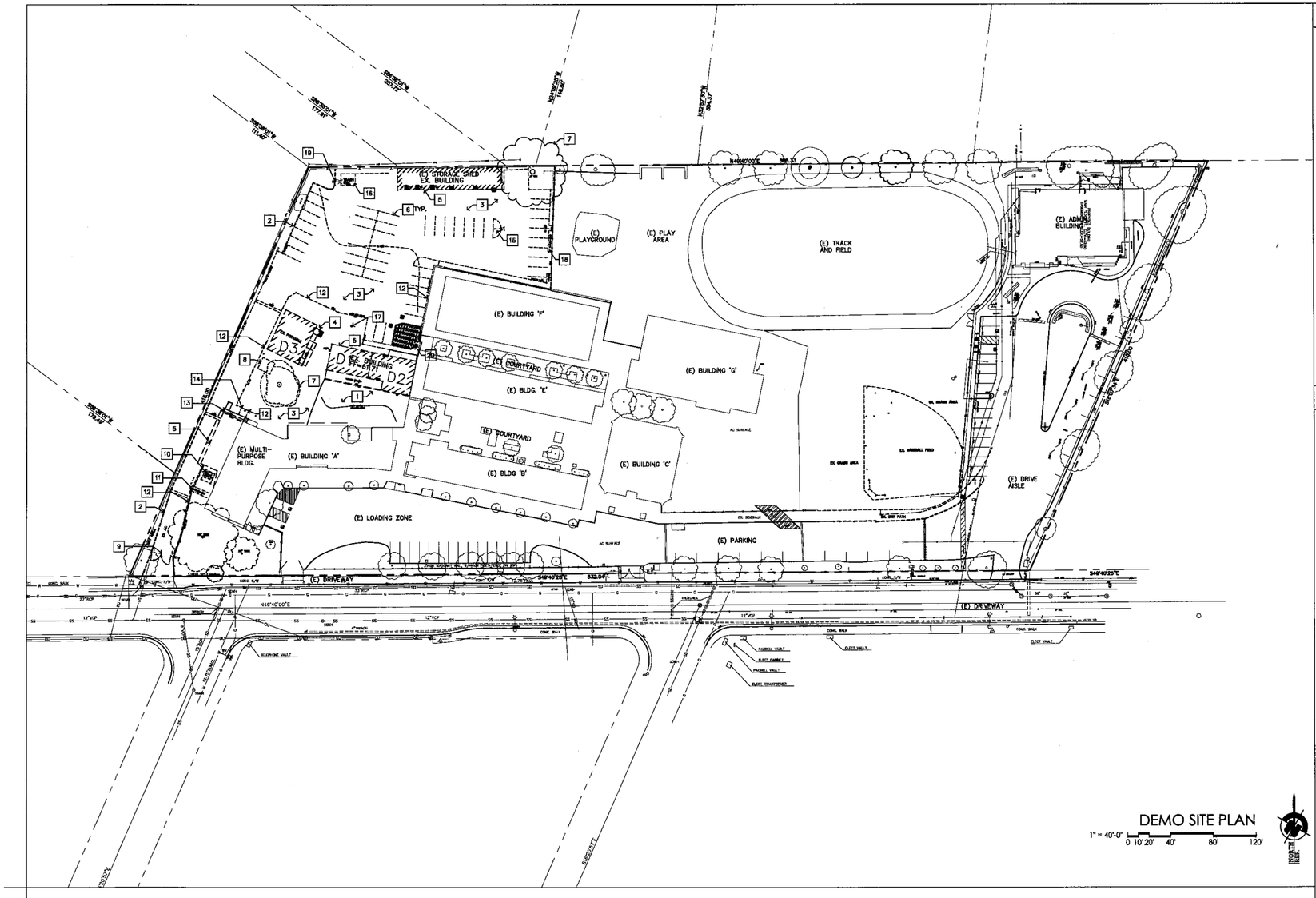
Other Related Permits
In addition to the proposed **Planned Development (PD) Rezoning** and **PD Permit**, other related permits to be obtained from the City of San Jose and/or any other public agency approvals required for this project by other local, State or Federal agencies are as follows:

Agency	Permit / Approval
City of San Jose	Grading Plan, Building Permit(s)

Community Meeting
A community meeting to discuss the proposed project with neighbors was held on February 23, 2012. No one from the community attended, although an email was submitted by a neighbor who could not attend that expressed concerns about additional traffic on Gish Road.

Table 1. Project Data

Category		Figure
Gross and Net Acreage		7.23
Number of Classrooms		
Existing		31
New		8
Removed		-5
Total		34
Number of Proposed Students		
Preschool		192
Elementary		743
Total		935
Increase in students		+160
Number of Proposed Employees		76
Increase in employees		+6
Coverage Factors	Acres	Percent
Buildings	1.25	17
Paved Areas	2.03	28
Landscaping / Open Space	3.95	55
Total	7.23	100
Impervious Areas (Disturbed Area)	Square Feet	Percent
Existing	46,915	59
Project	55,279	70
Start/Completion Dates		Summer, 2012 / Fall, 2012



DEMO SITE PLAN

1" = 40'-0" 0 10' 20' 40' 80' 120'

SHEET NOTES

1. REMOVE PORTION OF LANDSCAPING AS REQ'D. FOR NEW LANDSCAPE & AC PAVING, VERIFY DIMENSIONS PER NEW SITE PLAN
2. REMOVE CONCRETE CURB AS REQUIRED FOR NEW DRIVE ENTRY TO NEW PARKING LOT
3. REMOVE AC PAVING AS REQ'D FOR NEW LANDSCAPING, VERIFY DIMENSIONS PER NEW SITE PLAN
4. REMOVE PORTABLE STRUCTURE, FOUNDATION, RAMPS AND DISCONNECT ALL UTILITIES AND PREP FOR NEW PORTABLE STRUCTURES
5. REMOVE STRUCTURE, FOUNDATION, RAMPS, COVERED WALKWAYS AND DISCONNECT ALL UTILITIES AND PREP. AS REQ'D. FOR CONSTRUCTION
6. REMOVE PARKING STRIPING AS REQ'D. FOR NEW CONSTRUCTION
7. REMOVE TREE AS REQ'D., ANY REMOVAL OF TREE OVER 18"ø SHALL BE UNDER A SEPARATE PERMIT, SEE ARBORIST REPORT
8. REMOVE CONCRETE PAD AND SAND PIT FOR NEW LANDSCAPING.
9. REMOVE FENCE AND GATE
10. RELOCATE (E) AIR CONDITIONER AND REMOVE (E) CONCRETE PAD, SEE (N) SITE PLAN
11. REMOVE (E) CONCRETE WALKWAY
12. REMOVE, STORE AND REUSE (E) CHAIN LINK FENCE
13. REMOVE (E) CONCRETE RAMP
14. REMOVE (E) CONCRETE STRUCTURE AND CAP (E) UTILITY CONNECTIONS
15. REMOVE (E) PARKING LIGHT AND POST
16. REMOVE (E) CONCRETE TRASH ENCLOSURE
17. REMOVE (E) POLE
18. REMOVE (E) PLANTER
19. (E) LIGHT POST TO REMAIN
20. STORE AND REUSE (E) FENCE GATE

GENERAL NOTES

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION
2. NOTIFY ARCHITECT OF ANY INCONSISTENCY WITH DRAWINGS PRIOR TO ORDERING SUPPLIES OR COMMENCING WORK.
3. PROTECT FROM DAMAGE DURING DEMOLITION ALL MATERIALS NOT TO BE REMOVED OR DEMOLISHED
4. PATCH, REPAIR ALL AREAS AS REQ'D DAMAGED DUE TO CONSTRUCTION, MATCH (E) OR APPROVED EQUAL (U.O.N)
5. CAP ALL UNUSED CONDUITS & PIPING AS REQ'D FOR NEW CONSTRUCTION.
6. REMOVE DEBRIS FROM PREMISES DAILY AND ACCORDING TO BUILDING MANAGEMENTS REQUIREMENTS.
7. SCHEDULE ALL WORK SO AS NOT TO INTERFERE WITH OWNERS NORMAL BUSINESS OPERATIONS, COORDINATE SCHEDULE WITH OWNER AS REQ'D.

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CHALLENGER SCHOOL
BERRYESSA EXPANSION
CLASSROOM EXPANSION & SITE IMPROVEMENTS
711 E. GISH ROAD, SAN JOSE, CALIFORNIA 95112

REVISIONS
02.09.12 BUILDING SUBMITTAL

DEMO SITE PLAN & NOTES

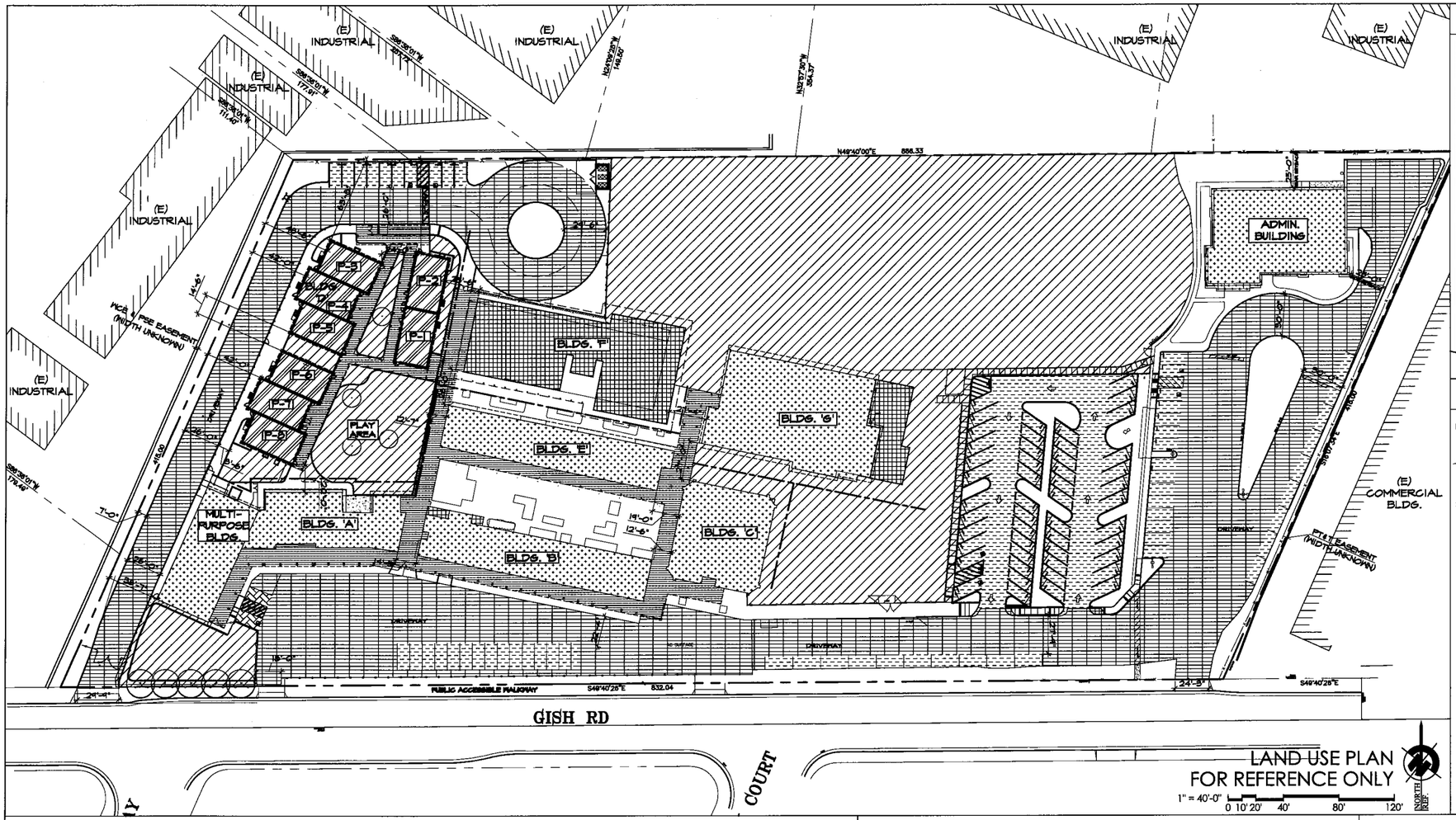
Date
Scale 1"=40'-0"
Drawn
Job 1012-4.4.1
Sheet A1.1

PLAN CHECK SUBMITTAL

PLOTTED:

1012-4.2_Challenger Berryessa Bldg.\arch\building\

Figure 11



LEGEND

- [E] SCHOOL BUILDING
- PROPOSED NEW BUILDINGS
- [E] AND [N] COVERED WALKWAYS
- [E] AND PROPOSED PLAY AREAS
- [E] AND [N] DRIVEWAYS
- [E] AND [N] PARKING
- FUTURE BUILDINGS/ EXPANSION

DEVELOPMENT STANDARDS

1. ENVIRONMENTAL MITIGATION REQUIREMENTS: ENR WILL BE PROVIDED BY ENVIRONMENTAL CONSULTANT, INCLUDING TRAFFIC REPORT
2. WATER POLLUTION CONTROL: A WATER CONTROL PLANT IS REQUIRED FOR ALL PROJECTS CREATING, REPLACING OR EXPANDING IMPERVIOUS SURFACE BY 10,000 S.F. OR MORE.
3. PRIVATE INFRASTRUCTURE STANDARDS TO MEET OR EXCEED PUBLIC IMPROVEMENT STANDARDS

LAND USE PLAN
FOR REFERENCE ONLY
1" = 40'-0" 0 10'20' 40' 80' 120'

NORTH REF.

SQUARE FOOTAGE

	EXISTING (S.F.)	DEMO (S.F.)	PROPOSED NEW (S.F.)	BLDG. HEIGHT
STORAGE SHED	1,936	1,936	-	-
MULTI-PURPOSE BLDG.	4,555	1,056	-	22'-0"
BLDG. 'A' CLASSROOM	3,788	-	-	20'-0"
BLDG. 'B' CLASSROOM	5,157	-	± 292	17'-0"
BLDG. 'C' ADMIN/CLASSROOM	4,642	-	-	19'-0"
BLDG. 'D' PORTABLES	3,409	3,409	7,680	14'-10"
BLDG. 'E' CLASSROOM	4,919	-	-	17'-0"
BLDG. 'F' CLASSROOM	7,374	7,374	± 8,594	23'-0"
BLDG. 'G' CLASSROOM	8,166	-	± 1,828	24'-6"
ADMIN. CRO		-	-	44'-0"
-BASEMENT	6,048	-	-	-
-1ST FLOOR	4,586	-	-	-
-WAREHOUSE	1,546	-	-	-
-2ND FLOOR	4,662	-	-	-
TOTAL FLOOR SPACE	60,808	13,775	18,894	-
TOTAL FOOTPRINT AREA	50,104	13,775	18,894	-

SCHOOL USE TABLE

NAME	DESCRIPTION	EXISTING	PROPOSED	TOTAL
YEARS OF STUDENT COUNT		1998 TO PRESENT	-	-
STUDENT COUNT				
*PRESCHOOL		120	72	192
*ELEMENTARY		655	88	748
*TOTAL		775	160	955
CLASSROOMS				
*PRESCHOOL		5	3	8
*ELEMENTARY	44 KINDERGARTEN, 22 ELEMENTARY	26	0	26
*TOTAL		31	3	34
# OF EMPLOYEES		70	6	76
GRADE LEVELS		PS-5	NO CHANGE	NO CHANGE
HOURS OF OPERATION		7AM TO 6PM	NO CHANGE	NO CHANGE
OFF-STREET PARKING		83	26	109

APN #: 237-04-010
ZONING: A(PD)
LOT SIZE: 7.29 ACRES
PERMITTED USE: PRIVATE SCHOOL
SETBACKS:
FRONT: 25'-0"
SIDES: 25'-0"
REAR: 25'-0"

AREA SUMMARY
TOTAL [E] BUILDINGS: 50,104 S.F.
TOTAL ADDITIONAL BLDG.: 4564 S.F.
TOTAL S.F.: 54668 S.F.
MAX BUILD-OUT: 54,668 S.F.
MAX HEIGHT: 50'-0"

AREAS AS PERCENTAGE OF TOTAL SITE AREA
% OF TOTAL BLDG. FOOTPRINT: 17.0%
% OF LANDSCAPE AREAS: 55.0%
% OF PARKING/LOADING AREAS: 28.0%

REQUIRED PARKING SPACES
TOTAL NEW & EXISTING CLASSROOMS TO REMAIN
6 PRESCHOOL CLASSROOMS ADDED
(1 STAFF LOUNGE AND 1 COMPUTER ROOM=NO ADDITIONAL STUDENTS OR STAFF)
2 PRESCHOOL CLASSROOMS TO REMAIN
26 ELEMENTARY
34 TOTAL CLASSROOMS

ASSUME 2 TEACHERS PER PRESCHOOL CLASSROOM AND 1 TEACHER PER ELEMENTARY CLASSROOM

PARKING ANALYSIS

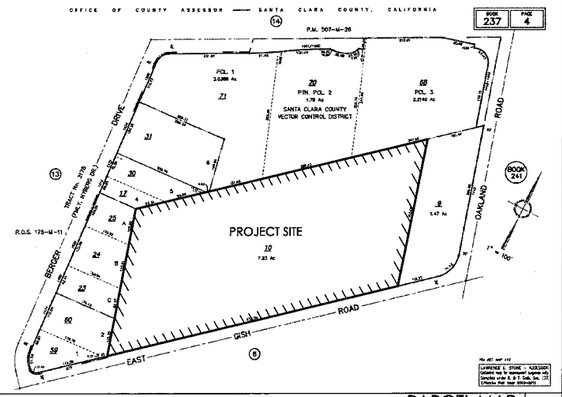
(E) PRESCHOOL (1 PER 1-1/2 EMPLOYEES) 4 EMPLOYEES/1.5 PARKING FACTOR 03
(N) PRESCHOOL (1 PER 1-1/2 EMPLOYEES) 12 EMPLOYEES/1.5 PARKING FACTOR 08
(E) ELEMENTARY (1 PER 2 EMPLOYEES) 26 EMPLOYEES/2 PARKING FACTOR 13
TOTAL PARKING FOR STAFF 24

(E) FACILITY PARKING ANALYSIS
OFFICE (1/250) 37
WAREHOUSE (25,000 S.F.) 02
TOTAL REQUIRED PARKING FOR CRO 39

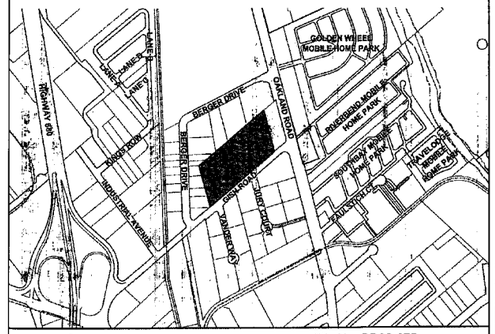
TOTAL REQUIRED PARKING FOR ENTIRE SITE 63

PARKING PROVIDED 109
(8 ACCESSIBLE STALLS)

PROJECT SUMMARY
EXISTING & PROPOSED CONDITIONS | 9



PARCEL MAP | 6



File No: PD03-075
District: 04
Quad No: 51, 67

PD ZONING DISTRICT | 3

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C-6716
EXP. 08.31.13
STATE OF CALIFORNIA

CHALLENGER SCHOOL BERRYESSA EXPANSION

CLASSROOM EXPANSION & SITE IMPROVEMENT

711 E. GISH ROAD, SAN JOSE, CALIFORNIA

REVISIONS
11.09.11 PLANNING DEPARTMENT ZONING SUBMITTAL
11.16.11 PLANNING DEPARTMENT ZONING SUBMITTAL UPDATE
02.17.12 PLANNING RESUBMITTAL

LAND USE PLAN

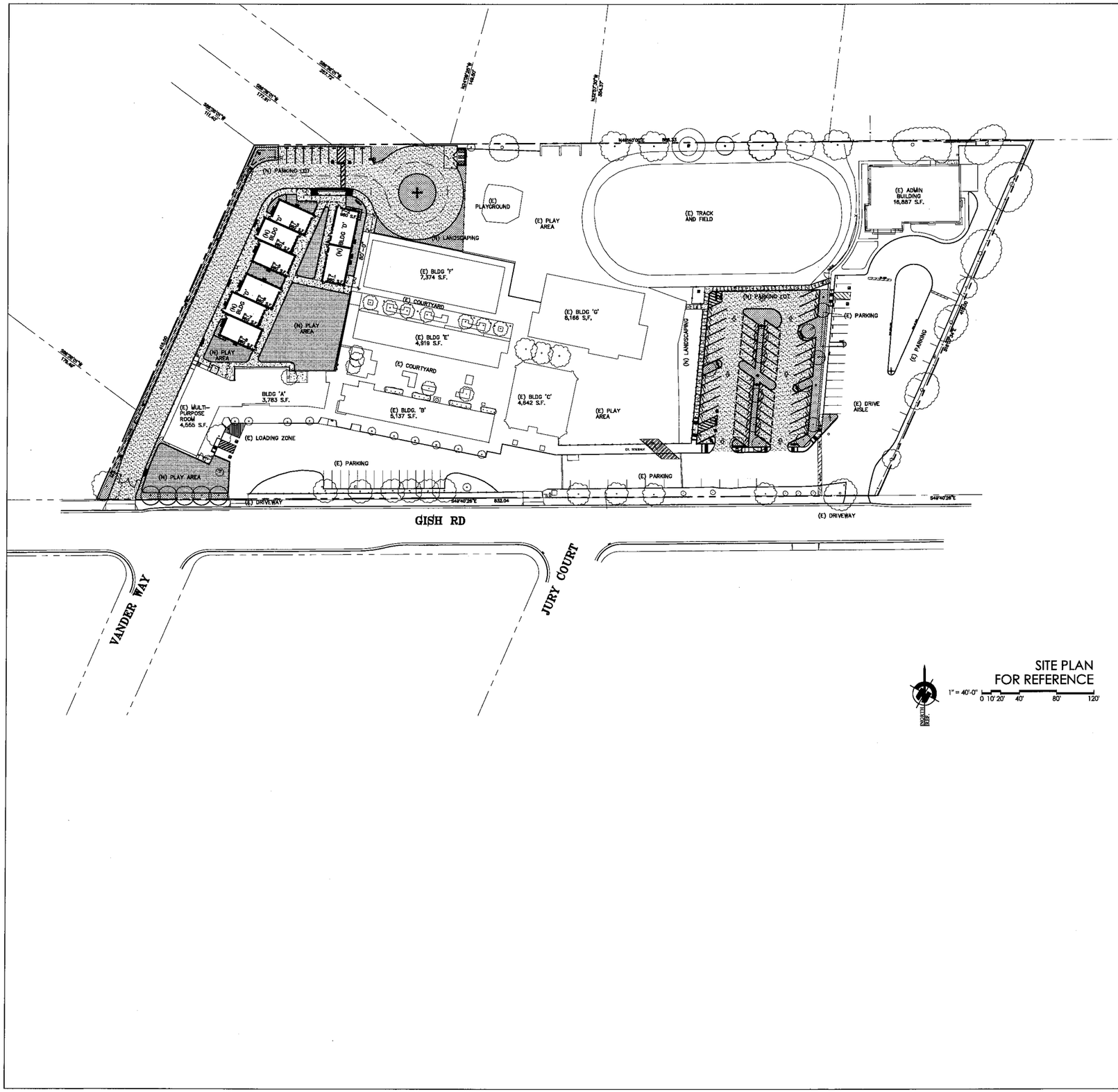
Date
Scale AS SHOWN
Drawn -
Job 1012-4.4
Sheet A0.5

PLANNING

PLOTTED: 03.15.12

1012-4.4_Challenger Berryessa Portables\plot\planning\PD Zoning Set\
1012_4_4_Challenger Berryessa_plot_PD Zoning Set

Figure 12



LEGEND

ACCESSIBLE PATH OF TRAVEL (P.O.T)

- AC PAVING
- REINFORCED CONCRETE
- LANDSCAPING
- PERMEABLE PLAY TURF
- TRUNCATED DOMES

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CLASSROOM EXPANSION & SITE IMPROVEMENTS
711 E. GISH ROAD, SAN JOSE, CALIFORNIA 95112

REVISIONS

02.09.12
BUILDING SUBMITTAL

OVERALL SITE PLAN & NOTES

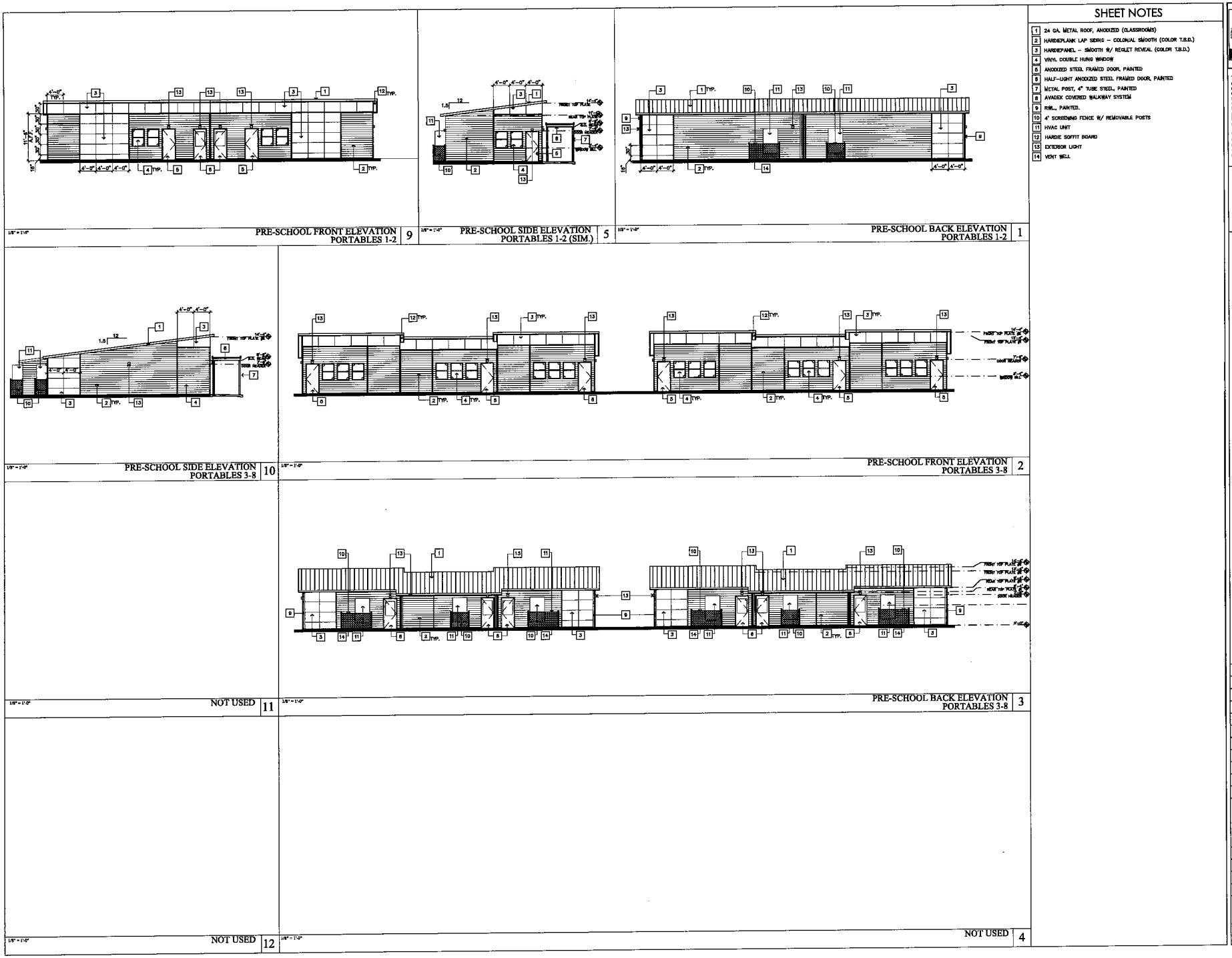
Date	02/02/12
Scale	1"=40'-0"
Drawn	
Job	1012-4.4.1
Sheet	A1.2

PLAN CHECK SUBMITTAL

PLOTTED:

1012-4.2_Challenger Berryessa Bldg.\plot\building\

Figure 13



SHEET NOTES

1. 24 GA. METAL ROOF, ANODIZED (CLASSROOMS)
2. HARDIEPLANK LAP SIDING – COLONIAL SMOOTH (COLOR T.B.D.)
3. HARDIEPANEL – SMOOTH W/ REGLET REVEAL (COLOR T.B.D.)
4. VINYL DOUBLE HUNG WINDOW
5. ANODIZED STEEL FRAMED DOOR, PAINTED
6. HALF-LIGHT ANODIZED STEEL FRAMED DOOR, PAINTED
7. METAL POST, 4" TUBE STEEL, PAINTED
8. AVADEX COVERED WALKWAY SYSTEM
9. RWL, PAINTED.
10. 4' SCREENING FENCE W/ REMOVABLE POSTS
11. HVAC UNIT
12. HARDIE SOFFIT BOARD
13. EXTERIOR LIGHT
14. VENT WELL

ARCHITECTURE & PLANNING
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CHALLENGER BERRYESSA

CLASSROOM EXPANSION & SITE IMPROVEMENTS
711 E. GISH ROAD
SAN JOSE, CALIFORNIA 95112

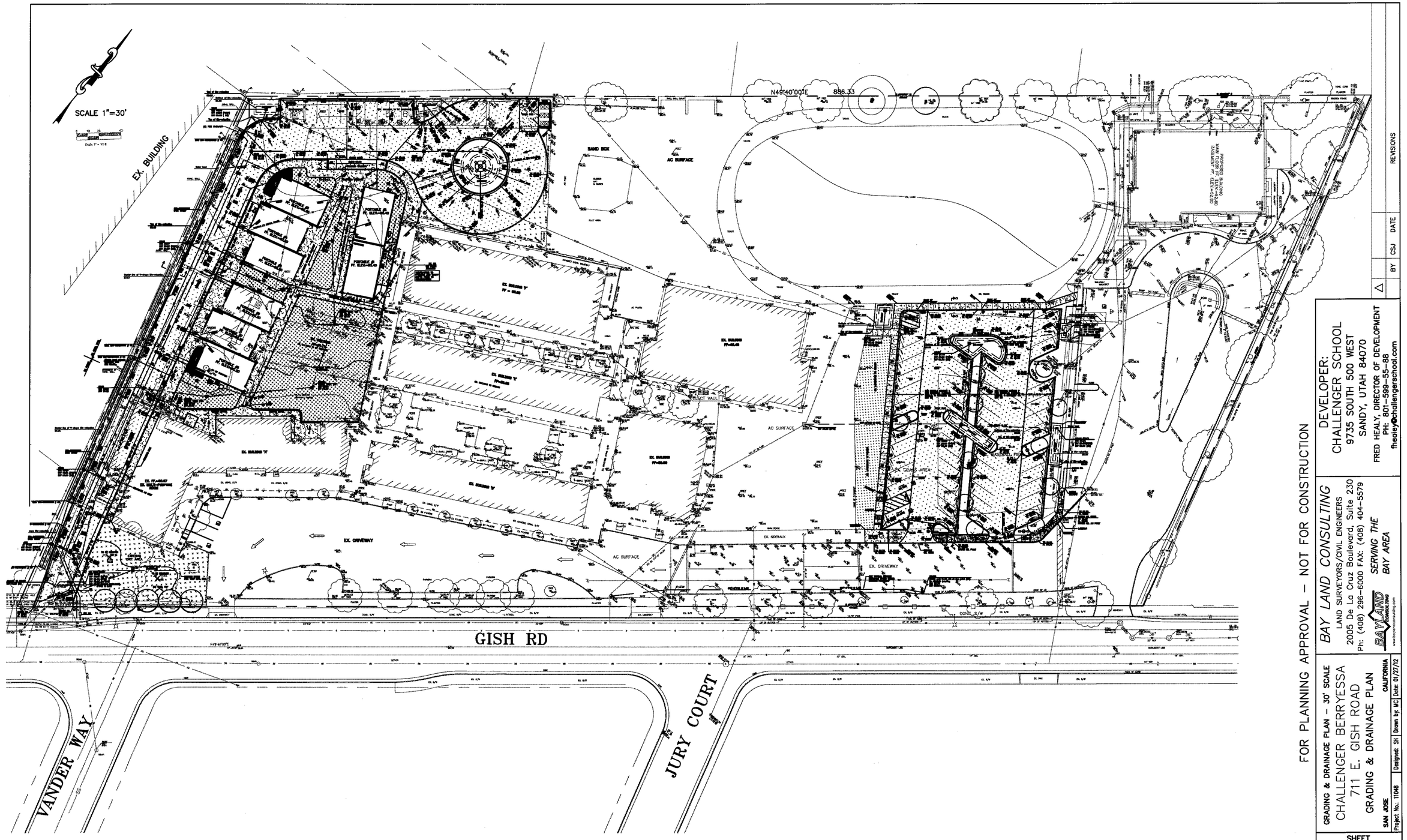
REVISIONS

PRE-SCHOOL PORTABLES ELEVATIONS & NOTES

Date	02/02/12
Scale	1/8" = 1'-0"
Drawn	–
Job	1012-4.4.1
Sheet	A4.1

PLAN CHECK SUBMITTAL

Figure 14



OVERVIEW

FOR PLANNING APPROVAL – NOT FOR CONSTRUCTION

△	BY	CSJ	DATE	REVISIONS

DEVELOPER:
CHALLENGER SCHOOL
9735 SOUTH 500 WEST
SANDY, UTAH 84070
FRED HEALY, DIRECTOR OF DEVELOPMENT
PH: 801-599-55-88
fhealey@challengerschool.com

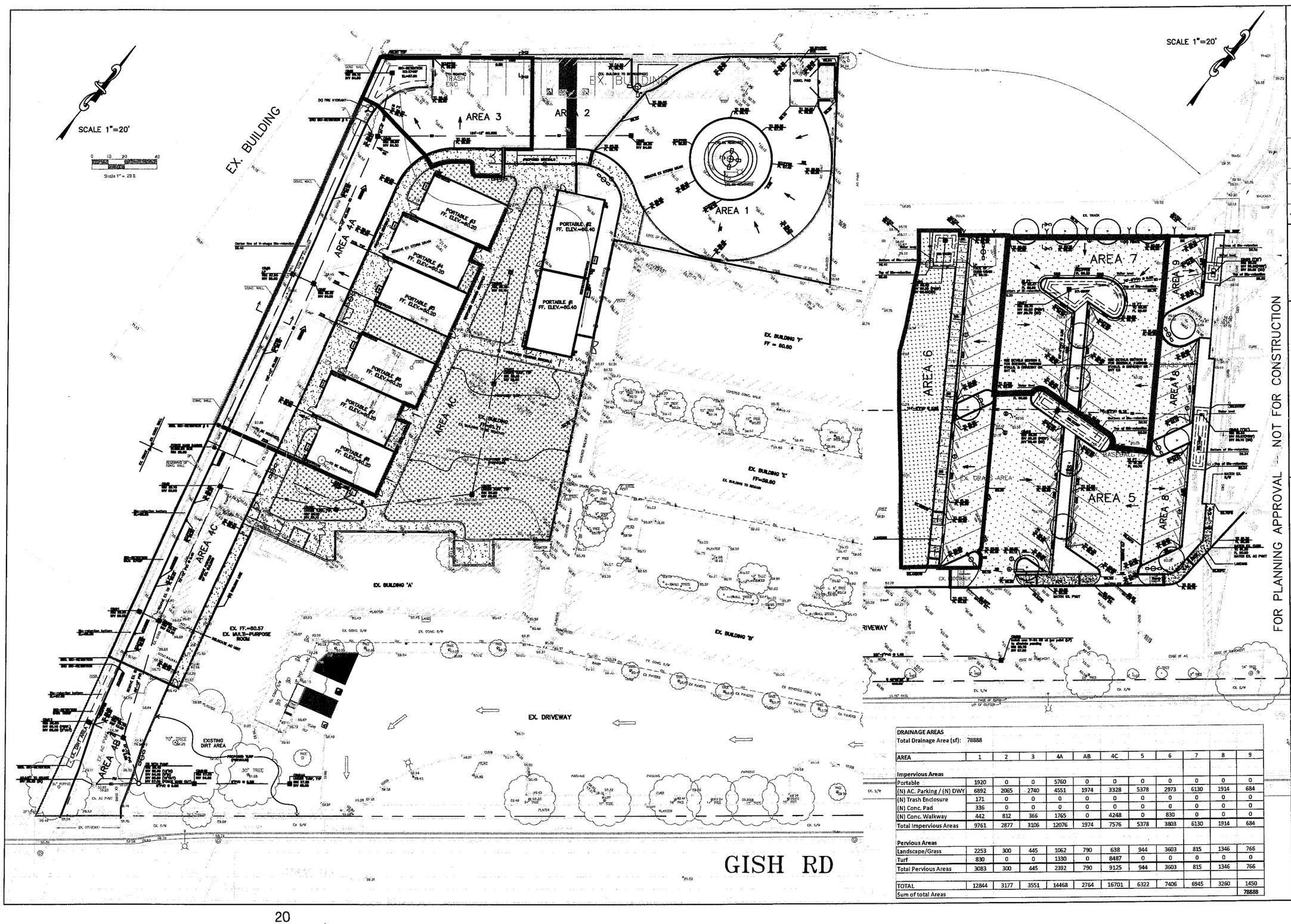
BAY LAND CONSULTING
LAND SURVEYORS/CIVIL ENGINEERS
2005 De La Cruz Boulevard, Suite 230
Ph: (408) 296-6000 FAX: (408) 404-5579
SERVING THE BAY AREA
www.bayareaconsulting.com

GRADING & DRAINAGE PLAN – 30' SCALE
CHALLENGER BERRYESSA
711 E. GISH ROAD
GRADING & DRAINAGE PLAN
SAN JOSE CALIFORNIA
Project No.: 11048 | Designed: SH | Drawn by: MC | Date: 01/27/12

SHEET
C3
Of 7 SHEETS

PW PROJECT #
3-

Figure 15



DRAINAGE AREAS
Total Drainage Area (sf): 78888

AREA	1	2	3	4A	AB	4C	5	6	7	8	9
Impervious Areas											
Portable	1920	0	0	5760	0	0	0	0	0	0	0
(N) AC. Parking / (N) DWY	6892	2065	2740	4551	1974	3328	5378	2973	6130	1914	684
(N) Trash Enclosure	171	0	0	0	0	0	0	0	0	0	0
(N) Conc. Pad	336	0	0	0	0	0	0	0	0	0	0
(N) Conc. Walkway	442	812	366	1765	0	4248	0	830	0	0	0
Total Impervious Areas	9761	2877	3106	12076	1974	7576	5378	3803	6130	1914	684
Pervious Areas											
Landscape/Grass	2253	300	445	1062	790	638	944	3603	815	1346	766
Turf	830	0	0	1330	0	8487	0	0	0	0	0
Total Pervious Areas	3083	300	445	2392	790	9125	944	3603	815	1346	766
TOTAL	12844	3177	3551	14468	2764	16701	6322	7406	6945	3260	1450
Sum of total Areas											78888

FOR PLANNING APPROVAL – NOT FOR CONSTRUCTION

△	BY	CSJ	DATE	REVISIONS
△				
△				
△				
△				

DEVELOPER:
CHALLENGER SCHOOL
9735 SOUTH 500 WEST
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FRED HEALY, DIRECTOR OF DEVELOPMENT
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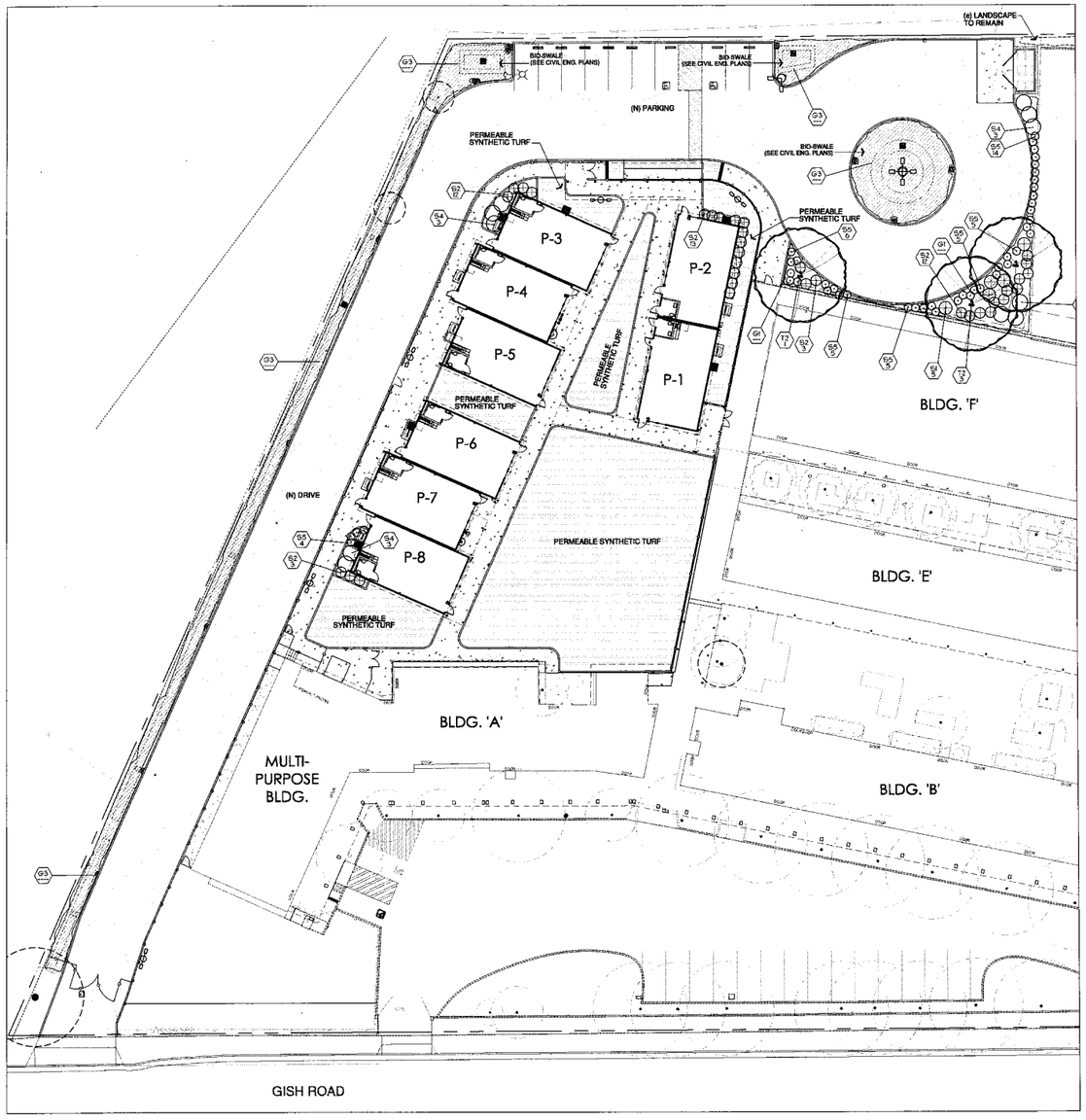
SERVING THE BAY AREA

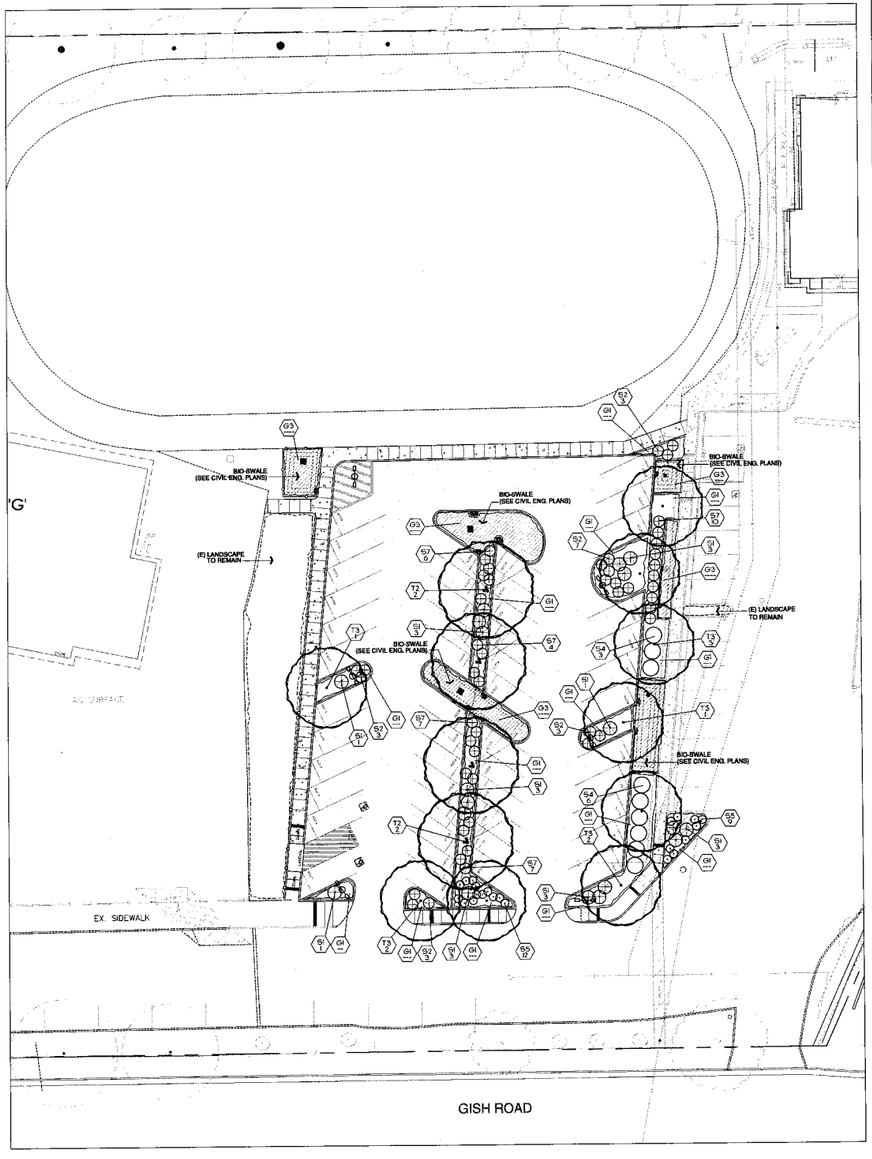
DRAINAGE AREAS - 20' SCALE
CHALLENGER BERRYESSA
711 E. GISH ROAD
STORMWATER CONTROL PLAN
SAN JOSE CALIFORNIA
Project No.: 11048 | Designed: SH | Drawn by: MC | Date: 01/12/12

SHEET
C7
Of 9 SHEETS

PW PROJECT #
3--

Figure 16





PLANT LIST:

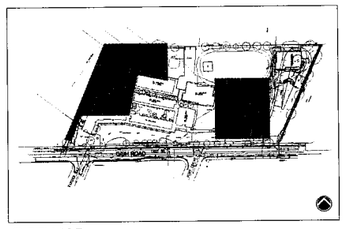
KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS	WUCOL
	TREES					
T1	METROSIDEROS EXCELSUS	NEW ZEALAND CHRISTMAS	---	15 GAL	STANDARD	LOW
T2	ARBUTUS UNEDO	STRAWBERRY TREE	---	15 GAL	STANDARD	LOW
T3	LAGERSTROMIA I. 'TUSCARORA'	CRAPE MYRTLE	---	15 GAL	STANDARD	LOW
	SHRUBS					
S1	PHORMIUM M 'LIMPRIS'	NEW ZELAND FLAX		5 GAL		LOW
S2	DIETES V. 'VARIEGATA'	VARIEGATED AFRICAN IRIS		5 GAL		LOW
S3	JUNCUS P. 'ELK BLUE'	BLUE RUSH CALIFORNIA GRAY RUSH		5 GAL		MEDIUM
S4	PITTOSPORUM T. 'VARIEGATA'	VARIGATED TOBIRA		5 GAL		LOW
S5	STIPA TENUISSIMA	FEATHER GRASS		1 GAL		LOW
S6	ILEX V. 'PRIDE OF HOUSTON'	YAUPON		5 GAL		LOW
S7	LAVANDULA STOECHAS	SPANISH LAVANDER		5 GAL		LOW
	GROUND COVERS					
G1	APTENIA C. 'RED APPLE'	ICE PLANT	---	FLATS	12" O.C.	LOW
G2	OSTEOSPERMUM F. 'HIGHRIDE'	AFRICAN DAISY	---	FLATS	18" O.C.	LOW
G3	IRRIGATION SOD	GRASS BLEND FOR SWALE AREAS	---	SOD	---	LOW
	BY "DELTA BLUE GRASS CO." (800) 637-6873					
	FESTUCA RUBRA					
	HORDEUM B. CALIFORNICUM					
	NASSELLA PULCHRA					
	HORDEUM BRACHYANTHERUM					
G4	ROSAMINUS O. 'HUNTINGTON CARPET'	ROSEMARY	---	1 GAL	36" O.C.	LOW

PLANT NOTES:

1. THE CONTRACTOR SHALL VERIFY PLANT QUANTITIES FROM THE PLANTING PLAN. QUANTITIES SHOWN IN THE LEGEND ARE FOR CONVENIENCE ONLY.
2. NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE PLANTING PLAN.
3. PLANT GROUNDCOVER IN SHRUB AREAS AS NOTED, USE TRIANGULAR SPACING.
4. SEE DETAIL AND SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION.
5. THERE WILL BE NO MATERIALS OR PLANT MATERIALS SUBSTITUTIONS WITHOUT APPROVAL OF THE OWNER OR THE LANDSCAPE ARCHITECT.
6. ALL SLOPES PLANTED WITH LAWN NOT TO EXCEED A 3H SLOPE. ALL SLOPES PLANTED WITH GROUND COVER NOT TO EXCEED A 2H SLOPE.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS (2% MIN.)
8. IN THE EVENT OF ANY DISCREPANCIES BETWEEN THIS PLAN AND ACTUAL SITE CONDITIONS, THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED IMMEDIATELY.
9. ENTIRE SITE IS TO BE ROUGH GRADED BY THE GRADING CONTRACTOR TO WITHIN ½ FOOT OF FINISH GRADE. LANDSCAPE CONTRACTOR IS TO FINE GRADE ALL LANDSCAPE AREAS.
10. ALL SITE UTILITIES ARE TO BE PROTECTED DURING CONSTRUCTION. IN THE EVENT OF CONFLICT BETWEEN THE PLANS AND UTILITIES THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT. ANY DAMAGE TO UTILITIES, STRUCTURES, OR OTHER FEATURES TO REMAIN, AND CAUSED BY THE LANDSCAPE CONTRACTOR SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
11. THE WORK IN THESE DRAWINGS AND SPECIFICATIONS MY RUN CONCURRENTLY WITH WORK BY OTHERS. THE LANDSCAPE CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER CONTRACTORS.
12. REFER TO CIVIL ENGINEER'S PLANS FOR OVERALL SITE GRADING AND DRAINAGE.
13. SOD LAWN SHALL BE DWARF FESCUE BLEND.
14. PRIOR TO ANY DIGGING OR TRENCHING, CALL UNDERGROUND SERVICE ALERT – 1.800.227.2600

PLANT SYMBOLS

- SXX/XX — INDICATES PLANT KEY / INDICATES PLANT QUANTITY
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED



SITE MAP

NOT TO SCALE

0 10 20 40

Scale 1" = 20 ft

800-227-2600

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TREAD ASSOCIATES TRAFFIC ENGINEERING

CHALLENGER BERRYESSA
BUILDING SITE, SHELL & INTERIORS
711 E. GISH ROAD
SAN JOSE, CALIFORNIA 95112

REVISIONS

Landscape Planting Plan

Date	Jan 31, 2012
Scale	1"=20'
Drawn	
Job	1012-4.2
Sheet	L1.0

Figure 17

II. ENVIRONMENTAL SETTING, IMPACT CHECKLIST AND MITIGATION

1. AESTHETICS

SETTING

The current view of the project site consists primarily of school buildings, play areas, and landscaping, which can be seen in the preceding photographs, Figures 8 through 10.

Scenic Route

The project site is not located adjacent to a designated scenic route.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
1. AESTHETICS. Would the project:					
a. Have a substantial adverse effect on a scenic vista?				X	25,26,27
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?				X	25,26, 27,29,31
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				X	25,26,27
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				X	25, 26,28,34
e. Increase the amount of shading on public open space (e.g., parks, plazas and/or school yards)?				X	25,26,28

The project would have a minor change on the view of the site, but would not create new light and glare, or increase the amount of shading on public open space. The new portable classrooms are located behind existing buildings and would not be visible from E. Gish Road. The new parking area will be visible from the roadway, but will also include new landscaping. The project would not have a substantial adverse effect on a scenic vista or substantially degrade the existing visual character or quality of the site and its surroundings.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The project would have **no impact** on aesthetics.

2. AGRICULTURE AND FOREST RESOURCES

SETTING

Agriculture Resources

The *Santa Clara County Important Farmland Map*, prepared by the California Department of Conservation and the USDA Natural Resources Conservation Service, classifies land in seven categories in order of significance: 1) prime farmland, 2) farmland of Statewide importance, 3) unique farmland, 4) farmland of local importance, 5) grazing land, 6) urban and built-up land and 7) other land. The project site is classified as "urban and built-up land," which is defined as land occupied by structures with a building density of at least one unit to one and one-half acres.

Williamson Act

The California Land Conservation Act ("Williamson Act") was enacted to help preserve agricultural and open space lands via a contract between the property owner and the local jurisdiction. Under the contract, the owner of the land agrees not to develop the land in exchange for reduced property taxes. The project site is not under a Williamson Act contract.

Forest Resources

"Forest land" is defined by the California Public Resources Code as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. "Timberland" means land, other than land owned by the federal government and land designated as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. The project site is already developed as a school, is surrounded by urban development, and is not located on forest land or timberland.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
2. AGRICULTURE AND FOREST RESOURCES. 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	35,36
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X	37,67

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
2. AGRICULTURE AND FOREST RESOURCES (Cont.). Would the project:					
c. Conflict with existing zoning for, or cause rezoning of, forest land [as defined in PRC Section 12220(g)], timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production [as defined by GC Secion 51104(g)]?				X	25,27
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X	25,26,28
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X	25,26,28

Agriculture Resources

The project site is classified as urban and built-up land on the *Important Farmland Map* for Santa Clara County. Since the site is not located in an area identified as prime farmland, nor is the site being used for or zoned for agricultural use or is under a Williamson Act contract, the project would not have a significant impact on agricultural land.

Forest Resources

Since the site is not located in an area identified as forest land or timberland, nor is the site being used for or zoned for forestry use, the project would not have a significant impact on forest resources.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The proposed project would have **no impact** on agriculture or forest resources.

3. AIR QUALITY

SETTING

Regional Climate

The air quality of a given area is not only dependent upon the amount of air pollutants emitted locally or within the air basin, but also is directly related to the weather patterns of the region. The wind speed and direction, the temperature profile of the atmosphere, and the amount of humidity and sunlight react with the emitted pollutants each day, and determine the resulting concentrations of air pollutants defining the "air quality."

The Bay Area climate is Mediterranean, with mild, rainy winters November through March, and warm, sunny and nearly dry summers June through September. Summer temperature inversions trap ground level pollutants. Winter conditions are less conducive to smog, but thin evening inversions sometimes concentrate carbon monoxide emissions at ground level. A temperature inversion is a thin layer of the atmosphere where the normal decrease in temperature with height switches to the temperature increasing with height; an inversion acts like a lid.

San Jose is located in the southern portion of the San Francisco Bay Area Air Basin. The proximity of this location to both the Pacific Ocean and San Francisco Bay has a moderating influence on the climate. Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by automobiles and factories from upwind areas of the Peninsula toward San Jose, particularly during the summer months. Winds are lightest on average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Regulatory Overview

The Federal Clean Air Act establishes pollutant thresholds for air quality in the United States; which are administered by the U.S. Environmental Protection Agency (EPA). In addition to being subject to Federal requirements, California has its own, more stringent, regulations under the California Clean Air Act, which is administered by the California Air Resources Board (CARB) at the State level and by Air Quality Management Districts at the local level. The project site is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which includes seven Bay Area counties and portions of two others.

Criteria Pollutants

The BAAQMD is primarily responsible for ensuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. These ambient air quality standards are levels of contaminants that represent safe levels in order to avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The major criteria pollutants, characteristics, health effects and typical

sources for the Bay Area are identified in the table on the following page, Table 2. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for and inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and many other associated activities.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulate, benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage and death.

Air Quality Standards

Air quality is described by the concentration of various pollutants in the atmosphere. The significance of the pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The U.S. EPA and CARB have both established ambient air quality standards for common pollutants to avoid adverse health effects from each pollutant. The pollutants, which include ozone, carbon monoxide (CO), nitrogen dioxide, and particulate matter (PM_{10} and $PM_{2.5}$), and their standards are included in the Local Air Quality table, Table 2, that follows. In Santa Clara County, ozone and particulate matter are the pollutants of greatest concern since measured air pollutant levels exceed the State and Federal air quality standards concentrations at times.

Attainment Status

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

The U.S. EPA has classified the San Francisco Bay Area as a nonattainment area for the Federal 8-hour ozone and $PM_{2.5}$ standards. The Bay Area was designated as unclassifiable/attainment for the Federal PM_{10} standard.

Under the California Clean Air Act, Santa Clara County is a nonattainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The county either meets attainment or is unclassified for the other pollutants. The California Clean Air Act requires local air pollution control districts to

prepare air quality attainment plans; these plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, if not, provide for adoption of "all feasible measures on an expeditious schedule".

Local Air Quality

Air quality in the project area is subject to the problems experienced by most of the Bay Area. Emissions from millions of vehicle-miles of travel each day often are not mixed and diluted, but are trapped near ground level by an atmospheric temperature inversion. Prevailing air currents generally sweep from the mouth of the Bay toward the south, picking up and concentrating pollutants along the way. A combination of pollutants emitted locally, the transport of pollutants from other areas, and the natural mountain barriers (the Diablo Range to the east and the Santa Cruz Range to the southwest) give San Jose a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin.

The BAAQMD maintains a network of monitoring sites in the Bay Area. The closest to the project site is located in Downtown San Jose. Violations of air quality standards for the last three reported years at the downtown San Jose monitoring station are shown in the following table. Federal ambient air quality standards are met in the project area with the exception of ozone and $PM_{2.5}$. State ambient standards are met with the exception of ozone and PM_{10} / $PM_{2.5}$.

Table 2. Local Air Quality

Pollutant	Standard	Days Exceeding Standard 2007	2008	2009
OZONE				
State 1-hour	0.09 ppm	0	1	0
State 8-hour	0.07 ppm	0	3	0
Federal 8-hour	0.08 ppm	0	2	0
CARBON MONOXIDE				
State/Federal 8-hour	9.0 ppm	0	0	0
NITROGEN DIOXIDE				
State 1-hour	0.25 ppm	0	0	0
PARTICULATE MATTER (PM_{10})				
State 24-hour	50 $\mu g/m^3$	3	1	0
Federal 24-hour	150 $\mu g/m^3$	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)				
Federal 24-hour	35 $\mu g/m^3$	9	5	0

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

SOURCE: Bay Area Air Quality Management District monitoring data for Downtown San Jose.

Project Site

The project site is similar to other locations in the South Bay; air quality meets adopted State and/or Federal standards (the more stringent standard applies) on most days, and during periods when regional atmospheric conditions are stagnated, the air quality is poor throughout the

extended South Bay area. There are no existing sources on the project site that currently adversely affect local air quality.

Sensitive Receptors

Some groups of people are more affected by air pollution than others. CARB has identified the following people who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest sensitive receptors are the mobile homes located east of the project site across Oakland Road.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
3. AIR QUALITY. Would the project:					
a. Conflict with or obstruct implementation of the applicable air quality plan?				X	29,39
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X			26,39
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			X		26,39
d. Expose sensitive receptors to substantial pollutant concentrations?				X	28,39
e. Create objectionable odors affecting a substantial number of people?				X	26,28

Project Impacts

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

For most types of development projects, motor vehicles traveling to and from a project represent the primary source of air pollutant emissions associated with the project. The BAAQMD has

established thresholds of significance for these indirect impacts from projects on local and regional air quality. If project vehicle emissions of carbon monoxide (CO) exceed 9 ppm (8-hour average) or 20 ppm (1-hour average); and if a project generates over 54 lbs/day of reactive organic gases (ROG), nitrogen oxides (NO_x) or suspended particulate matter ($PM_{2.5}$ from exhaust) or over 82 lbs/day (PM_{10} from exhaust), it would have a significant air quality impact. For construction-related PM_{10} and $PM_{2.5}$ fugitive dust, the threshold of significance is a requirement that the facility employ Best Management Practices (BMPs) to minimize dust.

The BAAQMD developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a proposed project could result in potentially significant air quality impacts. If the screening criteria are met, then an air quality assessment of a project's air pollutant emissions is not required and the project would not result in the generation of operational-related criteria air pollutants and/or precursors that exceed the District's thresholds of significance. Operation of a proposed project would, therefore, result in a less-than-significant cumulative impact to air quality from criteria air pollutant and precursor emissions. For elementary school projects, the screening levels are 271,000 square feet for NO_x and 2,747 students for ROG. The proposed 4,564-square-foot addition and 160 additional students are below those levels and, therefore, the project would not have a significant air quality impact.

Odors

The project would not generate objectionable odors or place sensitive receptors adjacent to a use that generates odors (i.e., landfill, composting, etc.).

Sensitive Receptors

The closest sensitive receptors (the mobile homes located east of the project site across Oakland Road) could be subjected to fugitive dust as a result of construction, as discussed below.

Temporary Construction Dust

The project would produce short-term fugitive dust generated as a result of site preparation and construction. The effects of construction activities would be increased dustfall and locally elevated levels of PM_{10} and $PM_{2.5}$ downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties. This is considered a potentially significant impact. The BAAQMD threshold of significance for construction dust impacts is whether Best Management Practices (BMPs) are to be utilized. Mitigation measures include all basic BMPs identified by the BAAQMD; according to the District threshold of significance for construction impacts, implementation of the measures would reduce construction dust impacts of the project to a less-than-significant level.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Temporary Construction Dust

- The following Best Management Practices shall be required of construction contracts and specifications for all construction to prevent visible dust emissions from leaving the site:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by CCR Title 13). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly-visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints shall be posted. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

CONCLUSION

The implementation of the above mitigation measures would reduce the project's impact on air quality to a **less-than-significant impact with mitigation**.

4. BIOLOGICAL RESOURCES

Walter Levison, Consulting Arborist, conducted an arborist's report dated November 15, 2011 that is included in the Technical Appendix.

SETTING

Vegetation

Vegetation on the project site consists of landscaping around the school facilities and trees. No rare or endangered plant species are known to inhabit the site.

Trees

The City of San Jose has a Tree Ordinance that regulates the removal of trees. An "Ordinance-sized tree" is defined as any native or non-native tree with a circumference of 56 inches (diameter of 18 inches) measured at 24 inches above the natural grade. For multi-trunk trees, the circumference is measured as the sum of the circumferences of all trunks at 24 inches above grade. A "heritage tree" is defined as a tree of special significance to the community due to history, girth, height, species, or other unique quality.

A detailed tree survey of the trees to be removed on the site having trunk diameters of 12 inches or greater, or having multiple trunks, was conducted. A total of 5 trees, ranging in diameter from 12 inches to 51 inches, were tagged and evaluated. Four (4) trees exceed 18 inches in diameter, are considered to be Ordinance-sized trees, and come under the review of the City's Tree Ordinance. There are no designated Heritage Trees on the site. The approximate locations of the trees are shown on the following Tree Locations map, and their description by type, size and general condition is given in the following table. Ordinance-sized trees are shown in **bold** in the table. Photographs of each Ordinance-sized tree are included in the Technical Appendix.

Table 3. Existing Trees to be Removed

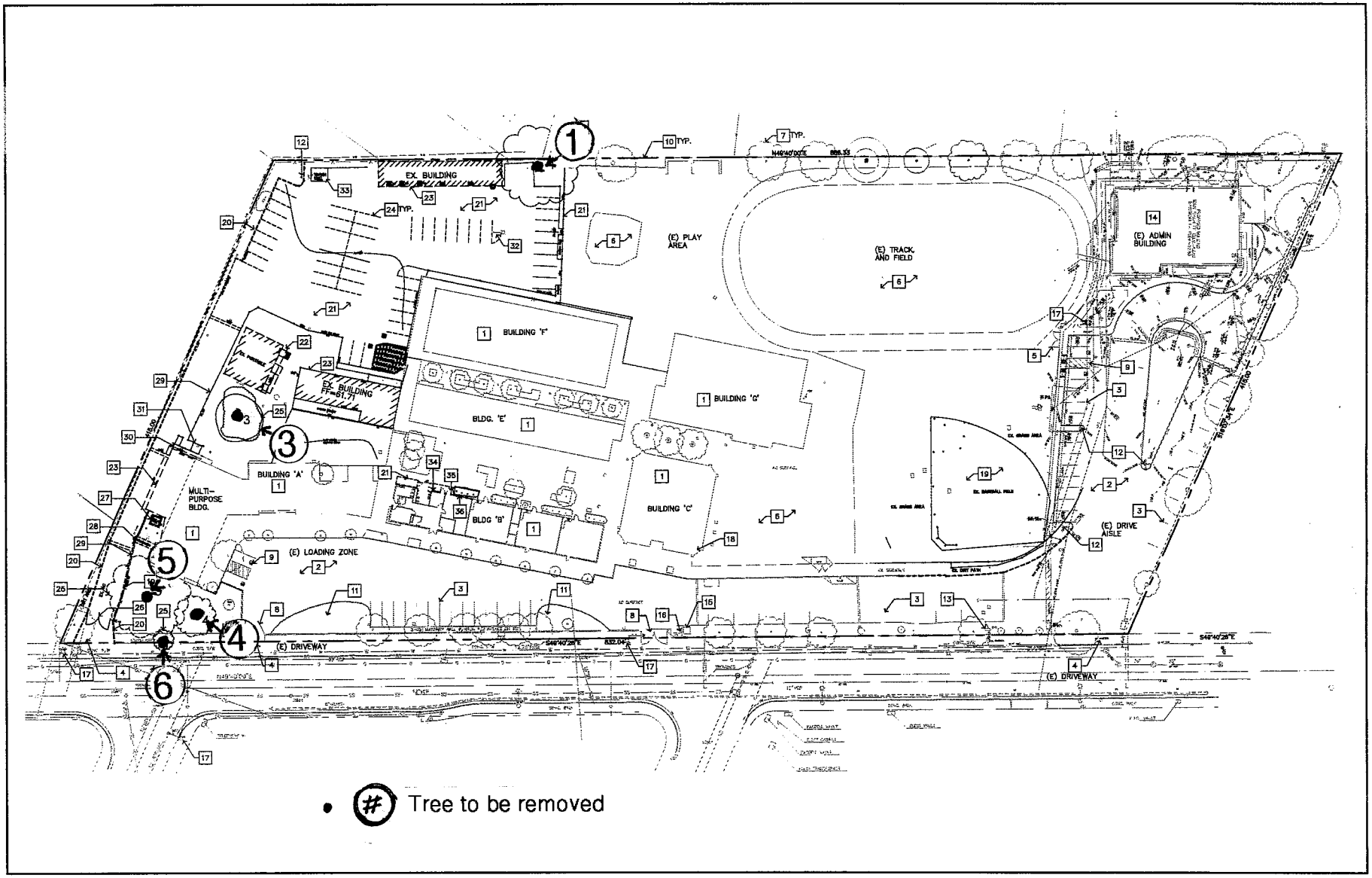
No.	Scientific Name	Common Name	Native Tree	Diameter * *(inches)*	General Condition	To Be Removed
1.	***Juglans hindsii***	**California Black Walnut**	**Y**	**51**	**Good**	**X**
2.	Not used					
3.	***Ulmus parvifolia***	**Chinese Elm**		**24**	**Good**	**X**
4.	***Schinus molle***	**California Pepper**		**34**	**Poor**	**X**
5.	***Schinus molle***	**California Pepper**		**42,36**	**Poor**	**X**
6.	*Cupressus sempervirens*	Italian Cypress		12	Good	X

Note: Some trees have multiple stems from a single trunk. Ordinance-sized trees are shown in **bold**.

* Diameter at 2 feet above ground.

Y = Native Tree.

X = To be Removed.



Tree Locations

Figure 18

Riparian Corridor Habitat

Riparian corridor habitat is not located on or within 300 feet of the project site.

Wildlife

The project site contains developed habitat. Wildlife typically associated with this habitat type include birds, reptiles, and small mammals. No rare or endangered animal species are known to inhabit the site. The site does not contain any known important wildlife breeding, nesting or feeding areas.

Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP)

To promote the recovery of endangered species while accommodating planned development, infrastructure and maintenance activities, the Local Partners, consisting of the City of San Jose, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, Santa Clara County and the cities of Gilroy and Morgan Hill, are preparing a joint Habitat Conservation Plan/Natural Community Conservation Plan. The Santa Clara Valley Habitat Plan is being developed in association with the U.S. Fish & Wildlife Service (USFWS), the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS) and in consultation with stakeholder groups and the general public to protect and enhance ecological diversity and function within more than 500,000 acres of southern Santa Clara County. The final HCP/NCCP s currently expected to be completed in 2013.

The Santa Clara Habitat Plan Planning Agreement outlines the Interim Project Process to ensure coordination of projects approved or initiated in the Planning Area before completion of the Habitat Plan to help achieve the preliminary conservation objectives of the Plan, and not preclude important conservation planning options or connectivity between areas of high habitat values. The Interim Project Referral Process requires the local participating agencies to notify the wildlife agencies (CDFG and USFWS) of projects that have the potential to adversely impact covered species or natural communities, or conflict with the preliminary conservation objectives of the Habitat Plan. The wildlife agencies' comments on Interim Projects should recommend mitigation measures or project alternatives that would help achieve the preliminary conservation objectives of the Habitat Plan.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
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, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X	25,47
b. Have a substantial adverse effect on any aquatic, wetland, or riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X	25,43
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	25
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	25
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X		29,42,100
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?				X	25,29

The project site does not include riparian habitat, wetlands or any other sensitive habitat; nor is the site adjacent to any wetlands, waterway or other sensitive habitat. No sensitive plant or animal species are known or expected to inhabit the site. The project site does not contain sensitive wildlife habitat or any wildlife nursery sites, nor will its renovation affect any migratory corridor; and it does not meet the criteria for Interim Habitat Conservation Plan Referral.

Trees

There are a number of trees on the project site. The majority of the trees are currently planned to be retained with the project, as shown on the Site Plan, Figure 13. Five trees, of which one is

native, are planned to be removed with the project, as indicated by an "X" on the preceding Existing Trees table. Four (4) of the trees to be removed exceed 18 inches in diameter (56-inch circumference) and come under the review of the City's Tree Ordinance, which requires approval for the removal of any tree with an 18-inch diameter (56-inch circumference) or greater. The removal of 10 or more native Ordinance-sized trees and/or the removal of 20 or more non-native Ordinance-sized trees is considered a significant impact.

Any tree that is removed will be replaced with the addition of a new tree(s) at the ratios shown in the Tree Replacement Ratios table that follows. Replacement trees are in addition to normal landscaping. If sufficient area is not available onsite within the project for all of the replacement trees, a contribution would be made to Our City Forest where the funds would be used to plant trees within the City.

Trees to remain will be safeguarded before and during construction by a Tree Protection Plan developed by a consulting arborist, and implemented with measures such as the storage of oil, gasoline, chemicals, etc. away from trees; grading around trees or root pruning only as approved, and prevention of drying out of exposed soil where cuts are made; any additional tree pruning needed for clearance performed or supervised by an arborist; application of supplemental irrigation as determined by the consulting arborist; no dumping of liquid or solid wastes in the dripline or uphill from any tree; and construction of barricades around the dripline of the trees until all grading and construction is completed, as outlined in the City's Tree Ordinance.

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Trees

- Any tree that is removed will be replaced with the addition of a new tree(s) at the ratios shown in the following Tree Replacement Ratios table.

Table 4. Tree Replacement Ratios

Diameter of Tree to be Removed	Type of Tree to be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
18 inches or greater	5:1	4:1	3:1	24-inch box
12 to <18 inches	3:1	2:1	None	24-inch box
<12 inches	1:1	1:1	None	15-gallon container

x:x = tree replacement to tree loss ratio

Note: Trees greater that 18" diameter will not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.

- The species and exact number of trees to be planted on the site will be determined at the development permit stage, in consultation with the City Arborist and the Department of Planning, Building and Code Enforcement.

- Replacement trees are to be above and beyond standard landscaping; required street trees do not count as replacement trees.

- In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures will be implemented, to the satisfaction of the Director of Planning, Building and Code Enforcement, at the development permit stage:
  - The size of a 15-gallon replacement tree may be increased to 24-inch box and count as two replacement trees.
  - An alternative site(s) will be identified for additional tree planting. Alternative sites may include local parks or schools or installation of trees on adjacent properties for screening purposes to the satisfaction of the Director of the Department of Planning, Building and Code Enforcement. Contact Jaime Ruiz, Parks, Recreation and Neighborhood Services Landscape Maintenance Manager, at 975-7214 or jaime.ruiz@sanjoseca.gov for specific park locations in need of trees.
  - A donation of $300.00 per mitigation tree will be paid to Our City Forest for in-lieu offsite tree planting in the community. These funds will be used for tree planting and maintenance of planted trees for approximately three years. Contact Rhonda Berry, Our City Forest, at (408) 998-7337 x106 to make a donation. A donation receipt for offsite tree planting will be provided to the Planning Project Manager prior to issuance of a development permit.

- The following tree protection measures will also be included in the project in order to protect trees to be retained during construction:

Pre-construction Treatments

  - The applicant will retain a consulting arborist. The construction superintendent will meet with the consulting arborist before beginning work to discuss work procedures and tree protection.
  - Fence all trees to be retained to completely enclose the tree protection zone prior to demolition, grubbing or grading. Fences will be 6-foot chain link or equivalent as approved by consulting arborist. Fences are to remain until all grading and construction are completed.
  - Prune trees to be preserved to clean the crown and to provide clearance. All pruning will be completed or supervised by a Certified Arborist and adhere to the Best Management Practices for Pruning of the International Society of Arboriculture.

During Construction

  - No grading, construction, demolition or other work will occur within the tree protection zone. Any modifications must be approved and monitored by the consulting arborist
  - Any root pruning required for construction purposes will receive the prior approval of, and be supervised by, the consulting arborist.
  - Supplemental irrigation will be applied as determined by the consulting arborist.

- If injury should occur to any tree during construction, it will be evaluated as soon as possible by the consulting arborist so that appropriate treatments can be applied.
- No excess soil, chemicals debris, equipment or other materials will be dumped or stored within the tree protection zone.
- Any additional tree pruning needed for clearance during construction must be performed or supervised by an Arborist and not by construction personnel.
- As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees will be designed to withstand differential displacement.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The implementation of the above standard project conditions would ensure the project will have a **less-than-significant impact** on biological resources.

5. CULTURAL RESOURCES

Holman & Associates conducted an archaeological literature review dated November 4, 2004 that is on file at the City of San Jose Planning Division for review by authorized personnel. Urban Programmers conducted an architectural and historical evaluation dated March 1, 2012 that is included in the Technical Appendix.

SETTING

Prehistoric Resources

The project site is located within a sensitive archaeological resource area as outlined on the maps on file at the City of San Jose Planning Division. Prior to a field reconnaissance, maps and records at the Northwest Information Center (NWIC), located in Rohnert Park, were consulted for any record of archaeological remains in and around the project area. No sites are recorded on the project site or within 500 feet. There have been numerous surveys of adjacent properties with negative findings.

There are no known cultural sites on the project site, nor does the site have any natural features of significant scenic value or with rare or unique characteristics.

Historic Resources

An historical and architectural evaluation of the structure(s) on the project site was conducted to determine their significance, if any.

Historical Evaluation

The Orchard School District was founded in 1856 occupying land donated by nurseryman Richard Fox. The Gish Road School (project site) was established in 1896. The original building was a wood frame school house that was removed to make room for the new school buildings and portables required during the explosive growth period following World War II. In the 1990s, as the Orchard School District lost pupil enrollment, the district consolidated its instruction in the Orchard School on Fox Avenue and sold the Gish Road facility in 1998 to Emerald Isle LLC, who rents to Challenger Schools, a private school corporation.

Architectural Evaluation

The campus is formed by linear buildings along the front facing onto a driveway and E. Gish Road. Behind the front buildings, the campus extends to the rear along a central spine (covered walkway) with wings on each side and detached buildings randomly placed. There is a separate pre-K and Kindergarten area on the west side. School buildings have been replaced over the years leading to the current configuration that, although remodeled since 1998 when the property was sold by the Orchard School District, retains the front buildings and two wings of the c1950-80s plan. The new buildings, primarily c2003-2007, are detached with the most recent addition, a two-story building, set in the northeasterly corner of the site.

Three of the former Gish Road School buildings are proposed for removal, including: a storage shed c1970 (1,936 square feet) and two classroom buildings (3,409 square feet) both mid-1950s, as described in the report in the Technical Appendix.

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
5. CULTURAL RESOURCES. Would the project:					
a. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines §15064.5?				X	25,45,46
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?			X		27,44,88
c. Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?				X	27,47
d. Disturb any human remains, including those interred outside of formal cemeteries?			X		27,88

Prehistoric Resources and Native American Burials

The project site is located within a sensitive archaeological resource; however, there are no recorded sites on the property. Despite the negative findings, the property is considered to be located in a zone of high archaeological sensitivity: over the past 25 years, there have been numerous discoveries of archaeological sites along the banks of Coyote Creek and in the vicinity of the municipal golf course located on the east side of Oakland Road. There is a possibility that the project site may contain archaeological materials that have been covered historically and/or have been buried by episodes of silting over the past hundreds of years. Impacts to unknown potential archaeological resources can be reduced by archaeological monitoring of grading and/ or trenching operations. In the event that archaeological site indicators are discovered, work will be stopped and an archaeological evaluation program including mitigation if warranted will be submitted to and approved by the City of San Jose Department of Planning, Building and Code Enforcement.

Historic Resources

The Gish Road School Property was evaluated using the criteria or standards of the City of San Jose Historic Preservation Ordinance and those of the California Register of Historic Resources and National Register of Historic Places. The property is not significant to the history or architectural heritage of San Jose because it is not associated with individuals or events of significance. Further, the architecture is not an important example of Mid-century design and older buildings have been altered with comtemporary design, materials and features. The land has been associated with education since 1896; however, none of the pre-1950 original buildings remain. This property is not distinctive in the history of education in San Jose, nor does it exhibit high quality design.

The City of San Jose's criteria for historical significance are described in the report in the Technical Appendix. Based on these criteria, the San Jose Historical Landmarks Commission has established a process by which historical resources are evaluated for significance and a

numerical value is assigned. Scores of 32 or less are not eligible for a category of significance. Scores above 33 are to be evaluated for Landmark Status and California Register of Historic Resources eligibility. The property and structures received 15.54 points under the City of San Jose Historic Evaluation criteria and are not eligible for a category of significance. The historic evaluation tally forms are included in the report in the Technical Appendix.

The National Register of Historic Places has established standards for evaluating the significance of resources that are important in the heritage of the nation. The criteria for listing historical resources in the California Register of Historic Resources are consistent with those developed by the National Park Service for listing resources in the National Register of Historic Places, but have been modified for State use in order to include a range of historical resources that better reflect the history of California. The property does not meet the levels of significance for listing in the National Register and does not appear to qualify for the California Register.

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Prehistoric Cultural Resources

- A qualified archaeologist will be required to monitor all subsurface grading, as follows:
  - If no resources are discovered, the archaeologist will submit a report to the City's Environmental Principal Planner verifying that the required monitoring occurred and that no further mitigation is necessary.
  - If evidence of any archaeological, cultural, and/or historical deposits is found, hand excavation and/or mechanical excavation will proceed to evaluate the deposits for determination of significance as defined by CEQA guidelines.
  - The archaeologist will submit reports, to the satisfaction of the City's Environmental Principal Planner, describing the testing program and subsequent results; these reports will identify any program mitigation to be completed in order to mitigate archaeological impacts (including resource recovery and/or avoidance, testing and analysis, removal, reburial, and curation of archaeological resources at a recognized storage facility). A final report will verify completion of the mitigation program to the satisfaction of the City's Environmental Principal Planner.
  - In the event that human remains and/or cultural materials are found, all project-related construction will cease within a 50-foot radius in order to proceed with the testing and mitigation measures required.

Native American Burials

- Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California: In the event of the discovery of human remains

during construction, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner will be notified by the developer and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the landowner will reinter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

- Any Native American human remains that are discovered and would be subject to disturbance will be removed and analyzed, a report will be prepared, and the remains will be reburied in consultation and agreement with the Native American Most Likely Descendant designated by the Native American Heritage Commission. Prior to obtaining a Certificate of Occupancy, a copy of the report will be submitted to the satisfaction of the Director of Planning, Building and Code Enforcement.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The implementation of the above standard project conditions would ensure the project would have a **less-than-significant impact** on cultural resources.

6. GEOLOGY AND SOILS

United Soil Engineering, Inc. conducted a geotechnical investigation and pavement design study dated November 4, 2011 that is included in the Technical Appendix.

SETTING

Topography

The project site has a uniform westerly slope of approximately 0.5 percent. Elevations on the site range from approximately 58 feet above sea level at the westerly boundary to approximately 60 feet above sea level at the easterly boundary. There are no significant topographical features on the site.

Geology

The project site is underlain by Quaternary alluvium (Qal), which consists of unconsolidated to weakly consolidated silt, sand and gravel. Quaternary alluvium includes Holocene and late Pleistocene alluvium and minor amounts of beach and dune sand and marine terrace deposits.

Geologic Hazard Zone

The site is mapped within a hazard zone for liquefaction on the State's *Seismic Hazard Zones* maps. The project site is not located in a geologic hazard zone as mapped by the City of San Jose in accordance with the Geologic Hazards Ordinance.

Soils

The project site is underlain by the alluvial soils of the Yolo association as classified by the U.S. Department of Agriculture, Soil Conservation Service. Yolo silty clay loam, 0-2% slopes (YeA) on the easterly portion and Campbell silty clay loam (Ca) on the westerly portion are the specific soil types identified at the site. Yolo silty clay loam soils are found on nearly level alluvial plains in the Santa Clara Valley. Runoff is very slow, drainage is good, and there is a low risk of erosion. Campbell silty clay loam soils are also found on nearly level alluvial plains. These have somewhat poor drainage, low erosion hazard, and slow runoff capabilities.

The liquefaction potential is considered to warrant further geologic study at the environmental review stage. The remainder of the soils conditions can be managed using standard engineering measures and do not require further geologic study at this time as part of the environmental review process, but may require further analysis prior to the issuance of a grading or building permit.

Faulting

There are no identified earthquake faults mapped on the site, and the site is not mapped within a designated Alquist-Priolo Earthquake Fault Zone (formerly Special Studies Zone) or within a City of San Jose Fault Hazard Zone. The nearest active fault zones are the Hayward and Calaveras Faults, which are mapped approximately 5 and 7 miles respectively to the northeast, and the San Andreas Fault, which is mapped approximately 13 miles to the southwest.

Geotechnical Investigation

A geotechnical investigation was conducted to determine the nature of the surface and subsurface soil conditions at the project site, focusing on the liquefaction potential. The investigation included a review of pertinent published and unpublished geotechnical and geologic literature on the site and its vicinity, site reconnaissance, drilling and sampling of the subsurface soils, laboratory testing of selected soil samples, analysis of the data, and formulation of conclusions and recommendations.

Field Investigation

A surface reconnaissance of the site was performed; and five exploratory borings were drilled on the site on October 20 and 25, 2011 to a maximum depth of 50 feet below the existing ground surface (bgs). The approximate locations and logs of the borings are included in the report in the Technical Appendix.

Laboratory Testing

The laboratory testing program was directed towards providing sufficient information for the determination of the engineering characteristics of the site soils so that recommendations could be formulated. Moisture content and dry density, Atterburg limits, shear, grain size distribution analyses, and R-Value tests were performed. The results of the laboratory testing program are included in the report in the Technical Appendix.

Investigative Conclusions

The project site is considered suitable from a geotechnical perspective for construction of the proposed development, providing the report recommendations are incorporated into the project plans and specifications. The primary geotechnical concerns are liquefaction, expansive soils and seismic shaking.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
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 described 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	49, 50,53,54
2) Strong seismic ground shaking?			X		27,52

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
6. GEOLOGY AND SOILS (Cont.). Would the project:					
3) Seismic-related ground failure, including liquefaction?			X		87,101
4) Landslides?				X	50,52
b. Result in substantial soil erosion or the loss of topsoil?				X	51,52
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	87,101
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		87,101
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	28

General

All earthwork and foundation plans and specifications will comply with the recommendations of the geotechnical investigation and pavement design study by United Soil Engineering, Inc. The geotechnical report lists approximately 45 recommendations that are included in the project for site grading, foundation design, slabs-on-grade, retaining walls, drainage, utility trenches and pavement design, most of which reflect standard engineering practices that are required for similar projects. Site-specific conditions are described below.

Expansive Soils

Expansive soils shrink and swell as a result of moisture changes. The surface soils on the site pose a hazard to building foundations because of their high shrink/swell potential. Measures for buildings on expansive soils include drainage control and the use of special foundations. Drainage will be controlled and directed away from the structure and pavements. Non-expansive fill or lime-treated native soil will be used beneath building pads.

Erosion

Development of the project site may subject the soils to accelerated erosion. In order to minimize erosion, erosion control measures such as those described in the Association of Bay Area Governments (ABAG) *Manual of Standards for Erosion & Sediment Control Measures* will be incorporated into the project.

Seismic Hazards

Ground Rupture

Ground rupture (surface faulting) tends to occur along lines of previous faulting. As the site is not located within a State of California Earthquake Fault Hazard Zone and there are no known active faults on the site, the potential for ground rupture due to an earthquake is low.

Seismic Shaking

The maximum seismic event occurring on the site would probably be from effects originating from the Hayward, Calaveras, or San Andreas fault systems. Ground shaking effects can be expected in the area during a major earthquake originating along any of the active faults within the Bay Area. At present, it is not possible to predict when or where movement will occur on these faults. It must be assumed, however, that movement along one or more of these faults will result in a moderate or major earthquake during the lifetime of any construction on this site. The effects on development would depend on the distance to the earthquake epicenter, duration, magnitude of shaking, design and quality of construction, and geologic character of materials underlying foundations.

Structural damage from ground shaking is caused by the transmission of earthquake vibrations from the ground into the structure. Ground shaking is apparently the only significant threat to structures built on the site; however, it is important to note that well-designed and constructed structures that take into account the ground response of the soil or rock in their design usually exhibit minor damage during earthquake shaking.

The proposed structures on the site will be designed and constructed in conformance with the Uniform Building Code Guidelines for Seismic Zone 4 to avoid or minimize potential damage from seismic shaking on the site.

Liquefaction

Soil liquefaction is a phenomenon in which saturated, cohesionless soil layers located close to the ground surface lose strength during cyclic loading, such as imposed by earthquakes. During the loss of strength, the soil acquires a "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands.

The results of the exploratory borings show that the subsurface soil material in Boring B-4 to a depth of 50 feet consists of firm clayey silt to medium dense silty sand to very stiff silty clay. The soil layers were determined to be liquefiable as follows:

1. Not liquefiable to a depth of 7 feet because it is above the groundwater table.
2. Liquefiable from 7 to 13 feet.
3. Not liquefiable from 13 to 50 feet.

The maximum total settlement from liquefaction is estimated to be 2.0 inches and the differential settlement is estimated to be 1.5 inches, which are considered slightly moderate; and the potential for ground surface damage at the site is minimal.

Other Secondary Seismic Effects

Based on the topographic (and lithologic) data, the risk of lurch cracking, lateral spreading, dynamic densification, regional subsidence or uplift, landslides, tsunamis or seiches is considered low at the site.

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Erosion

- A City-approved Erosion Control Plan shall be developed prior to approval of a grading permit or Public Works clearance with such measures as: 1) the timing of grading activities during the dry months, if feasible; 2) temporary and permanent planting of exposed soil; 3) temporary check dams; 4) temporary sediment basins and traps; and/or 5) temporary silt fences. The provisions of the Erosion Control Plan shall be implemented to the satisfaction of the Director of Planning, Building and Code Enforcement.

Seismic Shaking

- The proposed structures on the site will be designed and constructed in conformance with the Uniform Building Code Guidelines for Seismic Zone 4 to avoid or minimize potential damage from seismic shaking on the site.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The implementation of the above standard project conditions would ensure the project will have a **less-than-significant impact** on soils and geology.

7. GREENHOUSE GAS EMISSIONS

SETTING

Greenhouse Gases and Climate Change

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere.

California State law defines greenhouse gases as:

Carbon Dioxide (CO_2)
Methane (CH_4)
Nitrous Oxide (N_2O)
Hydrofluorocarbons
Perfluorocarbons
Sulfur Hexafluoride

The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. The last three of the six identified GHGs are primarily emitted by industrial facilities.

Greenhouse Gas Effects

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Sources of Greenhouse Gas Emissions

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
7. GREENHOUSE GAS EMISSIONS. Would the project:					
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X		29,37
b. Conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X	25,26,28

Standards

The BAAQMD adopted *CEQA Guidelines* significance thresholds for GHG emissions that include quantitative thresholds of significance for GHG emissions. The *Guidelines* provide that a development project, other than a stationary source, would have a significant cumulative impact unless:

- The project can be shown to be in compliance with a qualified Climate Action Plan; or
- Project emissions of CO_2 equivalent GHGs (CO_2e) are less than 1,100 metric tons per year; or
- Project emissions of CO_2 equivalent GHGs are less than 4.6 metric tons per year per service population (residents plus employees).

Greenhouse Gases and Climate Change

The City has adopted a Greenhouse Gas (GHG) Strategy that includes policies and measures to reduce GHG emissions. Adoption of a GHG Strategy provides clearance for GHG impacts of proposed development as per the BAAQMD CEQA Guidelines and CEQA Guidelines Section 15183.5. With the inclusion of the mitigation measures identified in this Initial Study, the project is consistent with the *Envision San Jose 2040 General Plan* and GHG Strategy; therefore, it would have a less-than-significant impact for GHG emissions.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The project's impact on greenhouse gas emissions would be a **less-than-significant impact.**

8. HAZARDS AND HAZARDOUS MATERIALS

SETTING

Wells

There are no known existing active or abandoned water wells located on the project site; however, several groundwater monitoring wells are located beneath the playfields on the easterly portion of the project site.

Pesticides

Aerial photographs from 1939 indicate that row crops may have been planted on the east end of the project site; although by the 1950s, athletic fields associated with the school were present in that location. Since the site has been historically used for agricultural purposes, it is likely that pesticides and/or herbicides were applied to the site in the course of normal operatons. There are no known pesticides currently used on the site for either agricultural production or landscape maintenance operation.

Hazardous Materials

Minor amounts of hazardous materials are currently being used for school maintenance and janitorial activities on the site.

Service Station - Spartan Gas

The project site has never been occupied by a gas station and/or auto repair facility; however, there was a fuel storage site, Spartan Gas, on the property to the east. The former Spartan Gas bulk fuel storage site at 1415 Oakland Road is listed as a Leaking Underground Storage Tank (LUST) site. A-1 Self Storage currently occupies this site. Groundwater impacted with gasoline and diesel petroleum hydrocarbons is present beneath the property and extends beneath the easterly portion of the project site. Several wells associated with the on-going groundwater monitoring and remedial activities are located on the easterly portion of the project site, beneath the playfields.

Underground Storage Tank

The project site does not have underground storage of chemicals. An underground storage tank was removed from the site in 1988 and the case was closed by the Santa Clara Valley Water District in 1993.

The project site is not listed on any local, State and/or Federal regulatory database due to hazardous materials contamination (i.e., leaking underground storage tanks database, etc.).

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
8. 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		26,27,28
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			28,89,90
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		27,28,89
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	58
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	27,71
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	27,71
g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?				X	27
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X	25, 27,61,62

The project site is not located within the Santa Clara County Airport Land Use Commission (ALUC) jurisdiction, nor is it on one of the City's designated evacuation routes. The site also is not located within an area subject to wildfires.

Demolition

The project proposes the demolition of a structure(s) that may contain hazards such as asbestos-containing materials (ACM) or lead based paint (LBP). The structures to be removed should be

surveyed for the presence of ACM and/or LBP. If any suspect ACM are present, they should be sampled prior to demolition and removed in accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Cal-OSHA requirements, if warranted. Notification must also be made to the Bay Area Air Quality Management District (BAAQMD). If any suspect LBP is present, it should be sampled prior to demolition and removed in accordance with EPA, OSHA and BAAQMD requirements, if warranted.

Spartan Gas

A human health risk assessment was conducted by Georestoration, Inc. in June, 2011 for the adjacent property at 1415 Oakland Road. In addition to onsite indoor and outdoor exposures, the assessment considered outdoor air exposure from the remaining contaminants on the site to school children, school employees and other workers on the project site. The assessment concluded that the outdoor air does not appear to pose a significant risk above that posed by the ambient air concentrations.

Pesticides

Because the easterly portion of the site was used for agricultural production up to the 1950s, pesticides may still be present in the soil. While soil disturbance may occur during the construction phase of the parking area, the soils would be capped by the pavement, thereby reducing the potential for exposure to the underlying soils and associated health risk (if the soil is impacted).

Offsite Sources

The school is currently surrounded by industrial uses on the north, south and west. Many of these industrial uses currently use, store or generate hazardous materials and hazardous waste, and hazardous materials are routinely transported through surrounding streets. Quantities of such materials are generally expected to be low to moderate. Most chemical handling and storage at these facilities appear to take place within buildings and not outdoors, where an accidental release would be more likely to affect the project site.

Although these uses and quantities may increase at some point in the future, the potential for accidental release of hazardous materials generally decreases over time due to improved process safety systems and advancements in chemical handling and disposal procedures. Compliance with San Jose Fire Department and Santa Clara County Department of Environmental Health regulations would further lessen the likelihood of an accidental release from these facilities. However, since the site is located in proximity to industrial uses, accidental spills and leaks can occur that might cause an impact to sensitive receptors at the project site.

Emergency Response Procedures

Challenger School has Emergency Response Procedures, a copy of which is included in the Technical Appendix. These procedures include provisions to respond to airborne chemical release incidents, where the buildings will be used as shelter in place protection from the atmosphere. The procedures also include provisions for evacuation of the site, if that is

determined by the Fire Department to be a more appropriate response to a nearby release or other emergency.

Other provisions of the plan include:

- Coordination of emergency notification procedures with the San Jose Fire Department, San Jose Police Department, and Santa Clara County Environmental Health Department.
- Building surveys to determine practical protective actions for specific buildings.
- Procedures for implementing emergency and protective action plans.
- Designation and training of protective action coordinators.
- Procedures for shutting down ventilation equipment, if necessary.
- Areas within the buildings appropriate for emergency assembly.
- Training workers at the school on the steps to be taken during an emergency or implementation of protective actions.
- Procedures for communicating emergency instructions to everyone at the school.
- Procedures for notifying parents in the event of an emergency.
- Emergency supplies stored onsite (medical kits, flashlights, water).

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Asbestos-Containing Materials

- The structure(s) to be removed will be surveyed for the presence of asbestos-containing materials (ACM) at the demolition permit stage; and if any suspect ACM are present, they will be sampled prior to demolition in accordance with NESHAP guidelines, and all potentially friable ACM will be removed prior to building demolition and disposed of by offsite burial at a permitted facility in accordance with NESHAP, Cal-OSHA and BAAQMD requirements.

Lead Based Paint

- The structure(s) to be removed will be surveyed for the presence of lead based paint (LBP) at the demolition permit stage; and if any suspect LBP is present, it will be sampled prior to demolition, and all potential LBP will be removed prior to building demolition and disposed of by offsite burial at a permitted facility in accordance with EPA and OSHA requirements.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Emergency Response Procedures

- The school's Emergency Response Procedures, that include measures such as shelter in place, shall be implemented in the event of an accidental release of hazardous materials in the area.

CONCLUSION

The implementation of the above standard project conditions and mitigation measure would reduce the project's hazards and hazardous materials impact to a **less-than-significant impact with mitigation**.

9. HYDROLOGY AND WATER QUALITY

SETTING

Waterways

There are no waterways on the project site or within 300 feet of the project site.

Flooding

The project site is not within an area of historic flooding, and according to the Federal Emergency Management Agency's (FEMA) *Flood Insurance Rate Maps*, the site is within Zone D, an area with undetermined flooding, but flooding is possible.

Water Quality

Stormwater runoff flows from the project site via the City's storm drainage system to Coyote Creek and then north to the San Francisco Bay.

The portion of the project site where development is planned is currently covered with buildings, paving and landscaping, and is approximately 63 percent impervious surfaces.

Nonpoint Sources

The discharge of stormwater from the City's municipal storm sewer system is regulated primarily under the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act. The San Francisco Bay Regional Water Quality Control Board (RWQCB) implements these regulations at the regional level. New construction in San Jose is subject to the conditions of the City's National Pollutant Discharge Elimination System (NPDES) Permit, which was reissued by the RWQCB in February, 2001. Additional water quality control measures were approved in October, 2001 (revised in 2005), when the RWQCB adopted an amendment to the NPDES Permit for Santa Clara County. This amendment, which is commonly referred to as "C3", requires all new and redevelopment projects that result in the addition or replacement of impervious surfaces totaling 10,000 square feet or more to: 1) include stormwater treatment measures; 2) ensure that the treatment measures be designed to treat an optimal volume or flow of stormwater runoff from the project site; and 3) ensure that stormwater treatment measures are properly installed, operated and maintained. On October 14, 2009, the RWQCB adopted the Municipal Regional Stormwater NPDES Permit No. CAS612008 for the San Francisco Bay Region; this Permit replaces current countywide municipal stormwater permits with a Municipal Regional Permit (MRP) for all 76 Bay Area municipalities in an effort to standardize stormwater requirements in the region.

The City has developed a policy that implements Provision C.3 of the NPDES Permit, requiring new development projects to include specific construction and post-construction measures for improving the water quality of urban runoff to the maximum extent feasible. The City's Post-Construction Urban Runoff Management Policy (6-29) established general guidelines and minimum Best Management Practices (BMPs) for specified land uses, and includes the

requirement of regular maintenance to ensure their effectiveness. Later, the City adopted the Post-Construction Hydromodification Management Policy (8-14) to manage development-related increases in peak runoff flow, volume and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to local rivers, streams and creeks. Implementation of these Policies will reduce potential water quality impacts to less-than-significant levels.

The project site is exempt from the NPDES hydromodification requirements because it is located within a subwatershed or catchment area that is greater than or equal to 65 percent impervious, based on the *Santa Clara Permittees Hydromodification Management Applicability Map.*

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
9. HYDROLOGY AND WATER QUALITY. Would the project:					
a. Violate any water quality standards or waste discharge requirements?			X		28,64,84
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	25,27
c. Substantially alter the existing drainage pattern of the site or area, including 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		25,26
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 that would result in flooding on- or off-site?			X		25,26
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X		26,28
f. Otherwise substantially degrade water quality?			X		26,28

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
9. HYDROLOGY AND WATER QUALITY (Cont.). Would the project:					
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	26,27,63
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X	26,27,63
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X	27,28
j. Be subject to inundation by seiche, tsunami or mudflow?				X	27

Flooding

The project site is not within the limits of potential inundation with the occurrence of a one percent flood and would, therefore, have no impact on 100-year flood flows. The project would not expose people to flood hazards associated with the 100-year flood. . The site is not subject to seiche or tsunami. There is an existing 33-inch City of San Jose storm drainage line in E. Gish Road, which is designed to serve the site in a developed condition. Any excess flows beyond the design capacity would pond onsite.

Erosion

The approximately 11 percent increase in impervious surface on the site would result in an increase in runoff. Increased flow and duration can contribute to downstream streambank erosion. The project would not have a direct outfall into any stream. As described above, project flows would drain through the existing storm drainage system to Coyote Creek, which is approximately 1,500 feet easterly.

Water Quality

The primary impact on water quality would result from the addition of impervious surfaces, such as rooftop, driveway and street runoff. Particulates, oils, greases, toxic heavy metals, pesticides and organic materials are typically found in urban storm runoff. The project's contribution would have a potentially significant impact on water quality. Stormwater runoff could increase under project conditions as the amount of impervious surfaces (buildings and pavement) would increase from approximately 63 percent of the disturbed area to approximately 74 percent, as shown in the following table. The proposed increase in impervious surfaces could increase the amount of stormwater discharged into the storm drainage system and Coyote Creek. In addition, temporary construction-related activities such as clearing, grading, or excavation could result in potentially significant impacts to water quality.

Table 5. Pervious and Impervious Surfaces Comparison

Total Site: 7.23 acres	Total Disturbed Area: 78,888 sf		
Area	Existing Condition of Site Area Disturbed - sf	Proposed Condition of Site Area Disturbed - sf	
		Replaced (or Remain)	New
Impervious Surfaces			
Roof Area(s)	6,597	0	7,680
Trash enclosure	140	0	171
Driveway / Parking	32,022	0	38,629
Walkways	8,156	0	8,799
Streets	0	0	0
Total Impervious Surfaces	**46,915**	**0**	**55,279**
Pervious Surfaces			
Landscape Areas	21,140	0	12,962
Dirt (baseball field)	7,530	0	0
Synthetic Grass	3,303	0	10,647
Total Pervious Surfaces	**31,973**	**0**	**23,609**
Total Proposed Replaced + New Impervious Surfaces:			**55,279**
Total Proposed Replaced + New Pervious Surfaces:			**23,609**

Stormwater runoff and pollution would be reduced by the use of bioswales, as shown on the Stormwater Control Plan, Figure 16. Bioswales are open, shallow channels with vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream points. They both reduce the quantity and improve the quality of runoff. Bioswales would be used within some of the landscaping and common open space areas. These measures would also provide some flow control benefit in conformance with HMP Policy provisions.

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Water Quality

Construction

- Prior to the commencement of any clearing, grading or excavation, the project will comply with the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Construction Activities Permit, to the satisfaction of the Director of Public Works, as follows:

- The applicant will develop, implement and maintain a Storm Water Pollution Prevention Plan (SWPPP) to control the discharge of stormwater pollutants including sediments associated with construction activities; and
- The applicant will file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB).

- The project will incorporate Best Management Practices (BMPs) into the project to control the discharge of stormwater pollutants including sediments associated with construction activities.

- The project applicant will comply with the City of San Jose Grading Ordinance, including erosion and dust control during site preparation and with the City of San Jose Zoning Ordinance requirements for keeping adjacent streets free of dirt and mud during construction. The following specific BMPs will be implemented to prevent stormwater pollution and minimize potential sedimentation during construction:
  - Restriction of grading to the dry season (April 15 through October 15) or meet City requirements for grading during the rainy season;
  - Utilize onsite sediment control BMPs to retain sediment on the project site;
  - Utilize stabilized construction entrances and/or wash racks;
  - Implement damp street sweeping;
  - Provide temporary cover of disturbed surfaces to help control erosion during construction; and
  - Provide permanent cover to stabilize the disturbed surfaces after construction has been completed.

Post-Construction

- The project will comply with the Municipal Regional Stormwater NPDES Permit No. CAS612008, which provides enhanced performance standards for the management of stormwater of new development.

- The project will comply with applicable provisions of the following City Policies – 1) Post-Construction Urban Runoff Management Policy (6-29) which establishes guidelines and minimum BMPs and numerically-sized (or hydraulically-sized) Treatment Control Measures (TCMs) for all projects; and 2) Post-Construction Hydromodification Management Policy (8-14) which provides for hydromodification measures.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The implementation of the above standard project conditions would ensure the project will have a **less-than-significant impact** on hydrology and water quality.

10. LAND USE AND PLANNING

SETTING

General Plan

The land use designation for the project site on the *Envision San Jose 2040 General Plan* Land Use/Transportation Diagram is Combined Industrial/Commercial, as shown on the preceding General Plan Map, Figure 5.

Special Areas

The project site is not located within any of the following special areas:

- Midtown Planned Community and Specific Plan Area
- Jackson – Taylor Planned Residential Community
- Communications Hill Planned Residential Community
- Evergreen Planned Residential Community
- Berryessa Planned Residential Community
- Silver Creek Planned Residential Community
- Alviso Master Plan Area
- Tamien Specific Plan Area
- Downtown Strategy Plan Area
- North San Jose (Rincon de Los Esteros Redevelopment Area)
- Edenvale Redevelopment Area
- Martha Gardens Planned Community

US 101/Oakland/Mabury Road Corridor

The project site is located within the US 101/Oakland/Mabury Road corridor Transportation Development Policy Area. As stated in the *Envision San Jose 2040 General Plan*, the US 101/Oakland/Mabury Road Transportation Development Policy was adopted on December 18, 2007 to support planned transit-oriented development in the US 101/Oakland/Mabury Road corridor. This Transportation Development Policy identifies freeway interchange improvements needed to accommodate future development and does not have specific area boundaries. The intent of this policy is to identify the appropriate interchange improvements, to allow development to proceed ahead of those improvements, and to require payment of a traffic impact fee by new development based upon traffic analysis. Level of Service of a few intersections within the corridor will experience interim congestion below Level D before the completion of the freeway interchange improvements.

Zoning

The project site is currently zoned A(PD), Planned Development District, as shown on the preceding Zoning Map, Figure 6. The project is an application to rezone the site to A(PD) or (CIC) Planned Development District in accordance with the proposed General Development Plan.

Existing and Surrounding Uses

The project site has been developed as an elementary school since about 1928. Previous uses of the site include: agriculture. Land uses surrounding (within 500 feet of) the project site include: industrial to the north; public storage to the east; and industrial to the south and west.

Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP)

As discussed in the preceding Biological Resources section, the City of San Jose, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, Santa Clara County and the cities of Gilroy and Morgan Hill are preparing a joint Habitat Conservation Plan/Natural Community Conservation Plan. The Habitat Plan is being developed in association with the USFWS, CDFG and NMFS and in consultation with stakeholder groups and the general public to protect and enhance ecological diversity and function within more than 500,000 acres of southern Santa Clara County. The Interim Project Referral Process requires the local participating agencies to notify the wildlife agencies (CDFG and USFWS) of projects that have the potential to adversely impact covered species or natural communities, or conflict with the preliminary conservation objectives of the Habitat Plan.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
10. LAND USE AND PLANNING. Would the project:					
a. Physically divide an established community?				X	25,26
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, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X			29,68
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X	25,26,28

Projects that have the potential to physically divide an established community include new freeways and highways, major arterial streets, and railroad lines. The proposed project will not physically divide an established community.

General Plan

The site has a land use designation of Combined Industrial/Commercial with a Density:FAR up to 12.0 (1 to 24 stories) in the *Envision San Jose 2040 General Plan* Land Use/Transportation Diagram. As stated in the General Plan text, this category allows a significant amount of flexibility for the development of a varied mixture of compatible commercial and industrial uses, including hospitals and private community gathering facilities. Properties with this designation are intended for commercial, office, or industrial developments or a compatible mix of these uses. This designation occurs in areas where the existing development pattern exhibits a mix of commercial and industrial land uses or in areas on the boundary between commercial and industrial uses.

Development intensity can vary significantly in this land use designation based on the nature of specific uses likely to occur in a particular area. In order to maintain an industrial character, small suburban strip centers are discouraged in this designation, although larger big-box type developments may be allowed because they mix elements of retail commercial and warehouse forms and uses.

While this designation potentially accommodates a wide variety of uses and building forms, more specific guidance should be provided through the application of the Zoning Ordinance in order to establish use and form standards that will promote the development of a cohesive employment area across multiple adjoining properties that share this designation.

The project will conform to the Combined Industrial/Commercial Land Use/Transportation Diagram designation with the inclusion of mitigation measures identified in this Initial Study. The project consists of a privately-operated elementary school that is a commercial enterprise.

Although private elementary schools are not allowed in the Combined Industrial/Commercial Zoning District until the amendment to the Zoning Ordinance approved on March 13, 2012 becomes effective on April 14, 2012, which would allow a private elementary school through approval of a Conditional Use Permit, they are allowed in the subject Planned Development Zoning District with the inclusion of environmental mitigation measures stated in the Planned Development Zoning District's General Development Standards. With the inclusion of these measures, the proposed expansion of the private elementary school use will be compatible with the surrounding industrial uses.

Compatibility

The project would not change the land use on the site, which is a private school. Although uses adjacent to the site are generally industrial in nature, impacts associated with these uses are not expected to be significant. As described in the preceding Hazards and Hazardous Materials section, the school has an emergency plan for potential accidents in the area. This use would have a minor change in the view of the site, and would generate increases in traffic, noise and air pollution in the area that would not be significant.

Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP)

The project site does not meet the threshold that requires an interim Habitat Conservation Plan project referral.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Emergency Response Procedures

- The school's Emergency Response Procedures, that include measures such as shelter in place, shall be implemented in the event of an accidental release of hazardous materials in the area.

Sound Attenuation

- The portable classrooms shall be designed with sound attenuation walls, windows and doors, and proper ventilation to reduce interior levels to 45 dB DNL or lower.

- Prior to issuance of building permits, the developer shall retain a qualified acoustical consultant to check the building plans for all units to ensure that interior noise levels will be attenuated to 45 dB DNL to the satisfaction of the Director of Planning, Building and Code Enforcement.

Traffic Impact Fee

- The Traffic Impact Fee established by the US 101/Oakland/Mabury Transportation Development Policy (TDP) shall be paid to fund and construct the planned interchange improvements at the US 101/Oakland Road interchange.

CONCLUSION

With the inclusion of practices in the updated Emergency Response Procedures, sound attenuation construction for the portable classrooms, and the payment of the Traffic Impact Fee, the proposed project will have a less-than-significant impact on land use and planning.

11. MINERAL RESOURCES

SETTING

Extractive resources known to exist in and near the Santa Clara Valley include cement, sand, gravel, crushed rock, clay and limestone. Santa Clara County has also supplied a significant portion of the nation's mercury over the past century. Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board has designated the Communications Hill Area, bounded generally by the Southern Pacific Railroad, Curtner Avenue, State Route 87 and Hillsdale Avenue, as the only area in San Jose containing mineral deposits that are of regional significance as a source of construction aggregate materials.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
11. 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	27,29,47
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	27,29,47

Since the project site is outside of the Communications Hill area, there will be no impact on any known important mineral resource.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The proposed project would have **no impact** on mineral resources.

12. NOISE

SETTING

Existing Noise Sources

Noise intrusion over the site originates primarily from vehicular traffic sources along Interstate 880 (I-880), U.S. 101, and Oakland Road. The City of San Jose General Plan establishes a policy of requiring noise mitigation from transportation noise for residential land use where the exterior level exceeds 60 dB DNL and/or the interior level exceeds 45 dB DNL. The project site is located in the 65 to 70 dB DNL traffic noise level area on the *Envision San Jose 2040 Environmental Noise Assessment 2008 and 2035 Maps.*

ALUC Noise Zone

The project site is not located within an Airport Land Use Commission (ALUC) Noise Zone (65 dB CNEL).

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
12. 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			26,29,70
b. Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?				X	25,27
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X	25,26,28
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X		25,26,28
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 expose people residing or working in the project area to excessive noise levels?				X	27,71
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	27,71

Standards

Noise criteria that apply to the project are included in the City of San Jose General Plan, which establishes a policy of requiring noise mitigation from transportation noise for public/quasi-public (school) land use where the exterior level exceeds 60 dB DNL and/or the interior level exceeds 45 dB DNL. It is recognized, however, that attainment of the exterior noise quality levels in the vicinity of San Jose International Airport, the Downtown Core Area and along major roadways may not be achieved within the time frame of the General Plan. In these areas, an exterior noise goal of 65 dB DNL is acceptable where it is not feasible to reduce the exterior noise level to 60 dB DNL.

Exterior and Interior Noise Exposures

The project site is located in the 65 to 70 dB DNL traffic noise level area on the *Envision San Jose 2040 Environmental Noise Assessment 2008 and 2035 Maps.* These maps do not take into account shielding from intervening barriers or structures; therefore, actual levels on the site are expected to be lower. The project does not add any new outdoor activity areas. Exterior noise exposures up to 65 dB DNL are acceptable according to the General Plan, since the noise exceedance is generated from a major roadway. The proposed portable classrooms will be designed and constructed to attenuate exterior noise to acceptable interior levels.

Project-Generated Noise

The proposed private school would generate vehicular traffic noise and periodic noise from children and school activities that would not be significantly different from noise generated by the current school operations.

Temporary Construction Noise

During construction, the site preparation and construction phase would generate temporary sound levels ranging from approximately 70 to 90 dBA at 50 foot distances from heavy equipment and vehicles. These construction vehicles and equipment are generally diesel powered, and produce a characteristic noise that is primarily concentrated in the lower frequencies. The powered equipment and vehicles act as point sources of sound, which would diminish with distance over open terrain at the rate of 6 dBA for each doubling of the distance from the noise source. Construction noise could affect existing school operations if it occurs during school times.

Standard Project Conditions

The following standard project conditions will be included in the development permit.

Temporary Construction Noise

- If construction activities are conducted during scool times, they will be coordinated with school officials to minimize potential impacts or disruption to school activities.

- The contractor will use "new technology" power construction equipment with state-of-the-art noise shielding and muffling devices. All internal combustion engines used on the project

site will be equipped with adequate mufflers and will be in good mechanical condition to minimize noise created by faulty or poorly maintained engines or other components.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Sound Attenuation

- The portable classrooms shall be designed with sound attenuation walls, windows and doors, and proper ventilation to reduce interior levels to 45 dB DNL or lower.

- Prior to issuance of building permits, the developer shall retain a qualified acoustical consultant to check the building plans for all units to ensure that interior noise levels will be attenuated to 45 dB DNL to the satisfaction of the Director of Planning, Building and Code Enforcement.

CONCLUSION

The implementation of the above standard project conditions and mitigation measures would reduce the project's impact on noise to a **less-than-significant impact with mitigation.**

13. POPULATION AND HOUSING

SETTING

The population of the City of San Jose is approximately 958,789 (January 1, 2011).

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
13. 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	25,26,28
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X	25,26
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X	25,26

The project would not displace nor add any existing housing units.

Growth Inducement

Direct growth inducing impacts include the construction of streets and utilities that would provide access to or capacity for additional undeveloped land. The site is bordered by developed industrial uses. The project would not have a direct growth inducing impact. Indirect growth inducing impacts include increases in population and economic impacts. There would be short-term increases in employment in the construction industry. The project would not have a significant indirect growth inducing impact.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The proposed project would have **no impact** on population and housing.

14. PUBLIC SERVICES

SETTING

Schools
The project site is located in the Orchard School District (K-8) and the East Side Union High School District (9-12). The existing use on the project site is a private school.

Parks
There are no developed City of San Jose parks within walking distance (3/4 mile) of the project site.

Fire Protection
The project site is in the service area of the San Jose Fire Department. The closest fire station is Station No. 5, located at 1380 N. 10th Street, approximately 0.4 mile westerly of the site.

Police Protection
The project site is served by the San Jose Police Department (SJPD). The project site is within the Central Division of the SJPD's service area.

Libraries
The project site is served by the San Jose Public Library System. The closest branch library is the Educational Park Branch, located at 1770 Educational Park Drive, approximately 4.0 miles easterly of the site.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
14. PUBLIC SERVICES. Would the project:					
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental 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: Fire protection?			X		28
Police protection?			X		28
Schools?			X		28
Parks?			X		28
Other Public Facilities?			X		28

Schools
The project would have no direct impact on schools, but could have a secondary impact should any of the employees move into the district(s) or petition that their child(ren) be accepted into district schools under Allen Bill provisions. The Allen Bill only applies to elementary-aged school children.

Parks
The City of San Jose provides parks and recreation facilities within the city. The project is not expected to have an impact on City park and recreation facilities, although employees could utilize them during lunch periods or after work. The City parks in the area are adequate to serve the project employees.

Fire Protection
The San Jose Fire Department provides fire protection for the city. No additional fire personnel or equipment are expected to be necessary to serve the project.

Police Protection
The San Jose Police Department provides police protection for the city. No additional police personnel or equipment are expected to be necessary to serve the project.

Libraries
The San Jose Public Library System provides library services for the city. No additional library facilities or personnel are expected to be necessary to serve the project.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The project's impact on public services would be a **less-than-significant impact**.

15. RECREATION

SETTING

There are no developed City of San Jose parks within walking distance (3/4 mile) of the project site.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
15. 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		72,73
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X		26,28

The City of San Jose provides parks and recreation facilities within the city. The project is not expected to have an impact on City park and recreation facilities, although employees could utilize them during lunch periods or after work. The City parks in the area are adequate to serve the project employees.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The project's impact on recreation would be a **less-than-significant impact**.

16. TRANSPORTATION / TRAFFIC

Hexagon Transportation Consultants, Inc. conducted a transportation impact analysis dated February 14, 2012 that is included in the Technical Appendix.

SETTING

Street System

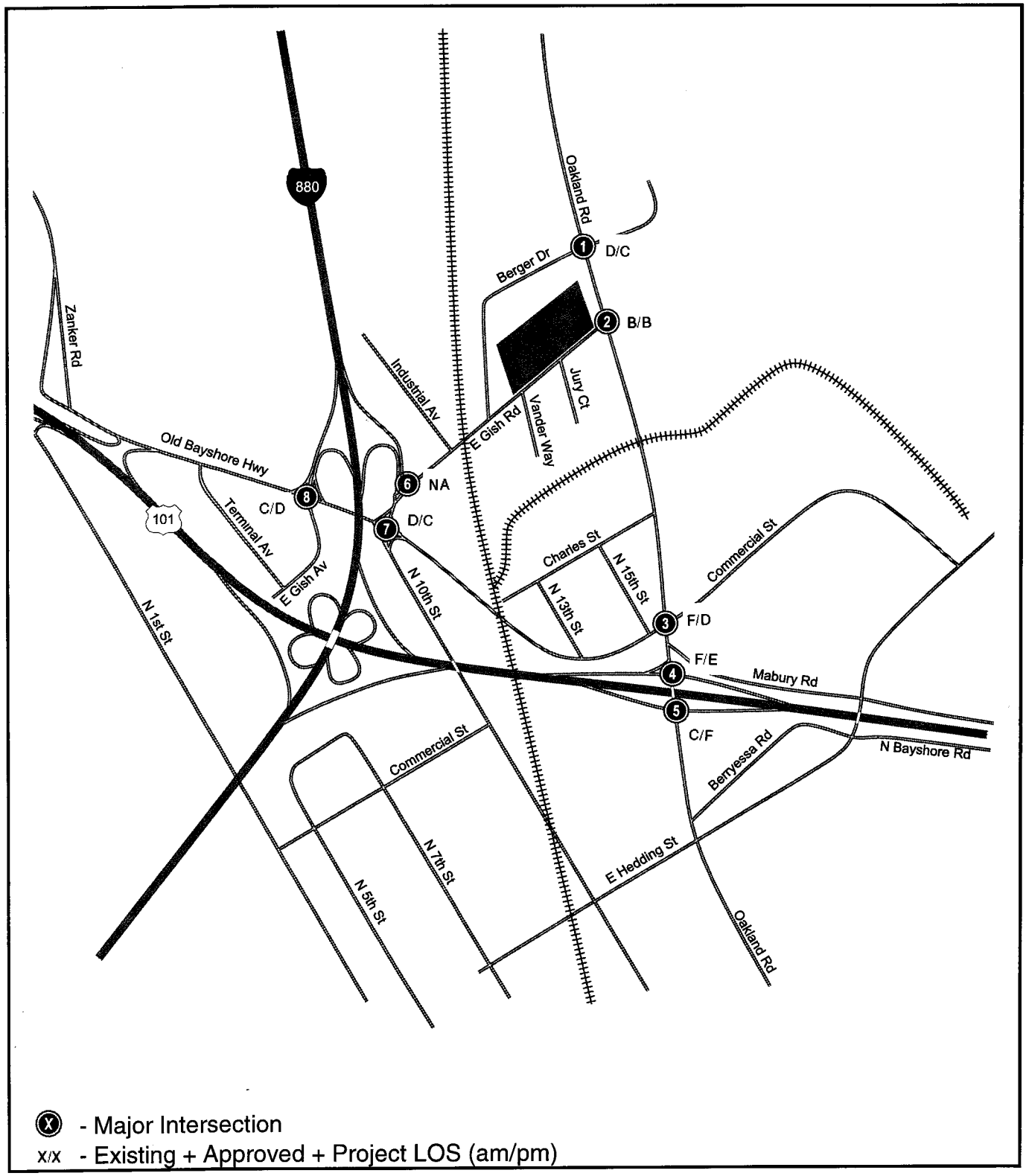
Regional access to the site is provided by US 101 and Interstate 880 (I-880). Local access to the site is provided via Gish Road, Oakland Road, Old Bayshore Highway, N. 10th Street, and Berger Drive. Gish Road is an east-west two-lane road that extends from Oakland Road in the east to the I-880 northbound ramps; Gish Road provides direct access to the existing Challenger School via one inbound driveway, one outbound driveway, and one full access driveway.

Level of Service

In an urban street network, the critical determinants for overall traffic conditions are the operational characteristics of the major intersections. To establish a standard frame of reference when describing traffic flow, the concept of level of service is used. As described by the *Highway Capacity Manual*, the level of service of a facility is a theoretical traffic volume determined by its physical and operational characteristics and by stipulated conditions of traffic flow. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time, which is measured as the average stopped delay per vehicle. Flow conditions vary from unrestricted at Level A to forced flow at Level F, as described below.

Level of Service	Type of Flow	Traffic Conditions	V/C Ratio	Delay (sec.)
A	Free	No approach phase fully utilized. No vehicle waits longer than one red indication.	<0.60	≤10.0
B	Stable	An occasional approach phase is fully utilized.	0.60-0.69	10.1-20.0
C	Stable	Occasional drivers may have to wait through more than one red signal. Backups may develop behind turning vehicles.	0.70-0.79	20.1-35.0
D	Approaching Unstable	Delays to vehicles may be substantial during short peaks, but periodic clearance of queues prevents excessive backups from developing.	0.80-0.89	35.1-55.0
E	Unstable	Capacity, with sustained delays and backups.	0.90-0.99*	55.1-80.0
F	Forced	Excessive delay.	Varies	>80.0

* In general, V/C ratios could not be greater than 1.00. However, if future demand projections are considered for analytical purposes, a ratio greater than 1.00 might be obtained, indicating that the projected demand would exceed the capacity.



Traffic Impacts

Figure 20

Existing Conditions

Seven major signalized intersections that would be affected by the project are reviewed. Local conditions and project impacts are evaluated by TRAFFIX, which is a computer program based on the *Highway Capacity Manual* method for signalized intersections. TRAFFIX evaluates signalized intersection operations on the basis of average delay time for all vehicles at the intersection. The General Plan/Transportation Level of Service Policy requires that the minimum overall performance of City streets during peak travel periods should be level of service "D". Level of service calculations were performed for five City intersections and for two Congestion Management Program (CMP) intersections. The CMP traffic level of service standard is Level E or better.

The major intersections were evaluated under existing and future traffic conditions to determine their level of service. Future conditions were determined by adding traffic projections from approved projects that have not been occupied, as provided by the City Department of Public Works Development Services Division, to the existing condition. The following table lists the weighted average delays and equivalent levels of service for the existing and existing plus approved morning and evening peak hours.

Table 6. Existing Levels of Service

		Existing		Existing + Approved	
Intersection	Peak Hour	Delay* *(sec.)*	LOS	Delay* *(sec.)*	LOS
Oakland Road and Berger Drive	a.m.	38.0	D	37.7	D
	p.m.	30.6	C	30.4	C
Oakland Road and Gish Road	a.m.	14.8	B	14.4	B
	p.m.	14.4	B	13.4	B
Oakland Road and Commercial Street	**a.m.**	**88.3**	**F**	**138.9**	**F**
	p.m.	35.2	D	45.9	D
Oakland Road and US 101 North Ramps**	**a.m.**	**65.0**	**E**	**201.0**	**F**
	p.m.	21.8	C	69.7	E
Oakland Road and US 101 South Ramps**	a.m.	24.7	C	30.1	C
	p.m.	30.3	C	**95.9**	**F**
I-880 Ramps and Old Bayshore Hwy (East)	a.m.	34.1	C	36.0	D
	p.m.	22.2	C	25.3	C
I-880 Ramps and Old Bayshore Hwy (West)	a.m.	30.3	C	32.0	C
	p.m.	32.6	C	37.1	D

*Delay – Average delay for the whole intersection in seconds. LOS = Level of Service

**CMP intersection

City Intersections

Under the existing plus approved condition, four City intersections operate at an acceptable level of service "D" or better during both the a.m. and p.m. peak hours. One City intersection currently operates at an unacceptable Level F during the a.m. peak hour, as shown in the above table in **bold**:

Oakland Road and Commercial Street

CMP Intersections

Under the existing plus approved condition, the following two CMP intersections operate at unacceptable levels of service (Level F) during the a.m. and/or p.m. peak hours, as shown in the above table in **bold**:

Oakland Road and US 101 North Ramps (a.m.)
Oakland Road and US 101 South Ramps (p.m.)

Freeway Segment Analysis

Six freeway segments in both directions (northbound and southbound) in the vicinity of the project site were evaluated. The level of service for a given freeway segment is estimated based on vehicle density, as described in the report in the Technical Appendix. All twelve of the directional freeway segments analyzed currently operate at an unacceptable level of service (Level F) during at least one of the peak hours.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
16. TRANSPORTATION/TRAFFIC. Would the project:					
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		X			78,102
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?		X			80,102

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
16. TRANSPORTATION/TRAFFIC (Cont.). Would the project:					
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	27,28
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?				X	26,28
e. Result in inadequate emergency access?				X	26,28
f. Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X	26,29,102

Trip Generation

The project traffic generation is estimated in the following table.

Table 7. Project Trip Generation

Land Use	Size (No. of Students)	A.M. Peak Hour Trips In	A.M. Peak Hour Trips Out	A.M. Peak Hour Trips Total	P.M. Peak Hour Trips In	P.M. Peak Hour Trips Out	P.M. Peak Hour Trips Total
Challenger School	160	98	89	187	35	45	80

Trip Distribution and Assignment

The project-generated trips were distributed and assigned to the local street system in accordance with the existing travel patterns to and from the school, based on school route survey forms distributed to parents/caregivers of all currently-enrolled students as detailed in the report in the Technical Appendix.

Significant Intersection Impacts

City Intersections

A project in San Jose is said to create a significant adverse impact on traffic conditions at a signalized City intersection if:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions; or
2. The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of project trips causes both the critical movement delay at the intersection to increase by four (4) or more seconds **and** the volume-to-capacity (V/C) ratio to increase by 0.01 or more.

CMP Intersections

A project in San Jose is said to create a significant adverse impact on traffic conditions at a signalized CMP intersection if:

1. The level of service at the intersection degrades from an acceptable LOS E or better under background conditions to an unacceptable LOS F under project conditions; or
2. The level of service at the intersection is an unacceptable LOS F under background conditions and the addition of project trips causes both the critical movement delay at the intersection to increase by four (4) or more seconds **and** the volume-to-capacity (V/C) ratio to increase by 0.01 or more.

Project Impacts

The major intersections were analyzed for changes in average delay and level of service with the addition of project traffic. The average delays and corresponding levels of service are listed in the following table, and the levels of service are shown on the following Traffic Impacts map.

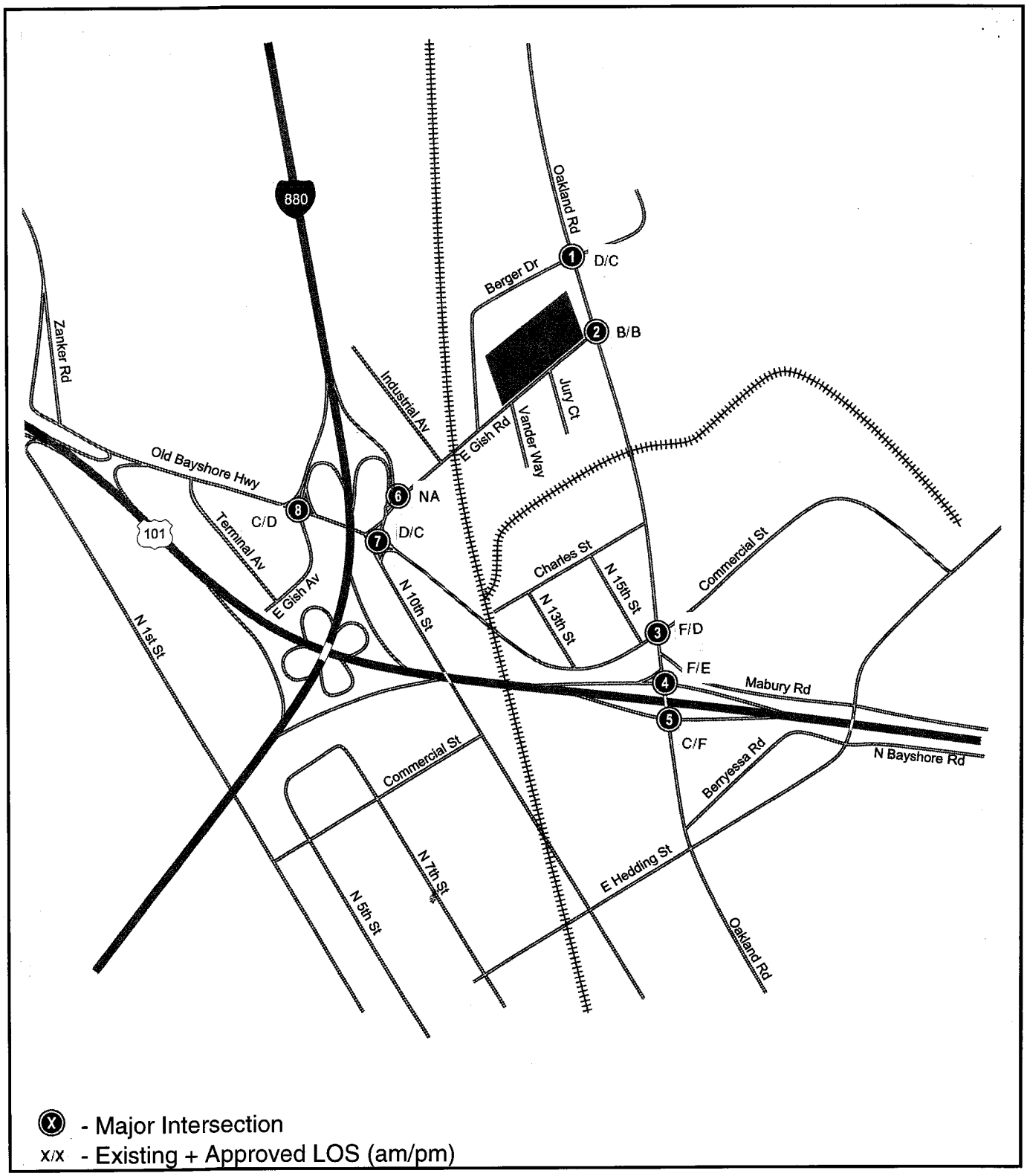
Table 8. Project Levels of Service

Intersection	Peak Hour	Exist. + Project Delay (*sec.*)	LOS	Ex. + Approved Delay* (*sec.*)	LOS	Ex. + App. + Project Delay* (*sec.*)	LOS	Δ Crit. Delay (*sec.*)	Δ Crit. V/C Ratio
Oakland Road and	a.m.	38.1	D	37.7	D	38.1	D	0.3	0.025
Berger Drive	p.m.	30.7	C	30.4	C	30.7	C	0.5	0.011
Oakland Road and	a.m.	15.2	B	14.4	B	15.3	B	1.3	0.078
Gish Road	p.m.	14.6	B	13.4	B	13.9	B	0.7	0.011
Oakland Road and	a.m.	88.9	F	138.9	F	140.6	F	3.2	0.007
Commercial Street	p.m.	35.2	D	45.9	D	46.0	D	0.1	0.002
Oakland Road and	a.m.	66.1	E	201.0	F	**203.6**	**F**	**4.5**	**0.010**
US 101 No. Ramps**	p.m.	21.8	C	69.7	E	70.5	E	1.3	0.003
Oakland Road and	a.m.	24.8	C	30.1	C	30.2	C	0.2	0.002
US 101 So. Ramps**	p.m.	30.3	C	95.9	F	96.5	F	0.9	0.002
I-880 Ramps and	a.m.	34.2	C	36.0	D	36.4	D	0.6	0.010
Old Bayshore (E)	p.m.	22.2	C	25.3	C	25.4	C	0.2	0.001
I-880 Ramps and	a.m.	30.4	C	32.0	C	32.7	C	1.1	0.012
Old Bayshore (W)	p.m.	32.7	C	37.1	D	37.2	D	0.2	0.002

* Delay = Average delay for the whole intersection in seconds.
** CMP intersection.
Note: Critical delay is the delay for the critical movement.
LOS = Level of Service
V/C = Volume to Capacity

City Intersections

The existing plus approved levels of service at the five City intersections would remain unchanged with the addition of project traffic; and the project would not add four seconds or more to the critical delay and 0.010 or more to the critical V/C ratio at the intersection that is projected to operate at Level E or F.



Major Street System

Figure 19

CMP Intersections

The existing plus approved level of service at the intersection of Oakland Road and US 101 South Ramps would remain unchanged with the addition of project traffic; and the project would not add four seconds or more to the critical delay and 0.010 or more to the critical V/C ratio at the intersection that is projected to operate at F. However, the intersection level of service during the a.m. peak hour at Oakland Road and US 101 North Ramps is projected to remain at Level F with the addition of project traffic, but is projected to increase the critical delay by 4.5 seconds and is projected to increase the critical V/C ratio by 0.010. Therefore, the project's traffic impacts would be significant at this intersection and mitigation measures are required.

US 101/Oakland/Mabury Transportation Development Policy (TDP)

The City of San Jose has identified operational problems along the Oakland Road corridor at the US 101 interchange, which are due primarily to the capacity constraints of the interchange. As a result, the City has identified two key capital improvement projects: 1) modification of the US 101/Oakland Road interchange, including improvements to the Oakland Road and Commercial Street intersection; and 2) construction of a new US 101/Mabury Road interchange. Both interchange improvements will create additional capacity for accessing and crossing US 101, which will be crucial to accommodate future growth in the vicinity. To fund these necessary interchange improvements, the City has developed the US 101/Oakland/Mabury Transportaton Development Policy (TDP).

Since the proposed Challenger School expansion project would send some p.m. peak hour vehicle trips through the US 101/OaklandRoad interchange, the project would be required to pay a fair share contribution toward the planned interchange improvements. Payment of the TDP traffic impact fee also would serve as mitigation for the project, since the project would result in significant impacts at the Oakland Road and US 101 North Ramps intersection. Based on the TDP formula, the project would be required to pay a traffic impact fee of $619,307 prior to Public Works clearance. Note that while the significant project impact would occur during the a.m. peak hour, the TDP traffic impact fee is based on p.m. peak hour project-generated trips; the planned interchange improvements would also address issues that occur during the a.m. peak hour of traffic.

Freeway Segment Analysis

Traffic volumes on the freeway segments under existing plus project conditions were estimated by adding project trips to the existing volumes obtained from the 2010 CMP Annual Monitoring Report. The results show that the project would not cause an increase in traffic volumes of more than one percent on any of the studied freeway segments; therefore, the project would not have a significant impact on any of the freeway segments.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Oakland Road and US 101 North Ramps

- The Traffic Impact Fee established by the US 101/Oakland/Mabury Transportaton Development Policy (TDP) shall be paid to fund and construct the planned interchange improvements at the US 101/Oakland Road interchange.

CONCLUSION

The implementation of the above mitigation measure would reduce the project's impact on transportation / traffic to a **less-than-significant impact with mitigation**.

17. UTILITIES AND SERVICE SYSTEMS

SETTING

Sanitary Sewers
There is an existing 12-inch City of San Jose sanitary sewer in E. Gish Road that currently serves the project site.

Wastewater Treatment
Wastewater treatment for the City of San Jose is provided by the San Jose-Santa Clara Water Pollution Control Plant (WPCP). Capacity is expected to be available to serve the project based on the current capacity of 167 million gallons per day (MGD). The Water Pollution Control Plant is currently operating under a 120 MGD dry weather flow trigger. This requirement is based upon the State Water Resources Board and the Regional Water Quality Control Board (RWQCB) concerns over the effects of additional freshwater discharges on the saltwater marsh habitat, and pollutants loading to the South Bay from the WPCP. A Growth Management System regulates new development to assure that the capacity is not exceeded. There are programs and services in place to help minimize flows to the Plant and, while plans are in place to ensure Plant compliance with the 120 mgd trigger, those plans call for conservation and water recycling as strategies for ongoing compliance.

Water Supply
There is an existing San Jose Water Company water line in E. Gish Road that currently serves the project site.

Storm Drainage Facilities
There is an existing 33-inch City of San Jose storm drainage line in E. Gish Road that currently serves the project site.

Solid Waste / Recycling
There are several solid waste disposal service companies available for school purposes in San Jose. They are using the Newby Island sanitary landfill disposal site operated by International Disposal Company, and/or the Kirby Canyon disposal site operated by Waste Management of California, Inc. Newby Island has an estimated service life based on remaining capacity and contractual commitments to 2023. Kirby Canyon has an estimated service life of up to 50 years.

Gas and Electric Service
Natural gas and electric services for San Jose are provided by Pacific Gas and Electric Company. There are existing services in the area.

Telephone Service
There are several telephone service providers available for school purposes. There is existing service in the area.

IMPACT AND MITIGATION

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT	SOURCES
17. UTILITIES AND SERVICE SYSTEMS. Would the project:					
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X		28,84
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		28
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X		28
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X		28
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		28
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X		28
g. Comply with federal, state and local statutes and regulations related to solid waste?			X		28

There would be no significant change in utility usage with the addition of 8 portable classrooms and an increase in enrollment of 160 students.

MITIGATION MEASURES INCLUDED IN THE PROJECT

None required.

CONCLUSION

The project's impact on utilities and service systems would be a **less-than-significant impact**.

18. MANDATORY FINDINGS OF SIGNIFICANCE

ISSUES	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
18. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to (1) degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal or (6) 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		

Impact Summary

As discussed in previous sections, the proposed project would have environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly, with respect to air quality, hazards and hazardous materials, hydrology and water quality, and noise. With the implementation of the previously listed Standard Project Conditions and Mitigation Measures, these impacts would be reduced to less-than-significant impacts with mitigation.

Cumulative impacts from the 7 trips through the Oakland Road and Commercial Street intersection through the US 101/Oakland/Mabury Road corridor would not be cumulatively considerable.

APPENDIX

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INITIAL STUDY / EIR

DISCLOSURE STATEMENT

APPLICANT	Challenger School
PROJECT TITLE	Challenger School – Berryessa Expansion PDC11-023 and PD11-022
PROJECT LOCATION	Northwest side of E. Gish Road, approximately 500 feet southwest of Oakland Road (711 E. Gish Road)

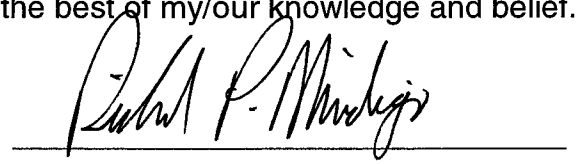
Mindigo & Associates has prepared the above Initial Study or Draft Environmental Impact Report, doing business as:

An Individual

The above-named, now has or will have the following direct or indirect economic interest or interests in the development of, or, after its completion, the operation of the project for which the attached Initial Study or Draft EIR has been submitted:

None, Except Fees For The Preparation Of Environmental Studies

I/We declare, under penalty of perjury, that the statements furnished above pertaining to the environmental effects of a proposed project and to my/our economic interest or interests in that project are complete, true and correct to the best of my/our knowledge and belief.



Mindigo & Associates
Environmental Consultants
1984 The Alameda, Suite 1
San Jose, CA 95126

In order to achieve maximum objectivity in the Environmental Review process, the City requires persons, including individuals, firms, associations, partnerships, trusts, corporations, or companies, who submit to the City applications for Environmental Clearance, or who submit to the City a proposed Draft EIR, to disclose any economic interest in the project which they have derived or will or might derive from the development of, or, after its completion, the operation of the project. This application shall apply to consultants and subcontracted consultants who prepare all, or portions of, the Environmental Clearance document or the proposed Draft EIR. Each proponent, consultant, and subcontracted consultant shall prepare a disclosure statement as presented in this application.

You have an indirect economic interest in the project if your spouse or dependent child or agent acting on your behalf owns or otherwise has an economic interest in the site upon which the project is to be developed or if your spouse or dependent child or agent acting on your behalf has a present or future economic interest in the development of, or, after its completion, operation of the project. Briefly but specifically describe each of your direct and indirect economic interests in the project. You need but disclose the nature of your economic interest in the project, not the amount of said interest. If you have no interest, simply write "none" in the space provided.

Persons and Organizations Consulted

1. **Stephanie Chong**, Project Manager, Habitec Architecture and Planning
2. **Marissa Webb**, Habitec Architecture and Planning
3. **Hanh Nguyen**, Associate, Habitec Architecture and Planning
4. **Al Johnson**, Regional Facilities Manager, Challenger School
5. **Karen Mack**, Principal Engineering Technician, Transportation Department, City of San Jose

6 to 24. Not used.

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Consultants' Reports

100. **Assessment of Five (5) Trees Proposed to be Removed Per Site Plan at Challenger School, 711 East Gish Road, San Jose, CA**, Walter Levison, Consulting Arborist, November 15, 2011

101. **Geotechnical Investigation and Pavement Design, Proposed Improvements, Challenger School, 711 East Gish Road, San Jose, California**, United Soil Engineering, Inc., November 4, 2011

102. **Challenger School Expansion Transportation Impact Analysis**, Hexagon Transportation Consultants, Inc., February 14, 2012

103. **Historical and Architectural Evaluation Considering the Challenger–Berryessa School, 711 E. Gish Road, San Jose, Santa Clara County, California**, Urban Programmers, March 1, 2012

104. **Emergency Response Procedures for Berryessa Teachers**, Challenger School, March 15, 2012

TECHNICAL APPENDIX

TECHNICAL APPENDIX

A copy of the following consultants' report, which was prepared for the Challenger School Gish Road Campus and is summarized in this Initial Study, is included in this Technical Appendix. In accordance with the State CEQA Guidelines, this report is incorporated by reference and not reproduced in the body of the Initial Study in order to reduce the size and number of pages.

Assessment of Five (5) Trees Proposed to be Removed Per Site Plan at Challenger School, 711 East Gish Road, San Jose, CA, Walter Levison, Consulting Arborist, November 15, 2011

Historical and Architectural Evaluation Considering the Challenger-Berryessa School Site, 711 E. Gish Road, San Jose, Santa Clara County, California, Urban Programmers, March 1, 2012

Geotechnical Investigation and Pavement Design, Proposed Improvements, Challenger School, 711 East Gish Road, San Jose, California, United Soil Engineering, Inc., November 4, 2011

Challenger School Expansion Transportation Impact Analysis, Hexagon Transportation Consultants, Inc., February 14, 2012

Emergency Response Procedures for Berryessa Teachers, Challenger School, March 15, 2012

Assessment of Five (5) Trees Proposed to be Removed Per Site Plan at Challenger School 711 East Gish Road San Jose, CA

Prepared at the Request of:

Habitec Architecture and Planning
111 W. Saint John Street, Suite 950
San Jose, CA

Site Visit:

Walter Levison, Consulting Arborist (WLCA)

11/7/2011

Report:

WLCA

11/8/2011
Revised 11/15/2011

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1.0 Background and Assignment 3
2.0 Summary 3
3.0 Suitability for Preservation 4
4.0 Replacement Ratios and Sizes 4
5.0 Consultant's Qualifications 5
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9.0 Tree Location Map 8
10.0 Photographs of Ordinance Size Trees 9

Attached: Excel tree data charts

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1.0 Background and Assignment

I was requested by Habitec to tag, assess, and comment in writing on five (5) proposed to be removed for the proposed Challenger School phase 1 site plan which involves renovation of the west side of the property only.

The below report complies with City planning department submittal guidelines which require that tree data include 'suitability for preservation' factor determination (irrespective of proposed development). These guidelines also require that I determine mitigation ratios and replacement tree sizes based on the San Jose mitigation planting matrix.

I visited the site on 11/7/2011, tagged the trees, and recorded standard tree data. The tree locations were then marked onto a site plan sheet provided by the applicants (see tree location map markup, this report).

All trees are proposed to be removed per the proposed site plan. Therefore, tree protection and maintenance recommendations were not included in this report.

Digital images of ordinance size trees (as required by planning division), and Excel tree data charts, are located at the end of this report.

Note that tree #6 was added as a tree to be removed, after 11/8/2011 when this report was originally submitted as final. The diameter, size, and condition of this non-ordinance size tree was determined using Google Streetview.

2.0 Summary

1. Protected Trees: There are four (4) protected 'ordinance size' trees measuring 18 inches diameter or greater at 2 feet above grade. These are trees #1, 3, 4, and 5. All four of these trees are proposed to be removed.

2. Non-Protected Trees: Tree #6 is a non-protected size tree, also proposed to be removed.

3. Tree Details:

   a) Tree #1: A large California native black walnut specimen located near an existing overhead PG&E facility. This tree is in fair overall condition.

   b) Tree #3: A large Chinese elm in good overall condition, located in an existing children's play area.

   c) Tree #4: A large California (non native) pepper tree in fair overall condition. This tree exhibits extensive decay in the mainstem, although this decay may not actually diminish the tree's structural stability (advanced decay assessment is outside the scope of this initial assignment).

   d) Tree #5: A large California (non native) pepper tree in poor overall condition. This tree has failed in the past, causing damage to the adjacent existing auditorium building. The building side of the canopy has been severely pruned back, causing large diameter pruning cut wounds (see images, this report).

   e) Tree #6: A moderate size Italian cypress specimen in good overall condition at the west entrance to the school. This tree provides little in the way of shading.

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3.0 Suitability for Preservation

These ratings are required as part of the planning division submittal standards, and are based on projected tree longevity, species branch breakage strength, structural and health condition, species resistance to pest and disease pathogens, drought tolerance, and other factors not related to proposed development.

Suitability for preservation is not related to leaf drop, fruit drop, or other related nuisances.

Tree Number	Suitability for Preservation
Tree #1	Good
Tree #3	Good
Tree #4	Poor to Moderate
Tree #5	Poor
Tree #6	Good

4.0 Replacement Ratios and Sizes

This matrix is prepared as part of the planning division required standards for arborist report submittals, and is based on the standard mitigation measure matrix provided by the City on their website:

Tree Number	Mitigation Ratio if Removed (Depends on size and type of tree removed)	Minimum Size of Each Replacement Tree
Tree #1	5:1	24-inch box
Tree #3	4:1	24-inch box
Tree #4	4:1	24-inch box
Tree #5	4:1	24-inch box
Tree #6	1:1	15-gallon container

Note: Planning division allows for use of in-lieu fees to mitigate as an alternative to planting trees.

Alternative planting sites can also be used instead of mitigating directly on site.

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5.0 Consultant's Qualifications

- Contract Project Arborist, SFPUC Bay Division Pipe Lines 3, 4, 5
  10/10-present
- PNW-ISA Tree Risk Assessor Course Graduate, Vancouver, BC 2009
- PNW-ISA Certified Tree Risk Assessor #593
- ASCA Registered Consulting Arborist #401
- Millbrae Community Preservation Commission (Tree Board)
  2001-2006
- ASCA Arboriculture Consulting Academy graduate, class of 2000
- ISA Certified Arborist #WC-3172
- B.A. Environmental Studies/Soil and Water Resources
  UC Santa Cruz, Santa Cruz, California 1990
- Peace Corps Soil and Water Conservation Extension Agent
  Chiangmai Province, Thailand 1991-1993
- Associate Consulting Arborist
  Barrie D. Coate and Associates
  4/99-8/99
- Contract City Arborist to the City of Belmont
  5/99-present
- On-Call Arborist Consultant to the City of American Canyon
  2008-present
- Continued education through attendance of arboriculture lectures and forums sponsored by The American Society of Consulting Arborists, The International Society of Arboriculture (Western Chapter), and various governmental and non-governmental entities.

(My full curriculum vitae is available upon request)

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6.0 Bay Area Vendors

Tree Maintenance

Advanced Tree Care- Rob Weatherill	Peninsula	Cell (650) 537-0172
Maguire Tree Care - Paul Maguire	Peninsula	Cell (650) 245-2620
www.Trees360degrees.com – Straun Edwards	Peninsula and South Bay	Cell (408) 898-0625

(The above sources have been known to provide high-quality arboriculture services in the past. They are not guaranteed or endorsed by the author.)

7.0 Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised and evaluated as through free and clean, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinance, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Unless required by law otherwise, the possession of this report or a copy thereof does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initiated designation conferred upon the consultant/appraiser as stated in his qualifications.

This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by engineers, architects, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by Walter Levison to the sufficiency or accuracy of said information.

Unless expressed otherwise:

a. information contained in this report covers only those items that were examined and reflects the conditions of those items at the time of inspection; and
b. the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Loss or alteration of any part of this report invalidates the entire report.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

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Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Tree are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborist cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate the trees.

8.0 Certification

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signature of Consultant

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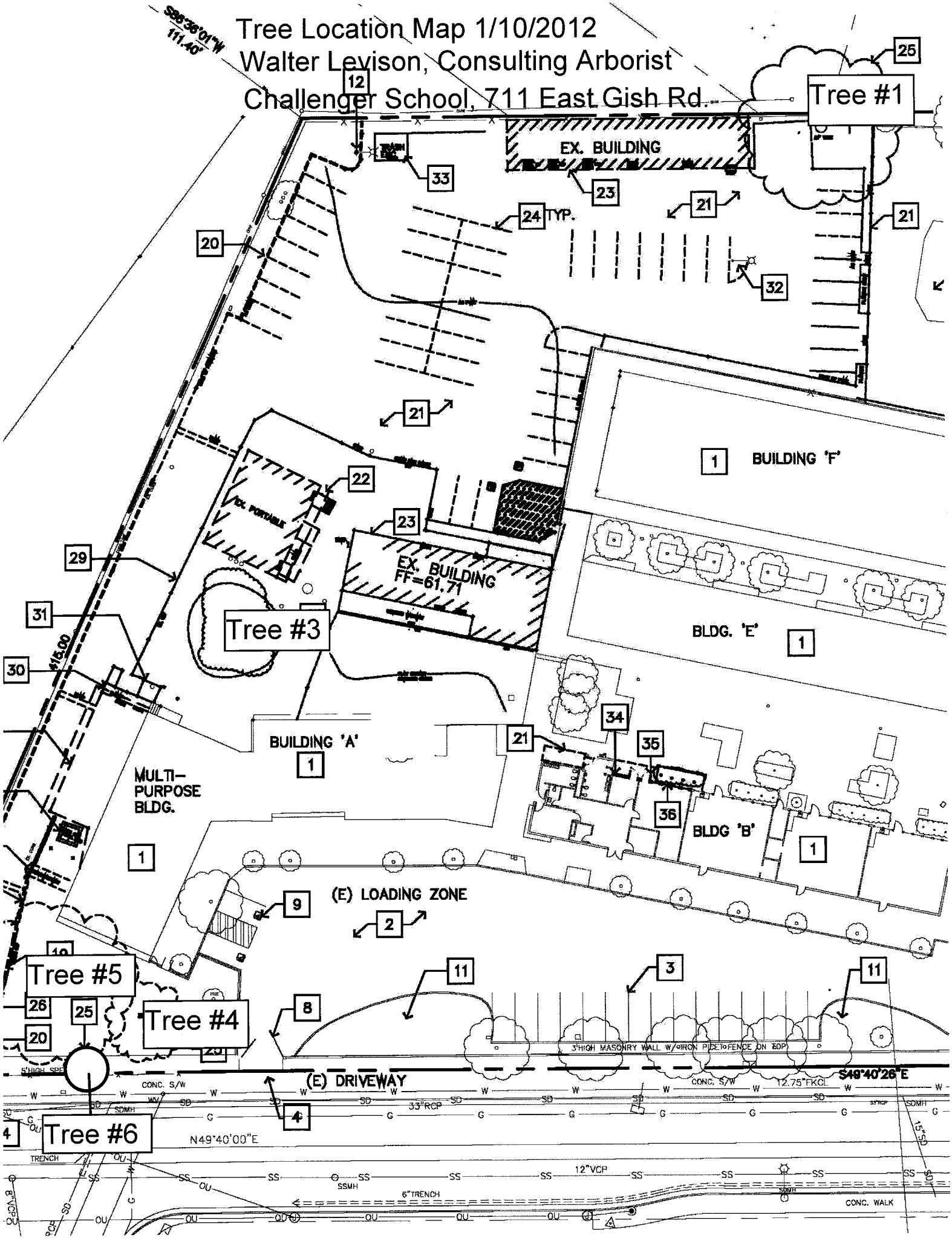
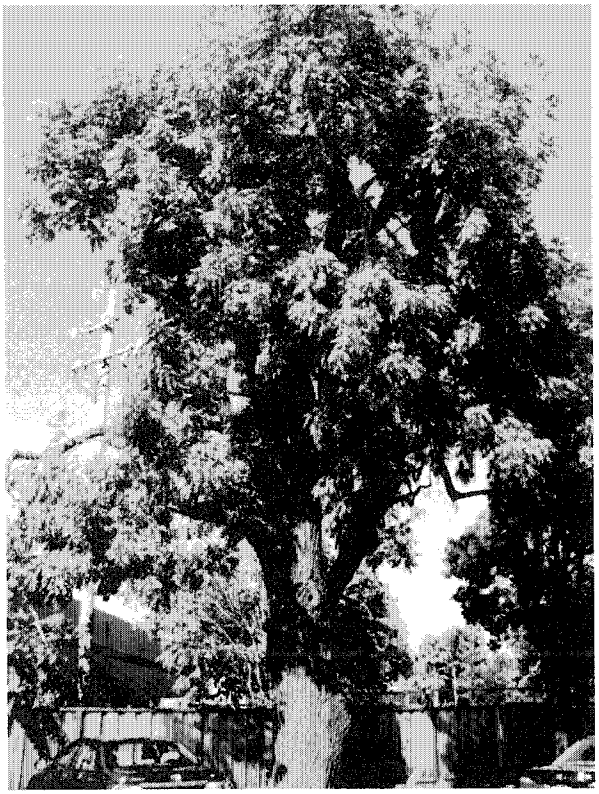
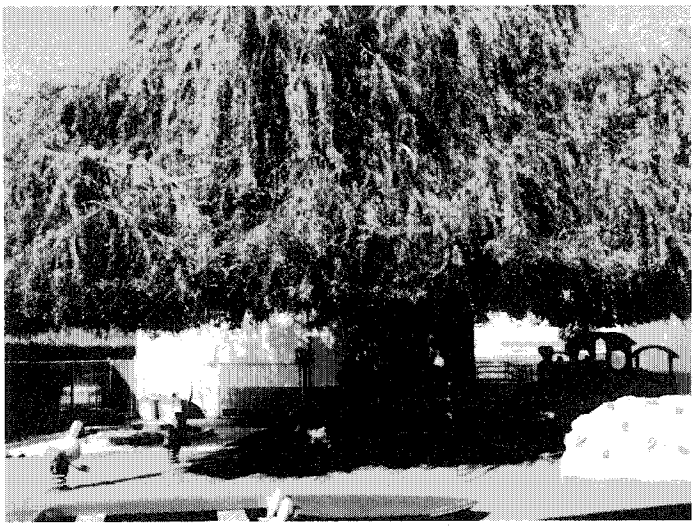
Tree Location Map 1/10/2012
Walter Levison, Consulting Arborist
Challenger School, 711 East Gish Rd.



10.0 Photographs of Ordinance Size Trees



Profile of California black walnut #1. This is a very large specimen of a native species.



Profile of Chinese elm #3 providing shade to an existing playground on the west side of the property.

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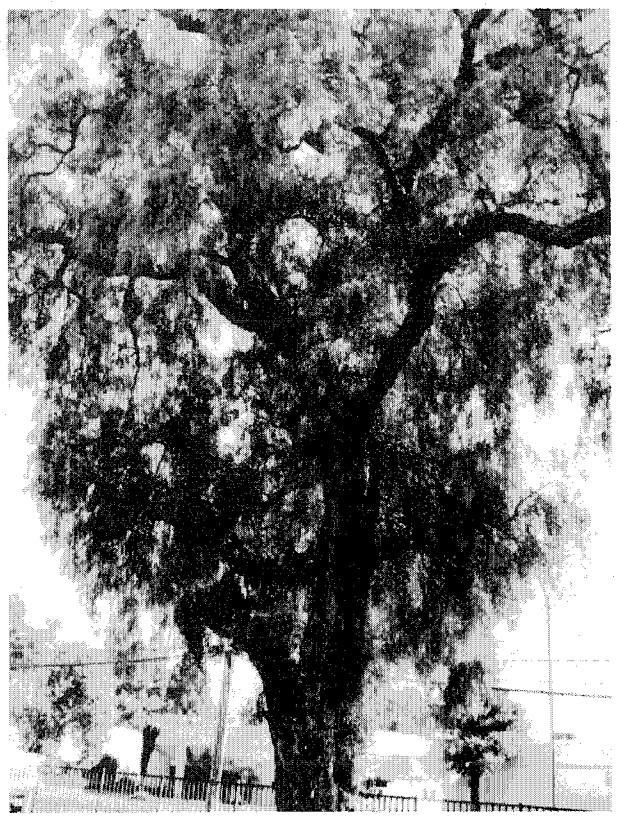
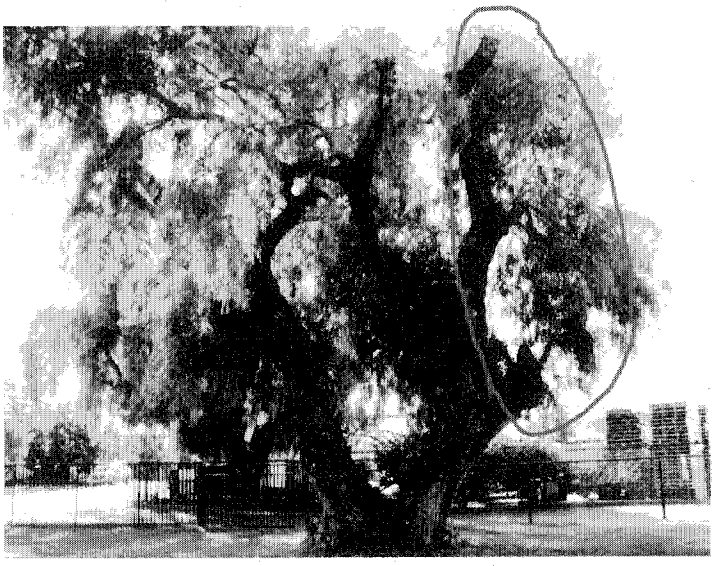


Profile of California (non-native) pepper tree #4 in front of the existing auditorium building. This tree does exhibit extensive decay in the mainstem, although in terms of actual structural stability loss, this decay may or may not be an issue.



Profile of California (non native) pepper #5 looking west to the existing driveway.

This tree caused damage to the existing auditorium building in the past, and was subsequently pruned back in a severe manner as can be seen on the right side of this image (circled in red).

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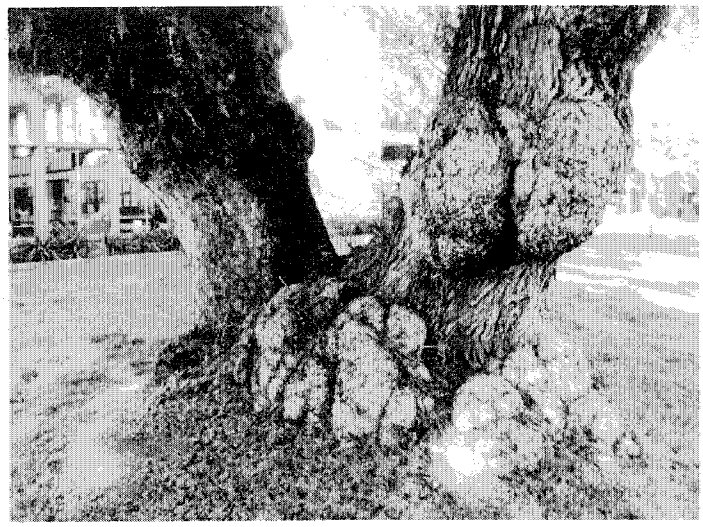

Lower trunk of pepper tree #5. This area exhibits massive bulbous protrusions which are typical of this tree species. The presence of these deformations is not damaging to the tree or in any way diminishing in terms of health or structural status.

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Tree Data
Challenger School Phase 1
11/8/2011

Tree Tag #	To be Removed Per Current Site Plan	Suitability for Preservation (Irrespective of Development)	Trunk 1 (in.)	Trunk 2 (in.)	Trunk 3 (in.)	Trunk 4 (in.)	Trunk 5 (in.)	Adjusted Trunk Diameter Inches @ 24" A.G. (1+2+3+4+5)	Ordinance-Protected Tree (City of San Jose)	COMMON NAME & *Scientific Name*	Height and Canopy Spread (ft.)	Health & Structural Ratings (0-100% each)	Overall Condition Rating (0-100%)	FIELD NOTES	Tree Protection Zone Radius (Build Limit in Feet)	Recommend Eliminate or Modify Proposed (U)tility trench route, (E)xcavation, (D)rainage, (F)oundation footprint, (P)atio replacement, (S)idewalk replacement	Protection & Maintenance (tpz)chain link fence, (tb)trunk buffer, (rb)root buffer, (p)rune, (rp) root prune, (f)ertilization, (m)ulch, (w)ater, (MON)itor, (r)esistograph
1	X	Good	51.4					51.4	X	California Black Walnut *(Juglans hindsii)*	55/60	60/60	60% Fair	Moderate to good TDE. Tree has been pruned to clear existiing overhead high voltage facilities.			
3	X	Good	23.5					23.5	X	Chinese elm *(Ulmus parvifolia)*	35/55	90/70	85% Good	Good buttress root development. Tree is providing shade for existing toddler play area.			
4	X	Poor to Moderate	34.4					34.4	X	California Pepper tree *(Schinus molle) non-native*	40/45	80/60	60% Fair	Cavity at 5 to 6 feet on mainstem is extensive. Good TDE.			
5	X	Poor	42	36				78	X	California Pepper tree *(Schinus molle) non-native*	40/50	60/40	48% Poor	Good TDE, but multiple large diameter pruning cut wounds noted where tree was pruned back to clear the existing auditorium. Handyman for the school notes that one or more limbs broke and caused significant damage to the auditorium in the past.			
6	X	Good	12	0				12		Italian cypress *(Cupressus sempervirens)*	30/10	75/75	75% Good	This tree was added as a survey tree after my arborist report was submitted to the client. I estimated diameter, size, and condition using Google streetview.			

Tree Tag #	To be Removed Per Current Site Plan	Suitability for Preservation (Irrespective of Development)	Trunk 1 (in.)	Trunk 2 (in.)	Trunk 3 (in.)	Trunk 4 (in.)	Trunk 5 (in.)	Adjusted Trunk Diameter Inches @ 24" A.G. (1+2+3+4+5)	Ordinance-Protected Tree (City of San Jose)	COMMON NAME & *Scientific Name*	Height and Canopy Spread (ft.)	Health & Structural Ratings (0-100% each)	Overall Condition Rating (0-100%)	FIELD NOTES	Tree Protection Zone Radius (Build Limit in Feet)	Recommend Eliminate or Modify Proposed (U)tility trench route, (E)xcavation, (D)rainage, (F)oundation footprint, (P)atio replacement , (S)idewalk replacement	Protection & Maintenance (tpz)chain link fence, (tb)trunk buffer, (rb)root buffer, (p)rune, (rp) root prune, (f)ertilization, (m)ulch, (w)ater, (MON)itor, (r)esistograph

Protection and Maintenance Codes in the Charts Above:

TPZ: Tree protection fence, chain link, with 2" diameter iron posts driven 24" into the ground, 6 to 8 feet on center max. spacing.
RB: Root buffer consisting of wood chip mulch lain over existing soil as a 12 inch thick layer, overlain with 1 inch or greater plywood strapped together with metal plates. This root buffer or soil buffer should be placed over the entire width of the construction corridor between tree trunks and construction.
RP: Root pruning. Prune woody roots measuring greater than or equal to 1 inch diameter by carefully back-digging into the soil around each root using small hand tools until an area is reached where the root is undamaged. Cleanly cut through the root at right angle to the root growth direction, using professional grade pruning equipment and/or a Sawzall with wood pruning blade. Backfill around the cut root immediately (same day), and thoroughly irrigate the area to saturate the uppermost 24 inches of the soil profile.
TB: Trunk buffer consists of 20-40 wraps of orange plastic snow fencing to create a 2 inch thick buffer over the lowest 8 feet of tree trunk (usually takes at least an entire roll of orange fencing). Lay 2X4 wood boards vertically, side by side, around the entire circumference of the trunk. Secure buffer using duct tape (not wires).
F: Fertilization with Greenbelt 22-14-14 tree formula.
M: 4-inch thick layer of wood chip mulch (Lyngso, self pickup). Do not use bark chips or shredded redwood bark.
W: Irrigate using various methods to be determined through discussion with General Contractor. Irrigation frequency and duration to be determined through discussion.
P: Pruning per specifications noted elsewhere. All pruning must be performed only under direct site supervision of an ISA Certified Arborist, or performed directly by an ISA Certified Arborist, and shall conform to all ANSI A300 standards.
MON: Project Arborist must be present to monitor specific work as noted in the notes box for each tree.

HISTORICAL and ARCHITECTURAL EVALUATION
Considering the Challenger-Berryessa School
711 E. Gish Road
San Jose, Santa Clara County, California

Prepared at the request of:

Mindigo & Associates
1984 the Alameda
San Jose CA 95126

Prepared by:

Bonnie Bamburg
URBAN PROGRAMMERS
10710 Ridgeview Ave.
San Jose CA 95127
408-254-7171

Date Completed:

March 1,2012

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code NA

Other Listings _____
Review Code _____ Reviewer _____ Date

Page 1 **of** 10 ***Resource Name or #:** 711 E. Gish Road, San Jose

P1. Other Identifier:

***P2. Location: Not for Publication** X **Unrestricted**

***a. County** Santa Clara **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Jose West **Date** 1980 **T** __; **R** __; __ **3 of** __ **3 of Sec** __; _____ **B.M.**

c. Address 711 Gish Road City Santa Clara Zip 95112

d. UTM: (Give more than one for large and/or linear resources) Zone 10, 597890 mE/ 41 36449 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
APN 237-04-010

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Located in a semi-industrial area of North San Jose, the campus is formed by linear buildings along the front facing onto a driveway (replace the front lawn of the former Gish Road School) and E. Gish Road. Behind the front buildings, the campus extends to the rear along a central spine (covered walkway) with wings on each side and detached buildings randomly located. There is a separate pre-K and Kindergarten area on the west side. The campus is a parallelogram shaped parcel where school buildings have been replaced over the years leading to the current configuration of buildings that, although remodeled since 1998 when the property was sold by the Orchard School District, retain the front buildings and two wings of the c.1950-80's plan. The new buildings, primarily c 2003-07 are detached with the most recent addition, a two-story building set in the NE corner of the property. The campus is not an outstanding example of mid-century architecture or campus planning. An example of high quality mid-century campus planning is San Jose High School (San Jose Academy), a City Landmark.

Three of the former Gish Road School buildings are proposed for removal including; a storage shed c.1970 (1,936 sq.ft), and two classroom buildings (3409 sq.ft.). both mid 1950's. (Continued on page 3)

***P3b. Resource Attributes:** (List attributes and codes) HP 15 Educational buildings

P4. Resources Present: X Building Structure Object Site District Element of District Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #)
c. 1955 portable building Front Façade, 2/2012

***P6. Date Constructed/Age and Source:** X Historic Prehistoric Both
Constructed: 1955-2007 City Directory; Building permits

***P7. Owner and Address:**
Emerald Isle LLC
9735 S. 500 W, Sandy Point, UT 84070

***P8. Recorded by:** (Name, affiliation, and address)
Bonnie Bamburg
Urban Programmers
10710 Ridgeview Avenue
San Jose CA 95127

***P9. Date Recorded:** 3/1/2012

***P10. Survey Type:** (Describe) Project Specific

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") None

***Attachments:** NONE Location Map Continuation Sheet X Building, Structure, and Object Record

State of California The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

Page 2 of 10 *Resource Name or # (Assigned by recorder) 711 E. Gish Road

B1. Historic Name: Gish Road School

B2. Common Name Challenger-Berryessa School

B3. Original Use: Public Elementary School B4. Present Use: Private Elementary School

*B5. Architectural Style: stripped educational design - mid century

*B6. Construction History: (Construction date, alterations, and date of alterations)

Constructed 1951-2007, remodeled; extensive alterations over the years

*B7. Moved? X No Yes Unknown Date: _____ Original Location:

*B8. Related Features:

none

B9a. Architect: Unknown b. Builder: multiple

*B10. Significance: Theme education Area San Jose

Period of Significance 1950-1998 Property Type school building Applicable Criteria NA (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The property is not significant to the history or architectural heritage of San Jose because it is not associated with individuals or events of significance. Further the architecture is not an important example of Mid-century design and older buildings have been altered with contemporary design, materials and features. The land has been associated with education since 1896, however none of the pre-1950 original buildings remain. As an elementary school in the Orchard School District (1896-1998) and now as a Challenger School there are no associations that are significant in the history of San Jose. During the operations of the Gish Road School San Jose experienced exceptional growth in its school facilities. This property is not distinctive in the history of education in San Jose nor does it exhibit high quality design. Using the San Jose Historic Evaluation Criteria the rating is 15.54- equating to a non significant property.

The Orchard School District was founded in 1856 with the Orchard School occupying land donated by Nurseryman Richard Fox. [1] It was a school for the children of settlers living on the north side of San Jose, in what was either agricultural land that became orchards or nurseries that supplied the young plants or stock for the orchards that became "The Valley of Hearts Delight". The Gish Road School (subject property) was established in 1896. The original building was a wood frame school house that was removed to make room for the new school buildings and portables required during the explosive growth period following WWII. (Continued page 3)

B11. Additional Resource Attributes: (List attributes and codes) HP 15 Educational Buildings

*B12. References: City & County public documents, Keller, Richard, Orchard School: A Narrative History; .Polk City Directory, San Jose CA 1908 pg 190

B13. Remarks:

*B14. Evaluator: Bonnie Bamburg

*Date of Evaluation: 3/1/2012

(Sketch with north arrow required.)

See attached

(This space reserved for official comments.)

[1] Keller, R. Orchard School: A Narrative History

P3.Description continued from page 1

The storage shed is a linear building with five bays (openings) that may have originally been for vehicle and/or maintenance, but has been reframed on the front facade. The wood frame building is covered with T-111 panel siding. The smaller portable classroom is metal frame with composition panel siding set on raised pier foundations. A long access ramp extends across the front of the single story building. The third building is a classroom wing c. 1951, a single-story building with a pitched roof. The building is punctuated with flat security doors on the front, and tall fixed-frame windows on the rear facade.

The campus is composed of c. 1951 linear buildings, two classroom wings, cafeteria and set of portable classrooms that were remodeled beginning in 1998, and was expanded in 2003 when 6.928 square feet of classroom space was approved to replace buildings and reconfigure the campus. At that time, the site was graded for a new drop-off vehicle entry , parking, and other improvements. In 2007. 8,128 square feet of new construction was completed dramatically altering the previous public school campus and buildings. [1]

B 10 Significance Continued from page 2

In the 1990's, as the Orchard School District lost pupil enrollment the district consolidated its instruction in the Orchard School on Fox Avenue and sold the subject facility in 1998, to Emerald Isle LLC who rents to Challenger Schools, a private school corporation. The site has been altered with new and remodeled buildings that are not exceptional in design or construction and do not create a distinctive or unusual educational campus. Therefore without a direct association to people or events of significance, the property is not significant to the heritage or architectural history of San Jose.

[1] San Jose Planning Permit PD03-075/Building permit 2007003357

Photographs of the Challenger Berryessa Campus were taken on March 2, 2012.

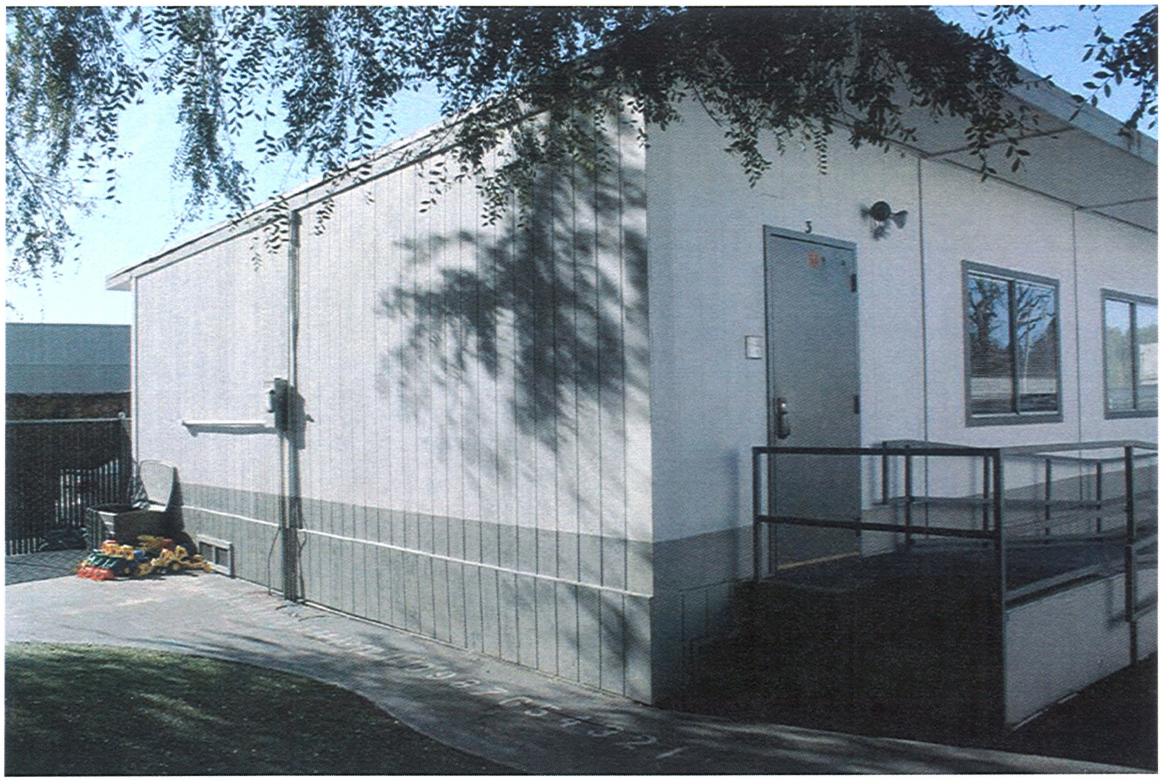
Photograph #1 Aerial Plan of the Challenger -Berryessa School Campus
Source: Google Earth Pro

View: Arrows show buildings to be removed.
1- Storage Shed
2- Portable Classroom building
3. Detached Classroom Building

Photograph #2 Classroom building #3
Front facade facing south

Photograph # 3 Rear of Classroom Building #3

Photograph # 4 Central spine Covered Corridor Classroom building



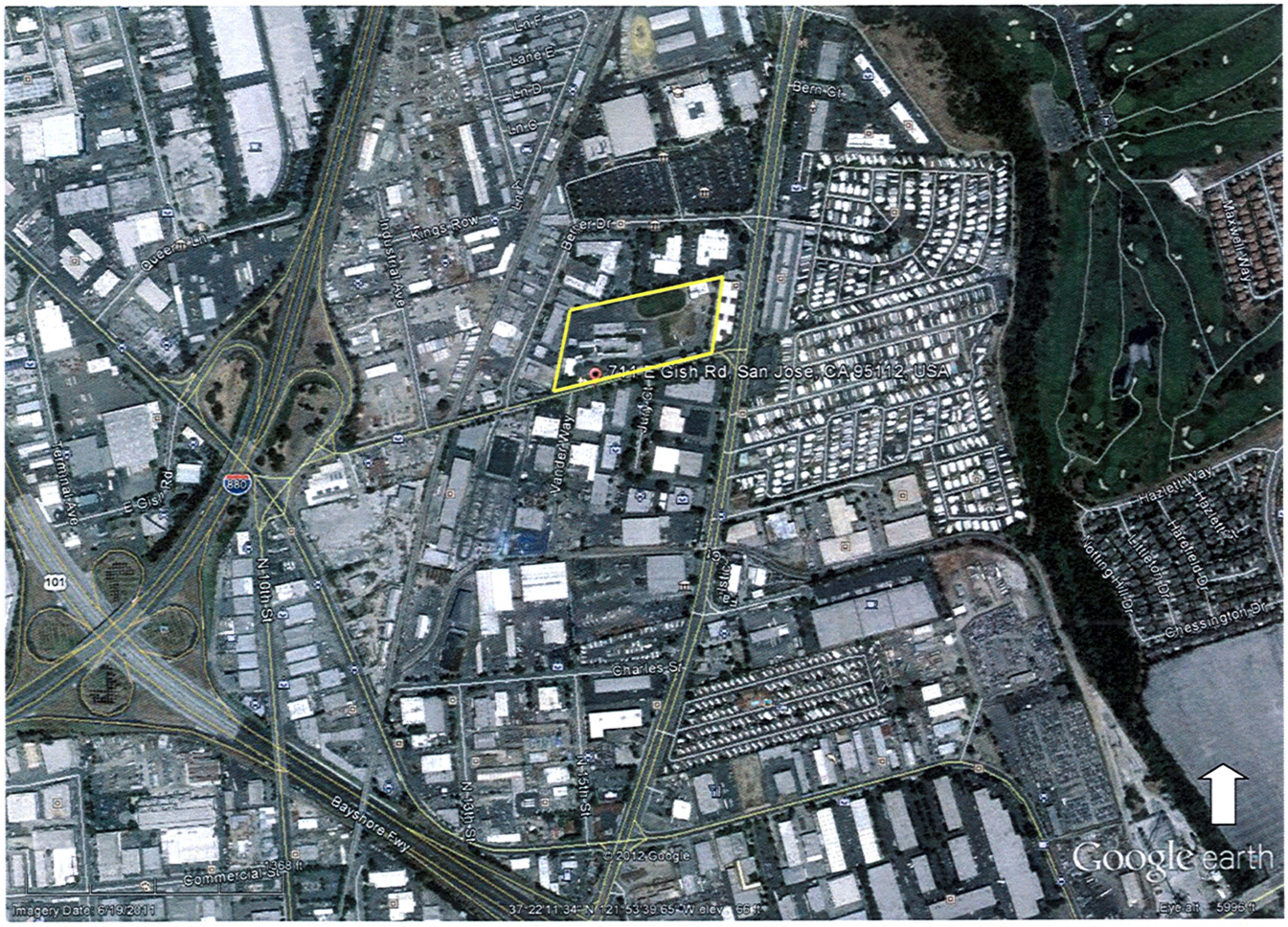
Photograph #5 Portable Classroom Building #2

Photograph #6 Storage Shed Building #1

B 12: References Continued

Keller, Richard, Orchard School: A Narrative History;
Polk Publishing Company: San Jose City Directories 1920-1970
Sanborn Insurance Company Maps 1950 updated 1962
San Jose Building Permits, 711 E. Gish Road, 1999-2011
San Jose Inventory of Historic Resources

Sketch Map



Location Map
Source USGS provided by Google Earth Pro

HISTORIC EVALUATION SHEET

HISTORIC RESOURCE NAME: Challenger -Berryessa School
HISTORIC RESOURCE ADDRESS: 711 E. Gish Road

A.	VISUAL QUALIFICATIONS		
1	EXTERIOR School Campus- not high quality design or form	E VG G	[FP]
2	STYLE Mix of contemporary elements	E VG G	[FP]
3	DESIGNER Unknown	E VG G	[FP]
4	CONSTRUCTION - No particular interest	E VG G	[FP]
5	SUPPORTIVE ELEMENTS landscaping	E VG	[G] FP
B.	HISTORY/ASSOCIATION		
6	PERSON/ORGANIZATION	E VG G	[FP]
7	EVENT none of individual significance	E VG G	[FP]
8	PATTERNS elementary schools follow population trends	E VG	[G] FP
9	AGE c.1950-2007	E VG G	[FP]
C.	ENVIRONMENTAL/CONTEXT		
10	CONTINUITY Not an area of importance	E VG G	[FP]
11	SETTING:	E VG G	[FP]
12	FAMILIARITY	E VG	[G] FP
D.	INTEGRITY		
13	CONDITION	E	[VG] G FP
14	EXTERIOR ALTERATIONS	E	[VG] G FP
15	STRUCTURAL REMOVALS	E	[VG] G FP
16	SITE	[E]	VG G FP
E.	REVERSIBILITY		
17	EXTERIOR	E VG	[G] FP
18	NATIONAL OR CALIFORNIA REGISTER	E VG G	[FP]

REVIEWED BY: Bonnie Bamburg

DATE: 3/1/2012

EVALUATION TALLY SHEET
(PART 1)

HISTORIC RESOURCE ADDRESS: 711 E. Gish Road

			E	VG	G	FP	
A	VISUAL QUALITY/DESIGN						
	1	EXTERIOR	16	12	6	0	0
	2	STYLE	10	8	4	0	4
	3	DESIGNER	6	4	2	0	0
	4	CONSTRUCTION	10	8	4	0	4
	5	SUPPORTIVE ELEMENTS	8	6	3	0	0
					Subtotal:		8
B.	HISTORY/ASSOCIATION						
	6	PERSON/ORGANIZATION	20	15	7	0	0
	7	EVENT	20	15	7	0	0
	8	PATTERNS	12	9	5	0	5
	9	AGE	8	6	3	0	3
					Subtotal:		8
C.	ENVIRONMENTAL/ CONTEXT						
	10	CONTINUITY	8	6	3	0	3
	11	SETTING	6	4	2	0	0
	12	FAMILIARITY	10	8	4	0	0
					SUBTOTAL:		3
					A & C SUBTOTAL:		11
					B SUBTOTAL:		8
					PRELIMINARY TOTAL: (sum of A. B. & C.)		19

EVALUATION TALLY SHEET
(PART II)

HISTORIC RESOURCE ADDRESS: 711 E. Gish Road

D.	**INTEGRITY**	**E**	**VG**	**G**	**FP**				
	13 CONDITION		0.03	0.05	0.1	19 X	0.03 =		0.57
		SUBTOTAL A,B&C							
	14 EXTERIOR ALTERATIONS		0.05	0.1	0.2	11 X	0.05 =		0.55
		SUBTOTAL A&C							
			0.03	0.05	0.1	8 X	0.03 =		0.24
		FROM B							
	15 STRUCTURAL REMOVALS		0.2	0.3	0.4	11 X	0.3 =		3.3
		SUBTOTAL: A & C							
			0.1	0.2	0.4	8 X	0.1 =		0.8
		FROM B							
	16 SITE		0.1	0.2	0.4	8 X	0 =		0
		FROM B							
		INTEGRITY DEDUCTIONS SUBTOTAL							5.46
		ADJUSTED SUBTOTAL:				19 -	5.46		13.54
		(Preliminary Total minus Integrity Deductions)							
				VALUE					
E	**REVERSIBILITY**	**E**	**VG**	**G**	**FP**				
	17 EXTERIOR	3	3	2	2				2
				Total:		2			
F.	**ADDITIONAL CONSIDERATIONS BONUS POINTS**			**VALUE**					
		E	**VG**	**G**	**FP**				
	22 NATIONAL OR CALIFORNIA REGISTER	20	15	10	0	0			
		BONUS POINTS SUBTOTAL:							0
		ADJUSTED TOTAL:							15.54

REPORT TO
HABITEC ARCHITECTURE & PLANNING
SAN JOSE, CALIFORNIA

FOR

PROPOSED IMPROVEMENTS
CHALLENGER SCHOOL
711 EAST GISH ROAD
SAN JOSE, CALIFORNIA

GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN

NOVEMBER 2011

PREPARED BY

UNITED SOIL ENGINEERING, INC.
3476 EDWARD AVENUE
SANTA CLARA, CALIFORNIA

UNITED SOIL ENGINEERING, INC.
Geotechnical and Environmental Consultants

File No. 6191-S1
November 4, 2011

Habitec Architecture & Planning
111 W. Saint John Street, Suite 950
San Jose, CA 95113

Attention: Ms. Hanh Nguyen

Subject: Challenger School
Proposed New Classroom and Portable Building Additions
711 East Gish Road
San Jose, California
GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN

Dear Ms. Hanh:

We are pleased to transmit herein the results of our geotechnical investigation and pavement design for the proposed New Classroom and Portable Building Additions. The subject site is the Challenger School located at 711 East Gish Road in San Jose, California.

Our findings indicate that the site is suitable for the proposed improvements provided the recommendations contained in this report are carefully followed. Field reconnaissance, drilling, sampling, and laboratory testing of the surface and subsurface material evaluated the suitability of the site. The following report details our investigation, outlines our findings, and presents our conclusions based on those findings.

If you have any questions or require additional information, please feel free to contact our office at your convenience.

Very truly yours,
UNITED SOIL ENGINEERING, INC.

Sean Deivert
Sean Deivert
Project Manager

Vien Vo, P.E.

6191.GIPD/Copies: 4 to Habitec Architecture & Planning

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FIGURES

FIGURE 1 - VICINITY MAP

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FIGURE 4 - PLASTICITY INDEX CHART

FIGURE 5 - COMPACTION TEST A

FIGURE 6 - LIQUEFACTION-INDUCED GROUND DAMAGE

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MODIFIED MERCALLI SCALE

METHOD OF SOIL CLASSIFICATION CHART

EXPLANATION OF BORING LOG SYMBOLS

EXPLORATORY BORING LOGS (B-1 THROUGH B-5)

INTRODUCTION

Per your authorization, United Soil Engineering, Inc. (USE) conducted a geotechnical investigation and pavement design. The purpose of this geotechnical investigation was to determine the nature of the surface and subsurface soil conditions at the project site through field investigations and laboratory testing. This report presents an explanation of our investigative procedures, results of the testing program, our conclusions, and our recommendations for earthwork and foundation design to adapt the proposed improvements to the existing soil conditions.

SITE LOCATION AND DESCRIPTION

The subject site is the Challenger School located at 711 East Gish Road in San Jose, California (Figure 1). East Gish Road bound the subject site to the southeast, existing public storage building to the northeast, and industrial/office buildings to the northwest and southwest. At the time of this investigation, the subject site is irregular shaped, relatively flat parcel occupied by the Challenger School campus including classroom and office buildings and playfields surrounded by paved driveways and parking areas, and landscaping areas. Based on the available information for the subject site, the improvements will include the construction of new classrooms, portable building additions, and new parking areas with associated improvements. The approximate location of the existing and proposed improvements and our borings are shown on the Site Plan (Figure 2).

FIELD INVESTIGATION

After considering the nature of the proposed improvements and reviewing available data on the area, the project geologist under the direction of our

geotechnical engineer conducted a field investigation at the project site. It included a site reconnaissance to detect any unusual surface features, and the drilling of five exploratory test borings to determine the subsurface soil characteristics. The borings were drilled on October 20 and 25, 2011. The approximate location of the borings is shown on the Site Plan (Figure 2). The borings were drilled to the depths of 10 feet and 50 feet below the existing pavement surface. The borings were drilled with a truck mounted drill rig using 8-inch diameter hollow stem augers.

The soils encountered were logged continuously in the field during the drilling operation. Relatively undisturbed soil samples were obtained by hammering a 2-inch outside diameter (O.D.) split-tube sampler for a Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586, into the ground at various depths. A 140-pound hammer with a free fall of 30 inches was used to drive the sampler 18 inches into the ground. Blow counts were recorded on each 6-inch increment of the sampled interval. The blows required to advance the sampler the last 12 inches of the 18 inch sampled interval were recorded on the boring logs as penetration resistance. These values were also used to evaluate the liquefaction potential of the subsurface soils. After the completion of the drilling operation, the exploratory borings were backfilled from the bottom of the borehole to the surface with neat cement in accordance to the rules and regulations of the Santa Clara Valley Water District.

In addition, one disturbed bulk sample of the near-surface soil was collected for laboratory analyses. The Exploratory Boring Log, a graphic representation of the encountered soil profile which also shows the depths at which the relatively undisturbed soil samples were obtained, can be found in the Appendix at the end of this report.

LABORATORY INVESTIGATION

A laboratory-testing program was performed to determine the physical and engineering properties of the soils underlying the site.

1. Moisture content and dry density tests were performed on the relatively undisturbed soil samples in order to determine soil consistency and the moisture variation throughout the explored soil profile (Table I).

2. Atterberg Limits tests were performed on the sub-surface soil to assist in the classification of these soils and to obtain an evaluation of their expansion and shrinkage potential and liquefaction analysis.

3. The strength parameters of the foundation soils were determined from direct shear tests that were performed on selected relatively undisturbed soil samples. Laboratory compaction tests were performed on the near-surface material per the ASTM D1557-91 test procedure.

4. Grain size distribution analyses (sieve and hydrometer) were performed on suspected liquefiable soil to assist in their classification and gradation.

5. One R-Value test was performed on a near surface soil sample for pavement section design recommendations.

The results of the laboratory-testing program are presented in the Tables and Figures at the end of this report.

SOIL CONDITIONS

In Boring B-4 (50 feet boring), the existing surface soil consists of 4 inches of organic material material. Below the organic layer to the depth of 7 feet, a black to dark olive brown, moist, firm clayey silt layer was encountered. A color

change to olive brown was noted at the depth of 4 feet. From the depths of 7 feet to 13 feet, the soil became light olive brown, moist, medium dense, silty sand. From the depths of 13 feet to the end of the boring at 50 feet feet, an olive brown, moist, very stiff, silty clay layer was encountered. A color change to bluish gray was noted at the depth of 30 feet. Similar soil profiles were encountered in the other boring.

Groundwater was initially encountered in both borings at the depth of 13 feet and rose to a static level of 11 feet at the end of the drilling operation. It should be noted that the groundwater level would fluctuate as a result of seasonal changes and hydrogeological variations such as groundwater pumping and/or recharging. A graphic description of the explored soil profiles is presented in the Exploratory Boring Log contained in the Appendix.

GENERAL GEOLOGY

The site lies in the San Francisco Bay Region, which is part of the Coast Range province. The regional structure is dominated by the northwest trending Santa Cruz Mountains to the southwest and the Diablo Range across the bay to the northeast.

The site lies on the east flank of the Santa Cruz Mountains on a thin layer of Holocene alluvial deposits overlying the Merced formation, Lower Pleistocene and Upper Pliocene marine deposits. The Santa Cruz Mountains consists of two entirely different, incompatible core complexes, lying side by side and separated from each other by large faults. These two core complexes are Early Cretaceous Granitic intrusions, and an Upper Jurassic to Lower Cretaceous eugosynclinal assemblage - the Franciscan formation. These core complexes are blanketed by thick layers of Eocene to Pleistocene marine deposits. Some Miocene volcanic intrusions are also present in the Santa Cruz Mountains southwest of the subject site. The core complex of the Diablo Range to the northeast of the subject site is

comprised of Franciscan formation, predominantly covered with Upper Cretaceous and Lower to Middle Pliocene marine deposits.

The Quaternary history of the region is recorded by sedimentary marine strata alternating with non-marine strata. The changes of the depositional environment are related to the fluctuation of sea level corresponding to the glacial and interglacial periods. Late Quaternary deposits fill the center of the San Francisco Bay Region and most of the strata are of continental origin characterized as alluvial and fluvial materials.

Folds, thrust faults, steep reverse faults, and strike-slip faults developed as a consequence of Cenozoic deformations that occur very often within the province and are continuing today.

LIQUEFACTION ANALYSIS

A. GROUNDWATER

Groundwater was initially encountered in the borings at depths of 13 feet and rose to a static level ranging from 11 feet at the end of the drilling operation. Based on the State guidelines and CGS Seismic Hazard Zone Report 058 [*Seismic Hazard Evaluation of the San Jose West 7.5-Minute Quadrangle, Santa Clara County, California. 2002 (Revised 10/10/2005).* Department Of Conservation. Division of Mines and Geology], the highest expected groundwater level is approximately 7 feet below ground elevation. Therefore, this depth of the groundwater table will be used for the liquefaction analysis.

B. SUSPECTED LIQUEFIABLE SOIL LAYERS

The site is located within the State of California Seismic Hazard Zone for liquefaction (CGS, 2001). The State Guidelines (CGS Special Publication 117A, revised 2008, Southern California Earthquake Center, 1999) were followed by this study. Based on recent studies (Bray and Sancio, 2006, Boulanger and Idriss,

2004), the "Chinese Criteria", previously used as the liquefaction screening (CGS SP 117, SCEC, 1999) is no longer valid indicator of liquefaction susceptibility. The revised screening criteria clearly stated that liquefaction is the transformation of loose saturated silts, sands, and clay with a Plasticity Index (PI) < 12 and moisture content (MC) > 85% of the liquid limits are susceptible to liquefaction. This occurs under vibratory conditions such as those induced by a seismic event. To help evaluate liquefaction potential, samples of potentially liquefiable soil were obtained by hammering the split tube sampler into the ground. The number of blows required driving the sampler the last 12 inches of the 18 inch sampled interval were recorded on the log of test boring. The number of blows was recorded as a Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586-92.

The results from our exploratory boring show that the subsurface soil material in Boring B-4 to the depth of 50 feet consists of firm clayey silt to medium dense silty sand to very stiff silty clay. The following is the determination of the liquefiable soil for each soil layer in Boring B-4.

1. The very stiff silty clay layer from the surface to the depth of 7 feet is not liquefiable soil because it is above the groundwater table.

2. The medium dense silty sand layer from the depths of 7 feet to 13 feet is liquefiable soil based on the PI (PI<12) and blow counts.

3. The very stiff silty clay layer from the depth of 13 feet to the end of the boring at 50 feet is not liquefiable soil because based on the Plasticity Index (PI) and moisture contents (MC):

    - Sample No. 4-4 (15 feet) - [PI > 12; PI = 33 and MC = 28.3% < 85% LL; LL = 41]

    - Sample No. 4-6 (25 feet) - [PI > 12; PI = 30 and MC = 32.7% < 85% LL; LL = 40]

- Sample No. 4-8 (35 feet) - [PI > 12; PI = 32 and MC = 31.5% < 85% LL; LL = 44]
- Sample No. 4-10 (45 feet) - [PI > 12; PI = 35 and MC = 32.0% < 85% LL; LL = 46]

In summary, there is one liquefiable soil layer underlying the subject site. This layer is the medium dense silty sand layer from the depths of 7 feet to 13 feet (6 feet in thickness).

C. STANDARD PENETRATION TEST N_{60} VALUE CORRECTED FOR FIELD TESTING PROCEDURES

The measured standard penetration test (SPT) N value can be influenced by many factors including the soil types, groundwater conditions, and different field-testing procedures. The N values corrected for field-testing procedure are calculated using the following formula as suggested by *Skempton 1986*:

$N_{60} = 1.67\ E_m C_b C_r N$

N_{60} = standard penetration test N value corrected for field testing procedures

E_m = hammer efficiency (E_m = 0.6 for U.S. equipment)

C_b = bore hole diameter corrections (C_b = 1.05 for 150-mm diameter bore hole)

C_r = rod length correction:

C_r = 0.75 for rod length up to 13.1 feet

C_r = 0.85 for rod length between 13.1 to 19.7 feet

C_r = 0.95 for rod length between 19.7 to 32.8 feet

N = measured standard penetration test N value

The N_{60} values are shown in Table V.

D. STANDARD PENETRATION TEST $(N1)_{60}$ VALUE CORRECTED FOR FIELD TESTING PROCEDURES AND OVERBURDEN PRESSURE

For this liquefaction study, the standard penetration test N_{60} value is corrected for the vertical effective stress by the following formula:

$$(N_1)_{60} = C_N N_{60} = (100/\sigma'_{ov})^{0.5} N_{60}$$

$(N_1)_{60}$ = standard penetration test N value corrected for both field testing procedures and overburden pressure

C_N = correction factor to account for overburden pressure obtained from Figure 7 using the above data

N_{60} = standard penetration test N value corrected for field testing procedures

σ'_{ov} = vertical effective stress, also called the effective overburden pressure

The $(N_1)_{60}$ values for the suspected liquefiable silty sand layer in Boring B-4 is shown in Table V.

E. PEAK GROUND ACCELERATION

The ground motion caused by earthquakes is generally characterizes in terms of ground surface displacement, velocity, and acceleration. For this liquefaction study, the measure of the cyclic ground motion is represented by the maximum horizontal acceleration at the ground surface, a_{max}. The maximum horizontal acceleration at ground surface is also called the peak horizontal ground acceleration. The value of peak ground acceleration is usually based on prior earthquake and faults studies because it is not possible to predict earthquakes. Based on the State guidelines and CGS Seismic Hazard Zone Report 058 (Revised 10/18/06) [*Seismic Hazard Evaluation of the San Jose West 7.5-Minute*

Quadrangle, Santa Clara County, California. 2002 (Revised 10/10/2005). Department of Conservation. Division of Mines and Geology], the peak ground acceleration is 0.59g.

F. CYCLIC STRESS RATIO (CSR) CAUSED BY THE EARTHQUAKE

The cyclic stress ratio (CSR) induced by the earthquake is a function of the depth of the liquefiable soil layer, peak ground acceleration, total vertical stress, effective vertical stress, and ground water depth. The CSR can be calculated using the following formula:

$$CSR = 0.65 r_d (\sigma_{ov}/(\sigma'_{ov})(a_{max}/g)$$

CSR = cyclic stress ratio, also called seismic stress ratio

r_d = depth reduction factor, also called stress reduction coefficient

σ_{ov} = total vertical stress at a particular depth where the liquefaction analysis is performed

σ'_{ov} = vertical effective stress at the same depth in soil deposit where σ_{ov} was calculated

a_{max} = maximum horizontal acceleration at ground surface that is induced by the earthquake, also called peak ground acceleration

g = acceleration of gravity

The above formula was developed with the assumptions that the ground surface is level and the unit width and length soil column will move horizontally as a rigid body. The horizontal movement of the soil column is the result of the maximum horizontal accelerations, a_{max}, exerted by the earthquake at ground surface. The depth reduction factor was introduced to account for the fact that the soil column does not behave as a rigid body. The depth reduction factor was obtained from Figure 8, which was reproduced from *Andrus and Stokoe 2000.* The CSRs, which were computed using the above formula for the suspected liquefiable soil layer in Boring B-4 is shown in Table V.

G. CYCLIC RESISTANCE RATIO (CRR)

The cyclic resistance ratio (CRR) represents the liquefaction resistance of the in situ soil. The CRR of the suspected liquefiable soil layer was obtained from Figure 9. This figure was reproduced from *Seed et al. 1985.* In using Figure 9 the following data were entered:

1. *Standard penetration test* $(N_1)_{60}$ *value.*
2. *Percent fines.*
3. *Cyclic resistance ratio* (CRR) *for an anticipated magnitude 7.5 earthquake.*
4. *Correction for other magnitude earthquakes:* At higher magnitude values, the magnitude scaling factor can be determine from Figure 10. This figure was reproduced from *Andrus and Stokoe 2000.*

H. FACTOR OF SAFETY AGAINST LIQUEFACTION (FS)

The factor of safety against liquefaction is defined as follows:

FS = CRR/ CSR

The higher the safety factor, the more resistant the soil is to liquefaction. A factor of safety against liquefaction greater than 1.3 indicates that the level of risk associated with liquefaction hazard is acceptable. A factor of safety against liquefaction less than 1.3 indicates that an evaluation of the severity of the hazard associated with potential liquefaction of the suspected liquefiable soil layer should be performed. The severity of the hazard includes liquefaction-induced ground surface settlements and liquefaction-induced ground damage. Factors of safety against liquefaction, which were calculated for the suspected liquefiable silty sand layer in exploratory Boring B-4, is shown in Table V. Based on the factor of safety against liquefaction (F.S. = 0.17 < 1.3), it is probable that during the anticipated earthquake, the silty sand layer from the depths of 7 feet to 13 feet will liquefy.

I. SETTLEMENT VERSUS FACTOR OF SAFETY AGAINST LIQUEFACTION

As we have evaluated, the suspected liquefiable silty sand layer will liquefy. Accordingly, the settlement will occur as water flows from the soil in response to the earthquake-induced excess pore water pressures. To estimate the ground surface settlement of the suspected liquefiable silty sand layer, we used Figure 11. This figure was reproduced from *Kramer 1996, which was originally developed by Tokimatsu and Seed 1984.* In using Figure 11, the CSR and $(N_1)_{60}$ values of the suspected liquefiable silty sand layer in exploratory Boring B-4 were entered. Two types of settlements will be considered.

1. Total Settlement. The estimated total settlements were calculated from the resulting volumetric strain percentage applying to the suspected liquefiable soil layer thickness.

2. Differential Settlement. Because of variable soil conditions and structural loads, the earthquake-induced settlements are rarely uniform. As a result, the foundation will experience differential settlement. A common assumption as suggested by *Robert W. Day 2002 and The California Department of Conservation Division of Mines and Geology GUIDELINES* is that the maximum differential settlement of the foundation will be equal to 50 to 75 percent of the maximum total settlement.

The maximum total settlement is estimated to be 2 inches. Accordingly, the differential settlement is estimated to be 1.5 inches. The total and differential settlements are considered slightly moderate.

J. LIQUEFACTION-INDUCED GROUND DAMAGE

In addition to the ground surface settlements, there could be also liquefaction-induced ground damage that causes settlement of structures. The ground damage may include sand boils and/or surface fissures. To evaluate

liquefaction-induced ground damage, we use Figure 6. These figures were reproduced from *Kramer 1996, which was originally developed by Ishihara 1985*. In plotting the coordinates of the suspected liquefiable sandy silt layer of Boring B-1 in Figure 6, the thickness of surface non-liquefiable (H_1) soil layers and the thickness of the liquefiable (H_2) layer in each exploratory boring were entered with a maximum peak acceleration of $a_{max} = 0.59g$. The following is the determination of H_1 and H_2 in Boring B-4.

Borings B-1: $H_1 = 2.33$ meters; $H_2 = 3$ meters

Based on the plotted coordinates of the suspected liquefiable soil layer of Boring B-4 using the above data, we concluded that there is a slightly moderate potential for liquefaction-induced ground damage to occur at the site.

K. CONCLUSIONS

The followings are the conclusions of this study.

- The liquefaction-induced total maximum settlements at the site is 2 inches
- The liquefaction-induced differential settlements at the site is 1.5 inches
- The potential of liquefaction-induced ground surface damage at the site is minimal

INUNDATION POTENTIAL

The subject site is located at 711 East Gish Road in San Jose, California. According to the Limerinos and others, 1973 report, the site is not located in an area that has potential for inundation as the result of a 100-year flood (Limerinos; 1973).

CONCLUSIONS

1. The site covered by this investigation is suitable for the proposed improvements provided the recommendations set forth in this report are carefully followed.

2. Based on the laboratory testing results, the native surface soil at the project site has been found to have a high expansion potential when subjected to fluctuations in moisture. Therefore, we recommend the building pad be underlain by a minimum of 12 inches non-expansive fill layer or 12 inches of lime-treated native soil material. During the construction of the building pad, any highly expansive native soil should not be used as non-expansive engineered fill material.

3. The existing asphalt concrete pavement can be crushed and mixed with the existing baserock and re-used as fill material. The existing concrete buildings can be crushed according to a Class II Baserock specification and re-used on the building pads and parking area rock section. The crushed baserock material for the building pads should be free of crushed asphalt concrete. The baserock material should be inspected and tested prior to final approval and use.

4. The imported non-expansive fill soils should be free of organic material and hazardous substances. All imported fill material to be used for engineered fill should be environmentally tested by our office prior to be used at the site.

5. The lime-treated subgrade soil, if any, should not be exposed to the element for an extended period. If no improvements are planned for the immediate future, the lime-treated subgrade soil should be protected.

6. We recommend the building pad be elevated above the adjacent ground surface to promote proper drainage and diversion of water away from the building foundations.

7. If the site is located in a low-lying area or adjacent to any creek or drainage channel, minor cracks and separations of the concrete slab-on-grade, asphalt concrete pavement and/or curb and gutter should be expected.

8. We recommended a reference to our report should be stated in the grading and foundation plans (this includes the Geotechnical Investigation File No. and dates).

9. On the basis of the engineering reconnaissance and exploratory borings, it is our opinion that trenches that will be excavated to depths less than 5 feet below the existing ground surface will not need shoring. However, for trenches that will be excavated greater than 5 feet in depth, shoring will be required.

10. Specific recommendations are presented in the remainder of this report.

11. All earthwork and grading shall be observed and inspected by a representative from United Soil Engineering, Inc., (USE). These operations are not limited to testing and inspection during grading.

RECOMMENDATIONS

GRADING

1. The placement of fill and control of any grading operations at the site should be performed in accordance with the recommendations of this report. These recommendations set forth the minimum standards to satisfy other requirements of this report.

2. All existing surface and subsurface structures that will not be incorporated in the final development shall be removed from the project site prior to any grading operations. These objects should be accurately located on the grading plans to assist the field engineer in establishing proper control over their removal. All utility lines, if any, must be removed prior to any grading at the site.

3. The depressions left by the removal of subsurface structures should be cleaned of all debris, backfilled and compacted with clean, native soil. This backfill must be engineered fill and should be conducted under the supervision of a USE representative.

4. All organic surface material and debris, including grass and weeds shall be stripped prior to any other grading operations, and transported away from all areas that are to receive structures or structural fills. Soil containing organic material may be stockpiled for later use in landscaping areas only.

5. After removing all the subsurface structures or existing pavement section and after stripping the organic material from the soil, the building pad area should be scarified by machine to a depth of 12 inches and thoroughly cleaned of vegetation and other deleterious matter.

6. After stripping, scarifying and cleaning operations, native soil should be re-compacted to not less than 90% relative maximum density using ASTM

D1557-91 procedure over the entire building pad and 5 feet beyond the perimeter of the pad.

7. All engineered fill or imported soil should be placed in uniform horizontal lifts of not more than 6 to 8 inches in un-compacted thickness, and compacted to not less than 90% relative maximum density using ASTM D1557-91 procedure. The baserock, however, should be compacted to not less than 95% relative maximum density. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction by either; 1) aerating the material if it is too wet, or 2) spraying the material with water if it is too dry. Each lift shall be thoroughly mixed before compaction to assure a uniform distribution of water content.

8. When fill material includes rocks, nesting of rocks will not be allowed and all voids must be carefully filled by proper compaction. Rocks larger than 4 inches in diameter should not be used for the final 2 feet of building pad.

9. Unstable (yielding) subgrade should be aerated or moisture conditioned as necessary. Yielding isolated area in the subgrade can be stabilized with an excavation of the subgrade to the depth of 12 to 18 inches, lined with stabilization fabric membrane (Mirafi 500X or equivalent) and backfilled with aggregate base.

10. United Soil Engineering, Inc., (USE), should be notified at least two days prior to commencement of any grading operations so that our office may coordinate the work in the field with the contractor. All imported borrow must be approved by USE before being brought to the site. Import soil must have a plasticity index no greater than 12 and an R-Value greater than 25.

11. All grading work shall be observed and approved by a representative from USE. The geotechnical engineer shall prepare a final report upon completion of the grading operations.

WATER WELLS

12. Any water wells and/or monitoring wells on the site which are to be abandoned, shall be capped according to the requirements of the Santa Clara Valley Water District. The final elevation of the top of the well casing must be a minimum of 3 feet below the adjacent grade prior to any grading operation.

FOUNDATION DESIGN CRITERIA

13. Because of the estimated liquefaction-induced settlements of 2 inches, we recommend the proposed new building be supported on mat foundation. Recommendations are presented in the following paragraphs.

14. The mat foundation should have a minimum thickness of 8 inches and a contact pressure of 1500 psf. A value of 150 pcf as the soil modulus of subgrade of reaction can be used in the design of the mat foundation. The maximum cantilever length should be 4 feet. The interior span length should be 6 feet. The mat slab should be underlain by 2 inches of sand and 10-mil vapor barrier if floor covering is used. If adjacent grade around buildings promote proper drainage, the perimeter 12-inch foundation trench can be eliminated. However, a thickened edge is recommended. The mat slab embedment should be at least 8 inches from adjacent grade.

15. Drilled concrete piers can support the post for outside canopy. The pier should have a minimum diameter of 12 inches and an embedment depth 6

feet below ground surface. A skin friction value of 800 p.s.f. can be used in the design of the pier.

16. The portable classroom addition (modular) can be supported on continuous perimeter spread footing and interconnected grade beam. The footing should be founded at a minimum depth of 12 inches below finished soil pad grade. The allowable bearing capacity is 1,500 p.s.f. This value is for dead plus live load and can be increased by one-third for seismic and/or wind loads.

17. The above bearing values are for dead plus live loads, and may be increased by one-third for short term seismic and wind loads. The design of the structures and the foundations shall meet local building code requirements.

18. The project structural engineer responsible for the foundation design shall determine the final design of the foundations and reinforcing required. We recommend that the foundation plans be reviewed by our office prior to submitting to the appropriate local agency and/or to construction.

2010 CBC SEISMIC VALUES

19. Site Class: D (Table 1613.5.2 CBC 2010)

Mapped Spectra Acceleration for short periods S_S = 1.500g*

Mapped Spectra Acceleration for 1-second period S_1 = 0.601g*

Designed Spectra Acceleration for short periods SD_S = 1.000g*

Designed Spectra Acceleration for 1-second period SD_1 = 0.601g*

(* USGS Seismic Hazard Curves and Uniform Hazard Response Spectra for 2010 CBC analysis)

Site Coefficient F_a = 1.0 (Table 1613.5.3(1) CBC 2010)

Site Coefficient F_V = 1.5 (Table 1613.5.3(2) CBC 2010)

Maximum considered earthquake spectral response accelerations for short period S_{MS} = 1.500g ($S_{MS} = F_a S_S$ - Equation 16-37 CBC 2010)

Maximum considered earthquake spectral response accelerations for 1-second period S_{M1} = 0.900g ($S_{M1} = F_V S_1$ - Equation 16-38 CBC 2010)

CONCRETE SLAB-ON-GRADE CONSTRUCTION

20. Based on the laboratory testing results, the native surface soil at the project site has been found to have a high expansion potential when subjected to fluctuations in moisture. Therefore, we recommend the concrete slab-on-grade be underlain by a minimum of 12 inches non-expansive fill layer. During the construction of the building pad, any highly expansive native soil should not be used as non-expansive engineered fill material.

21. A minimum of 5 inches of Class II Baserock or ¾ inch crushed rock (crushed asphalt concrete is not acceptable) and 2 inches of clean free draining sand (ASTM C33) with vapor barrier membrane (10 mil) shall be used between the finished grade and the concrete slab. The baserock should be compacted to not less than 95% relative maximum density and 90% for the subgrade according to ASTM D1557-91.

22. Use of a vapor barrier membrane under the concrete slab is required if a floor covering would be applied. The membrane should be placed between the baserock and the sand layers. If the slab would not receive a floor covering, the sand and vapor barrier membrane can be eliminated.

23. Prior to placing the vapor membrane and/or pouring concrete, the slab subgrade shall be moistened with water to reduce the swell potential, if deemed necessary, by the field engineer at the time of construction.

RETAINING WALLS

24. Any facilities that will retain a soil mass shall be designed for a lateral earth pressure (active) equivalent to 50 pounds equivalent fluid pressure, plus surcharge loads. If the retaining walls are restrained from free movement at both ends, they shall be designed for the earth pressure resulting from 60 pounds equivalent fluid pressure, to which shall be added surcharge loads.

25. In designing for allowable resistive lateral earth pressure (passive), a value of 250 pounds equivalent fluid pressure may be used with the resultant acting at the third point. The top foot of native soil shall be neglected for computation of passive resistance.

26. A friction coefficient of 0.3 shall be used for retaining wall design. This value may be increased by 1/3 for short-term seismic loads.

27. The above values assume a drained condition, and a moisture content compatible with those encountered during our investigation.

28. Drainage should be provided behind the retaining wall. The drainage system should consist of perforated pipe placed at the base of the retaining wall and surrounded by ¾ inch drain rock wrapped in a filter fabric. The drain rock wrapped in fabric should be at least 12 inches wide and extend from the base of the wall to within 1.5 feet of the ground surface. The upper 1.5 feet of backfill should consist of compacted native soil. The retaining wall drainage system should be sloped to outfall to a discharge facility.

29. As an alternative to the drain rock and fabric. Miradrain 2000 or approved equivalent may be used behind the retaining wall. The Miradrain 2000 should extend from the base of the wall to within two feet of the ground surface. A perforated pipe should be placed at the base of the wall in

direct contact with the Miradrain 2000. The pipe should be sloped to outfall to an appropriate discharge facility. The Miradrain fabric at the base of the Miradrain 2000 panel should be wrapped around the perforated pipe to prevent soil instruction into the pipe.

30. We recommend a thorough review by our office of all designs pertaining to facilities retaining a soil mass.

EXCAVATION

31. No difficulties due to soil conditions are anticipated in excavating the on-site material. Conventional earth moving equipment will be adequate for this project.

32. Any vertical cuts deeper than 5 feet must be properly shored. The minimum cut slope for excavation to the desired elevation is one horizontal to one vertical. The cut slope should be increased to 2:1 if the excavation is conducted during the rainy season or when the soil is highly saturated with water.

DRAINAGE

33. It is considered essential that positive drainage be provided during construction and be maintained throughout the life of the proposed structure.

34. The final exterior grade adjacent to the proposed structure should be such that the surface drainage will flow away from the structures. Rainwater discharge at downspouts should be directed onto pavement sections, splash blocks, or other acceptable facilities, which will prevent water from collecting in the soil adjacent to the foundations.

35. Utility lines that cross under or through perimeter footings should be completely sealed to prevent moisture intrusion into the areas under the

slab and/or footings. The utility trench backfill should be of impervious material and this material should be placed at least 4 feet on either side of the exterior footings.

36. Consideration should be given to collection and diversion of roof runoff and the elimination of planted areas or other surfaces, which could retain water in areas adjoining the building. In unpaved areas, it is recommended that protective slopes be stabilized adjoining perimeter building walls. These slopes should be extended to a minimum of 5 feet horizontally from building walls. They must have a minimum outfall of 5 percent.

37. If the subgrade in the landscaping area is moderately to highly expansive, proper drainage should be provided in the landscaping area adjacent to the building foundation. A drip irrigation system is preferable. If the sprinkler system is located adjacent to the building foundation or concrete walkway, a moisture cut-off barrier should be provided.

ABANDONMENT OF THE EXISTING UTILITY LINES

38. All existing and abandoned utility lines located within the new building pad must be removed.

39. All abandoned utility lines within 2 feet from existing ground surface should be removed.

40. Removing the utility lines would require proper backfill and re-compaction of the excavation. Abandoning utility lines in-place would require to cap the abandoned portion of the pipe and all exposed pipe ends with concrete and the removal of any surface clean-outs, manhole or drain inlet structures.

ON-SITE UTILITY TRENCHING

41. All on-site utility trenches must be backfilled with native on-site material or import fill and compacted to at least 90% relative maximum density in accordance with ASTM D1557-91. Backfill should be placed in 6 to 8 inch lifts and compacted. Jetting of trench backfill is not recommended. An engineer from our firm should be notified at least 48 hours before the start of any utility trench backfilling operations.

42. The utility trenches running parallel to the building foundation should not be located in an influence zone that will undermine the stability of the foundation. The influence zone is defined as the imaginary line extending at the outer edge of the footing at a downward slope of 1:1 (one unit horizontal distance to one unit vertical distance). If the utility trenches were encroaching the influence zone, the encroached area should be stabilized with cement sand slurry.

43. If utility trench excavation is to encounter groundwater, our office should be notified for dewatering recommendations.

PAVEMENT DESIGN

44. Due to the uniformity of the near-surface soil at the site, one R-Value Test was performed on a representative bulk sample. The result of the R-Value test is enclosed in this report. The following alternate sections are based on our laboratory resistance R-Value test of near-surface soil samples and traffic indices (T.I.) of 4.5 for parking stalls and 5.5 for parking area and driveway (travel way). Alternate pavement section designs, which satisfy the State of California Standard Design Criteria, and above traffic indices, are presented in Table II. Rigid and paver pavement section designs are presented in Table III and IV. Because of the high expansion potential of the surface native soil at the site, we provided alternative pavement section

(asphalt and baserock) recommendations for the parking area to be underlain by a minimum of 12 inches of non-expansive fill or lime-treated native material. The non-expansive fill soil and lime-treated native material should be compacted to at least 90% relative maximum density. These alternate pavement sections are presented in Table IIA, IIB and III. Due to the high expansion potential of the surface native soil, minor cracks in the pavement should be expected.

LIME TREATMENT ALTERNATIVES

45. Lime treatment of the subgrade soil can be considered as an option in order to reduce the high expansion potential of near-surface native soil and/or to weather proof (winterize) the subgrade soil during the winter construction of the building pad or parking and driveway areas. The lime treatment process should extend a minimum of 3 feet beyond the building pad, curb and gutter, and/or any other improvements. The top 12 inches of the subgrade can be treated with a mixture of 5% of quick lime (High Calcium) and native soil by volume. If the lime treatment is used, minor cracks on the concrete slab and separation of the curb/gutter and pavement should be expected. Therefore, in the building pad area, if lime treatment would be implemented, the baserock section could be reduced by one inch. In the parking area, if lime treatment would be implemented, the baserock section could be reduced as shown in Table IIB.

46. The lime-treated subgrade soil should not be exposed to the element for an extended period. If no improvements are planed for the immediate future, the lime-treated subgrade soil should be protected.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations presented herein are based on the soil conditions revealed by our test borings and evaluated for the proposed construction planned at the present time. If any unusual soil conditions are encountered during the construction, or if the proposed construction will differ from that planned at the present time, United Soil Engineering, Inc. should be notified for supplemental recommendations.

2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the necessary steps are taken to see that the contractor carries out the recommendations of this report in the field.

3. The findings of this report are valid, as of the present time. However, the passing of time will change the conditions of the existing property due to natural processes, works of man, from legislation or the broadening of knowledge. Therefore, this report is subjected to review and should not be relied upon after a period of three years.

4. The conclusions and recommendations presented in this report are professional opinions derived from current standards of geotechnical practice and no warranty is intended, expressed, or implied.

5. The area of the borings is very small compared to the site area. As a result, buried structures such as septic tanks, storage tanks, abandoned utilities, or etc. may not be revealed in the borings during our field investigation. Therefore, if buried structures are encountered during grading or construction, our office should be notified immediately for proper disposal recommendations.

6. This report has been prepared solely for the purpose of geotechnical investigation and does not include investigations for toxic contamination studies of soil or groundwater of any type. If there are any environmental concerns, our firm can provide additional studies.

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TABLES

TABLE I – SUMMARY OF MOISTURE/DENSITY, DIRECT SHEAR, PLASTICITY INDEX, AND LIQUID LIMITS

TABLE II – PROPOSED ALTERNATE PAVEMENT SECTIONS

TABLE IIA – PROPOSED NON-EXPANSIVE PAVEMENT SECTIONS

TABLE IIB – PROPOSED LIME TREATMENT PAVEMENT SECTIONS

TABLE III – PROPOSED RIGID PAVEMENT SECTIONS

TABLE IV – PROPOSED PAVER PAVEMENT SECTIONS

TABLE V – LIQUEFACTION ANALYSIS

TABLE I

SUMMARY OF MOISTURE/DENSITY, DIRECT SHEAR TEST, PLASTICITY INDEX, AND LIQUID LIMITS

Sample No.	Depth Ft.	In-Place Conditions		Direct Shear Testing			
		Dry Density p.c.f.	Moisture Content % Dry Wt.	Angle of Internal Friction Degrees	Unit Cohesion k.s.f.	Plasticity Index	Liquid Limit
1-1	3	100.0	21.7				
1-2	5	112.9	17.0				
1-3	10	101.7	23.6				
2-1	3	92.7	25.6				
2-2	5	111.1	17.4				
2-3	10	100.8	27.9				
3-1	3	109.5	19.5				
3-2	5	112.5	16.4				
3-3	10	101.5	23.3				
4-1	3	111.7	20.1	28	0.8		
4-2	5	113.2	19.3				
4-3	10	103.6	23.5			<12	
4-4	15	96.5	28.3			33	41
4-5	20	94.5	31.9				
4-6	25	93.7	32.7			30	40
4-7	30	90.1	37.1				
4-8	35	94.0	31.5			32	44

TABLE I (CONTINUED)

SUMMARY OF MOISTURE/DENSITY, DIRECT SHEAR TEST, PLASTICITY INDEX, AND LIQUID LIMITS

Sample No.	Depth Ft.	In-Place Conditions		Direct Shear Testing			
		Dry Density p.c.f.	Moisture Content % Dry Wt.	Angle of Internal Friction Degrees	Unit Cohesion k.s.f.	Plasticity Index	Liquid Limit
4-9	40	94.4	31.8				
4-10	45	98.1	32.0			35	46
4-11	50	99.5	33.6				
5-1	3	111.6	21.0				
5-2	5	108.7	19.0				
5-3	10	100.5	21.4				
5-4	15	97.7	26.8				
5-5	20	94.6	32.0				

TABLE II

PROPOSED ALTERNATE PAVEMENT SECTIONS

Location: Proposed Improvements
Challenger School
711 East Gish Road
San Jose, California

	PARKING STALLS			DRIVEWAY		
Design R-Value	6.0			6.0		
Traffic Index	4.5			5.5		
Gravel Equivalent	17.0			20.0		
Recommended Alternate Pavement Sections:	1A	1B	1C	2A	2B	2C
Asphalt Concrete	3.0"	3.5"	4.0"	3.0"	3.5"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	9.0"	8.0"	7.0"	11.0"	10.0"	9.0"
Native soil compacted to at least 90% relative maximum density	12.0"	12.0"	12.0"	12.0"	12.0"	12.0"

TABLE IIA

PROPOSED NON-EXPANSIVE PAVEMENT SECTIONS

Location: Proposed Improvements
Challenger School
711 East Gish Road
San Jose, California

	PARKING STALLS			DRIVEWAY		
Design R-Value	24.0			24.0		
Traffic Index	4.5			5.5		
Gravel Equivalent	14.0			16.0		
Recommended Alternate Pavement Sections:	1A	1B	1C	2A	2B	2C
Asphalt Concrete	3.0"	3.5"	4.0"	3.0"	3.5"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	6.0"	5.0"	4.0"	9.0"	8.0"	7.0"
Non-expansive soil fill material compacted to at least 90% relative maximum density	12.0"	12.0"	12.0"	12.0"	12.0"	12.0"
Native soil compacted to at least 90% relative maximum density	12.0"	12.0"	12.0"	12.0"	12.0"	12.0"

TABLE IIB

PROPOSED LIME TREATMENT PAVEMENT SECTIONS

Location: Proposed Improvements
Challenger School
711 East Gish Road
San Jose, California

	PARKING STALLS	DRIVEWAY		
Design R-Value	24.0	24.0		
Traffic Index	4.5	5.5		
Gravel Equivalent	14.0	16.0		
Recommended Alternate Pavement Sections:	1	2A	2B	2C
Asphalt Concrete	3.0"	3.0"	3.5"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	4.0"	7.0"	6.0"	5.0"
Lime-treated native soil material compacted to at least 90% relative maximum density	12.0"	12.0"	12.0"	12.0"

TABLE III

PROPOSED RIGID PAVEMENT SECTIONS

Location: Proposed Improvements
Challenger School
711 East Gish Road
San Jose, California

	DRIVEWAY*			CURB & GUTTER			SIDEWALK		
Recommended Rigid Pavement Sections:	1A	1B	1C	2A	2B	2C	3A	3B	3C
P.C. Concrete*	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.0"	4.0"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	12.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	4.0"	4.0"
Non-expansive soil fill material compacted to at least 90% relative maximum density	---	12.0"	---	---	12.0"	---	---	12.0"	---
Lime-treated native soil material compacted to at least 90% relative maximum density	---	---	12.0"	---	---	12.0"	---	---	12.0"
Native soil compacted to at least 90% relative maximum density	12.0"	12.0"	---	12.0"	12.0"	---	12.0"	12.0"	---

* Including trash enclosures and valley gutters. Reinforcement provided by Structural Engineer. Maximum control joints at 10' x 10'.

TABLE IV

PROPOSED PAVER PAVEMENT SECTIONS

Location:

Proposed Improvements
Challenger School
711 East Gish Road
San Jose, California

	DRIVEWAY/PARKING AREA		
Recommended Paver Pavement Sections:	1A	1B	1C
Paver (Interlocking Concrete Unit Paver)	Min. 3.25" ±	Min. 3.25" ±	Min. 3.25" ±
Sand	1.0"	1.0"	1.0"
P.C. Concrete	6.0"	6.0"	6.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	12.0"	6.0"	4.0"
Non-expansive soil fill material compacted to at least 90% relative maximum density	---	12.0"	---
Lime-treated native soil material compacted to at least 90% relative maximum density	---	---	12.0"
Native soil compacted to at least 90% relative maximum density	12.0"	---	12.0"

* If permeable pavers, subdrain system should be required.

TABLE V
LIQUEFACTION ANALYSIS

Boring	Liquefiable Soil Layer		N	N_{60}	$(N_1)_{60}$	σ_{ov} (k.s.f)	u (k.s.f.)	σ'_{ov} (k.s.f)	CSR	CRR	F.S.	Liquefaction -induced Settlements (Inch)
	Depth (Feet)	Thickness (Feet)										
B-4	7-13	6	11	7	8	1.85	0.37	1.48	0.47	0.08	1.7	2.0

NOTES:

N = measured standard penetration test N value

N_{60} = standard penetration test N value corrected for field testing procedures

$(N_1)_{60}$ = standard penetration test N value corrected for both field testing procedures and overburden pressure

σ_{ov} = total vertical stress in kip per square foot (k.s.f.) at a particular depth where the liquefaction analysis is performed

u = pore pressure in kip per square foot (k.s.f.) at a particular depth where the liquefaction analysis is performed

σ'_{ov} = vertical effective stress in kip per square foot (k.s.f.); $\sigma'_{ov} = \sigma_{ov} - u$, also called the effective overburden pressure

CSR = cyclic stress ratio, also called seismic stress ratio

CRR = cyclic resistance ratio obtained from Figure 9

F.S. = CRR/ CSR = Factor of Safety against liquefaction

FIGURES

FIGURE 1 - VICINITY MAP

FIGURE 2 - SITE PLAN

FIGURE 3 - FAULT LOCATION MAP

FIGURE 4 - PLASTICITY INDEX CHART

FIGURE 5 - COMPACTION TEST A

FIGURE 6 - LIQUEFACTION-INDUCED GROUND DAMAGE

FIGURE 7 - CORRECTION FACTOR C_N FOR EFFECTIVE OVERBURDEN PRESSURE

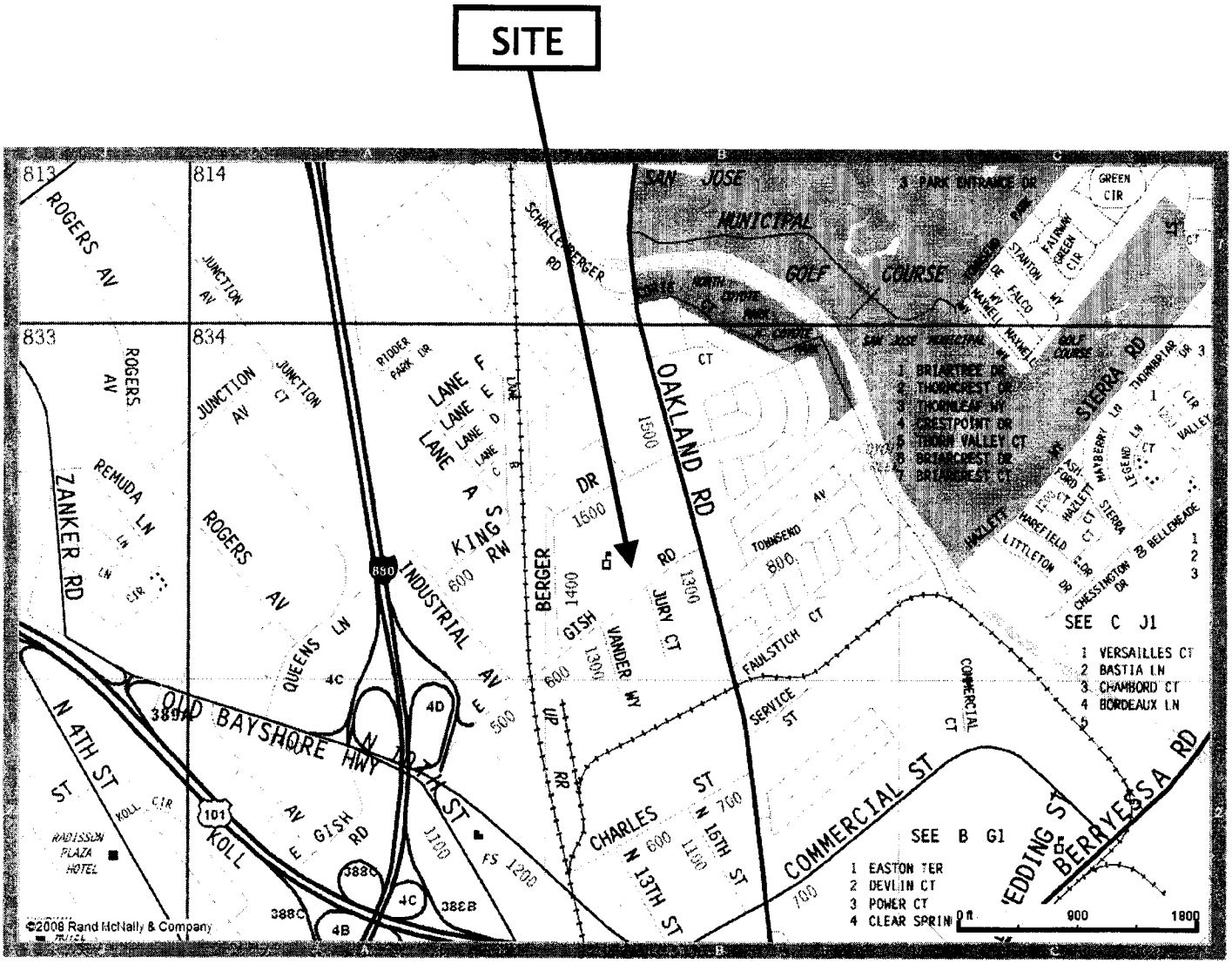
FIGURE 8 - REDUCTION FACTOR (r_d)

FIGURE 9 - CYCLIC RESISTANCE RATIO (CRR)

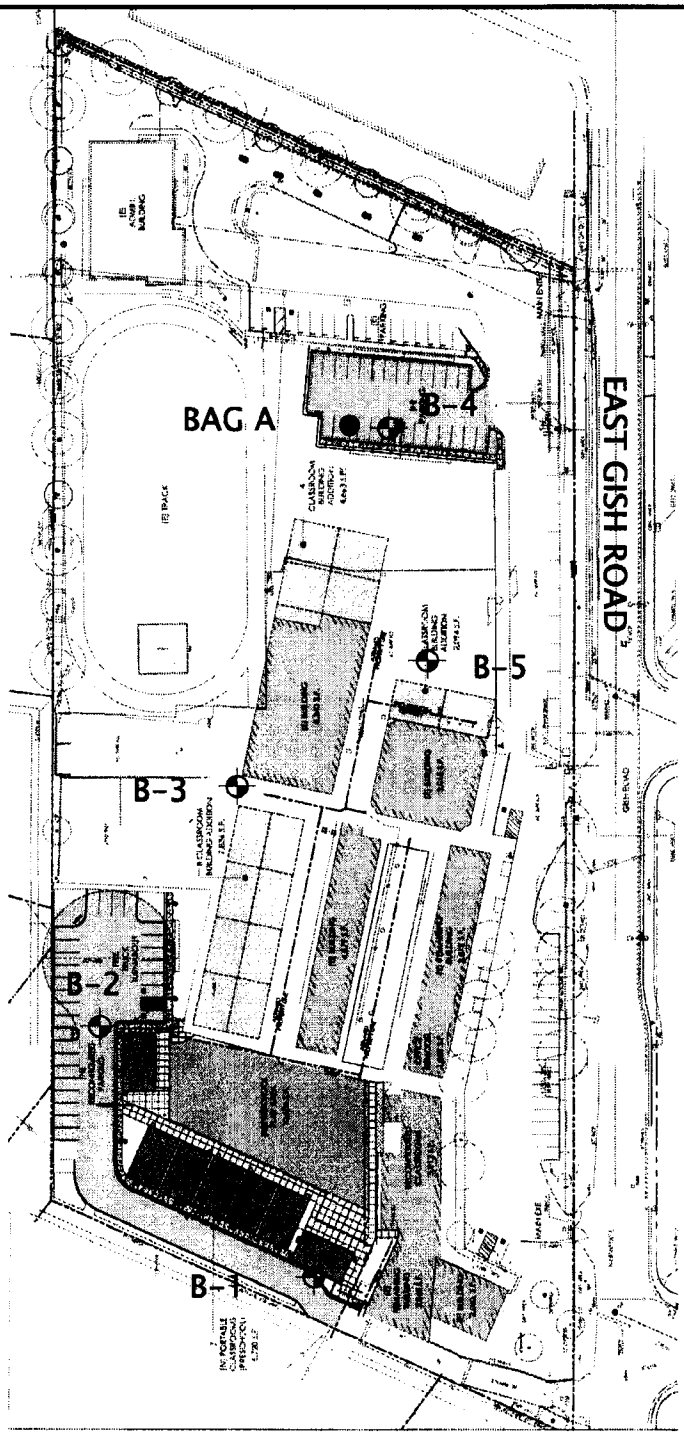
FIGURE 10 - MAGNITUDE SCALING FACTORS

FIGURE 11 - LIQUEFACTION-INDUCED GROUND SURFACE SETTLEMENT

FIGURE 12 - R-VALUE TEST

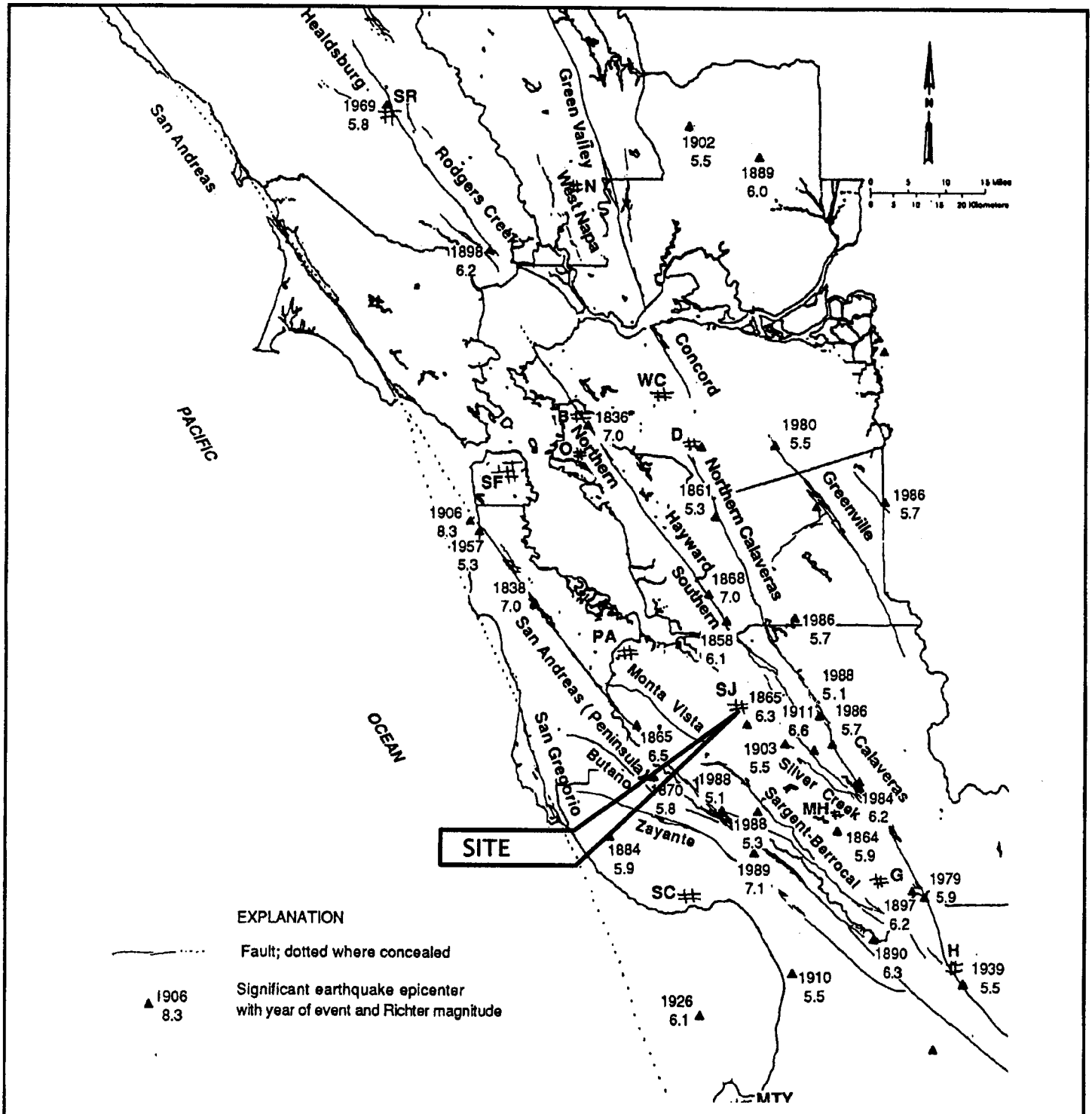


United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**VICINITY MAP** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No.: 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 1 November 2011



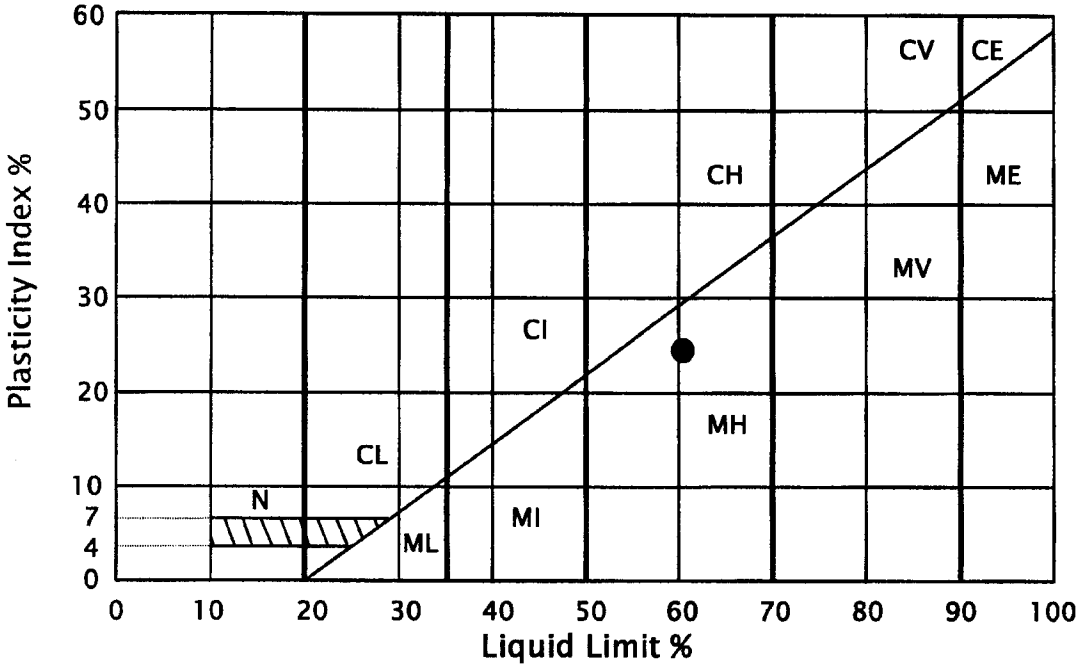
NOTE: ⊕ DENOTES APPROXIMATE EXPLORATORY BORING LOCATION
● DENOTES APPROXIMATE EXPLORATORY BAG SAMPLE LOCATION

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**SITE PLAN** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No.: 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 2 November 2011



United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**FAULT LOCATION MAP** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No.: 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 3 November 2011

PLASTICITY CHART

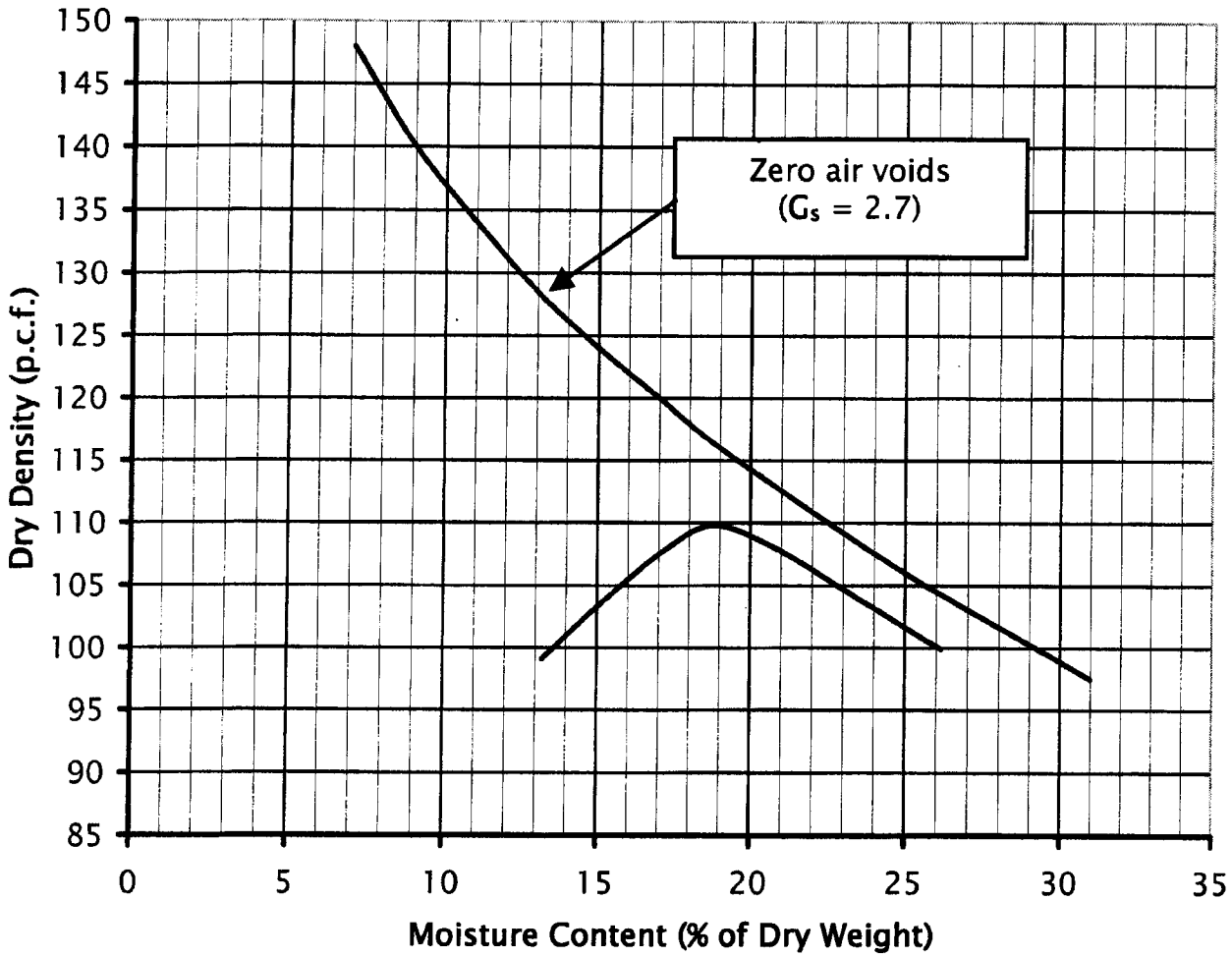


PLASTICITY DATA

Key Symbol	Hole No.	Depth ft.	Liquid Limit %	Plasticity Index %	Unified Soil Classification Symbol *
●	BAG A	0-1	25	60	MH

*Soil type classification Based on British suggested revisions to Unified Soil Classification System

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**PLASTICITY INDEX** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No.: 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 4 November 2011



SAMPLE: A

DESCRIPTION: Black to Dark Olive Brown Clayey SILT

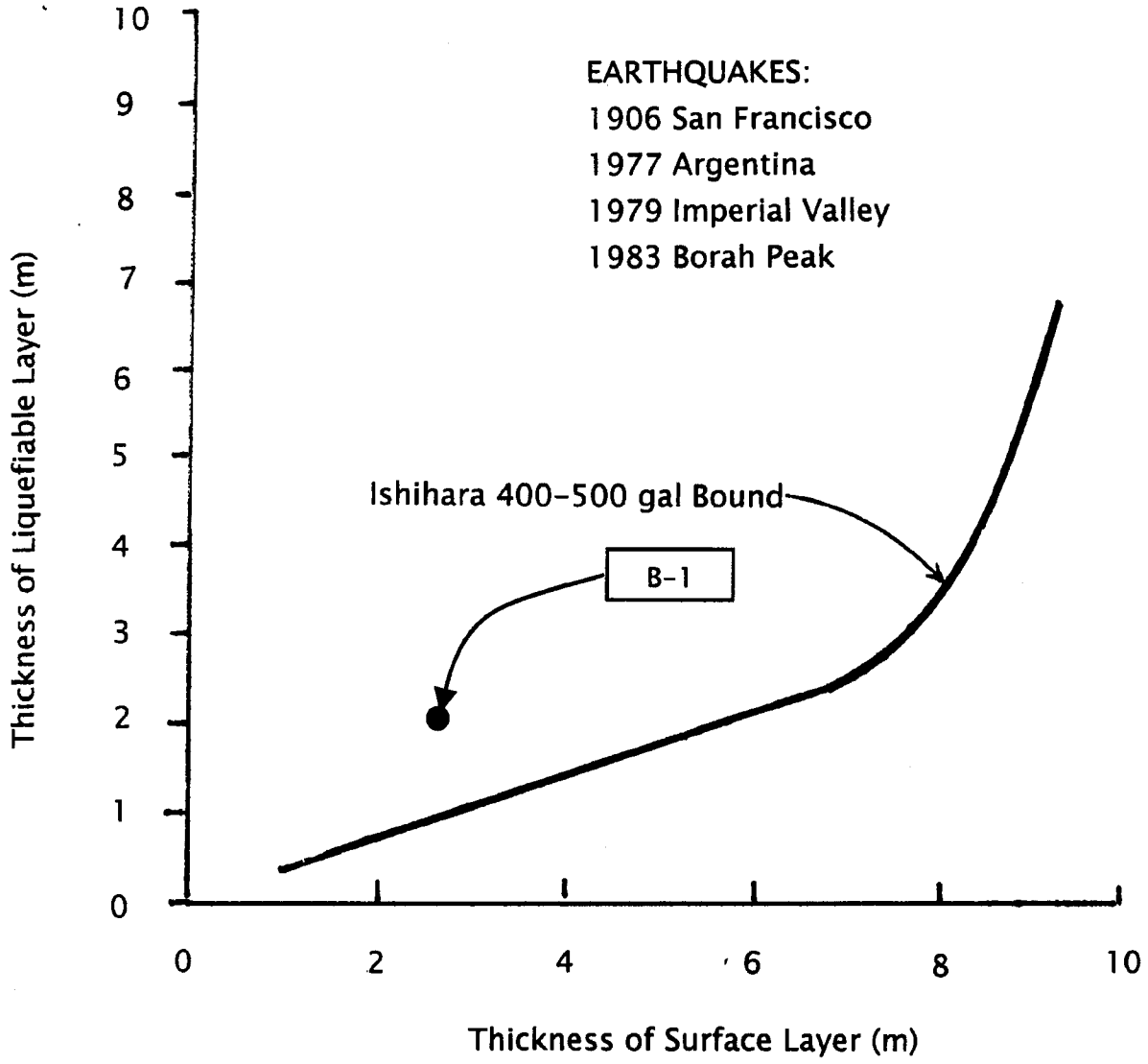
LABORATORY TEST PROCEDURE: ASTM D1557-91

MAXIMUM DRY DENSITY: 110.0 p.c.f.

OPTIMUM MOISTURE CONTENT: 19.0 %

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**COMPACTION TEST A** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 5 November 2011

Magnitude Range: 5.9 to 8.0 M_w
Acceleration Range: 0.56 to 0.78g



United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**LIQUEFACTION-INDUCED GROUND DAMAGE** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 6 November 2011

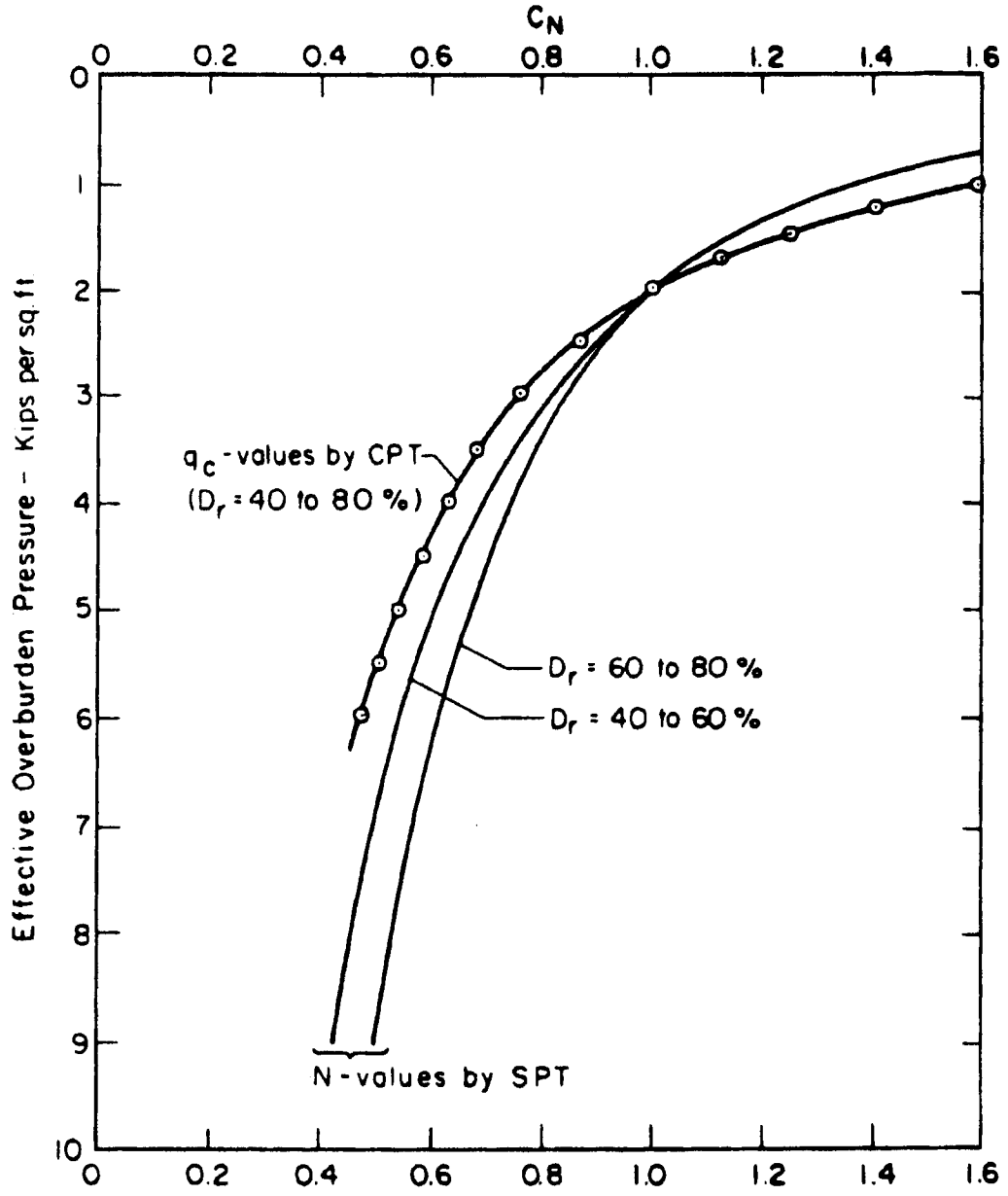


FIGURE 5.11 Correction factor C_N used to adjust the standard penetration test N value and cone penetration test q_c value for the effective overburden pressure. The symbol D_r refers to the relative density of the sand. (*Reproduced from Seed et al. 1983, with permission from the American Society of Civil Engineers.*)

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**CORRECTION FACTOR C_N FOR EFFECTIVE OVERBURDEN PRESSURE** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 7 November 2011

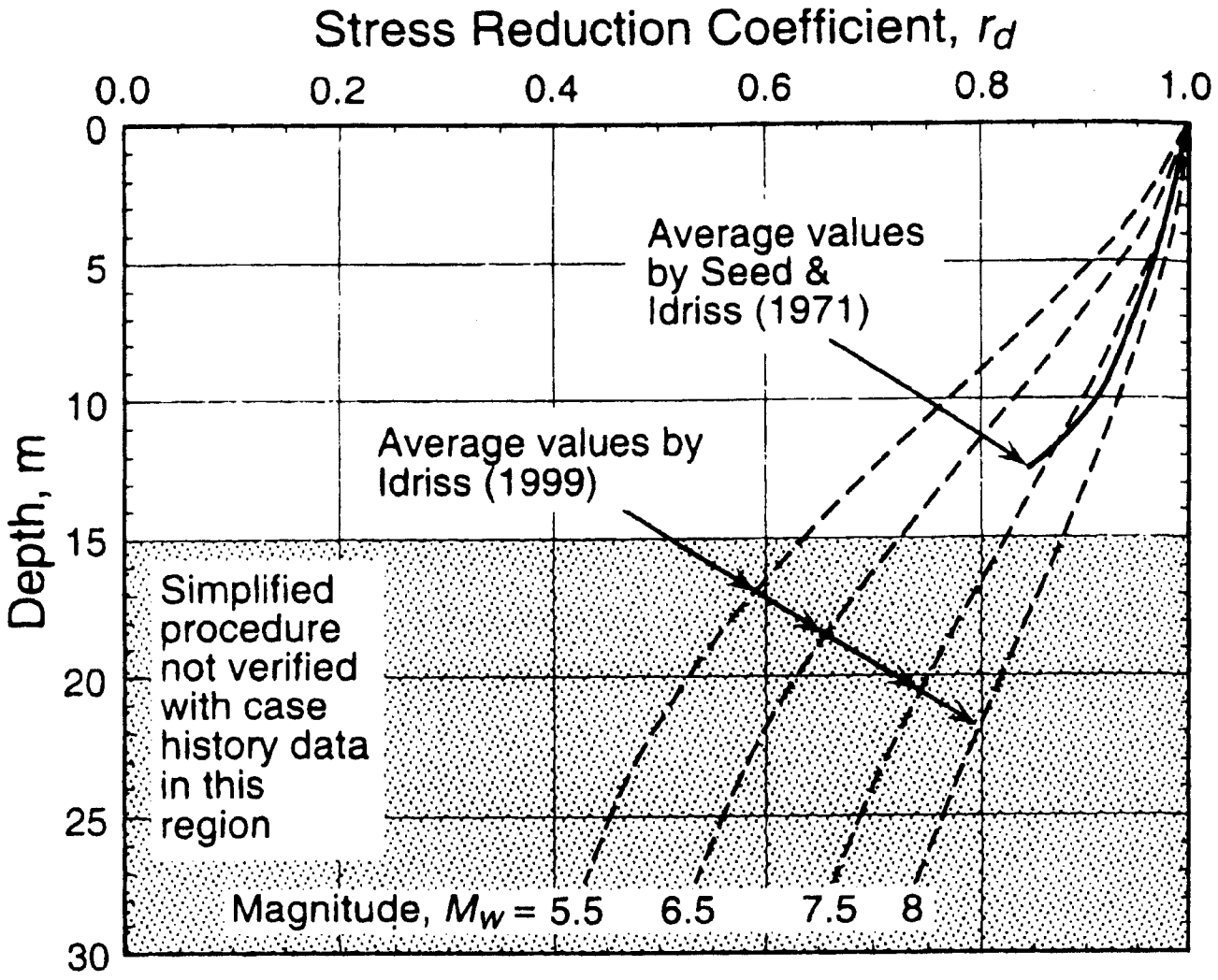


FIGURE 6.5 Reduction factor r_d versus depth below level or gently sloping ground surfaces. (*From Andrus and Stokoe 2000, reproduced with permission from the American Society of Civil Engineers.*)

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**REDUCTION FACTOR (R_D)** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 8 November 2011

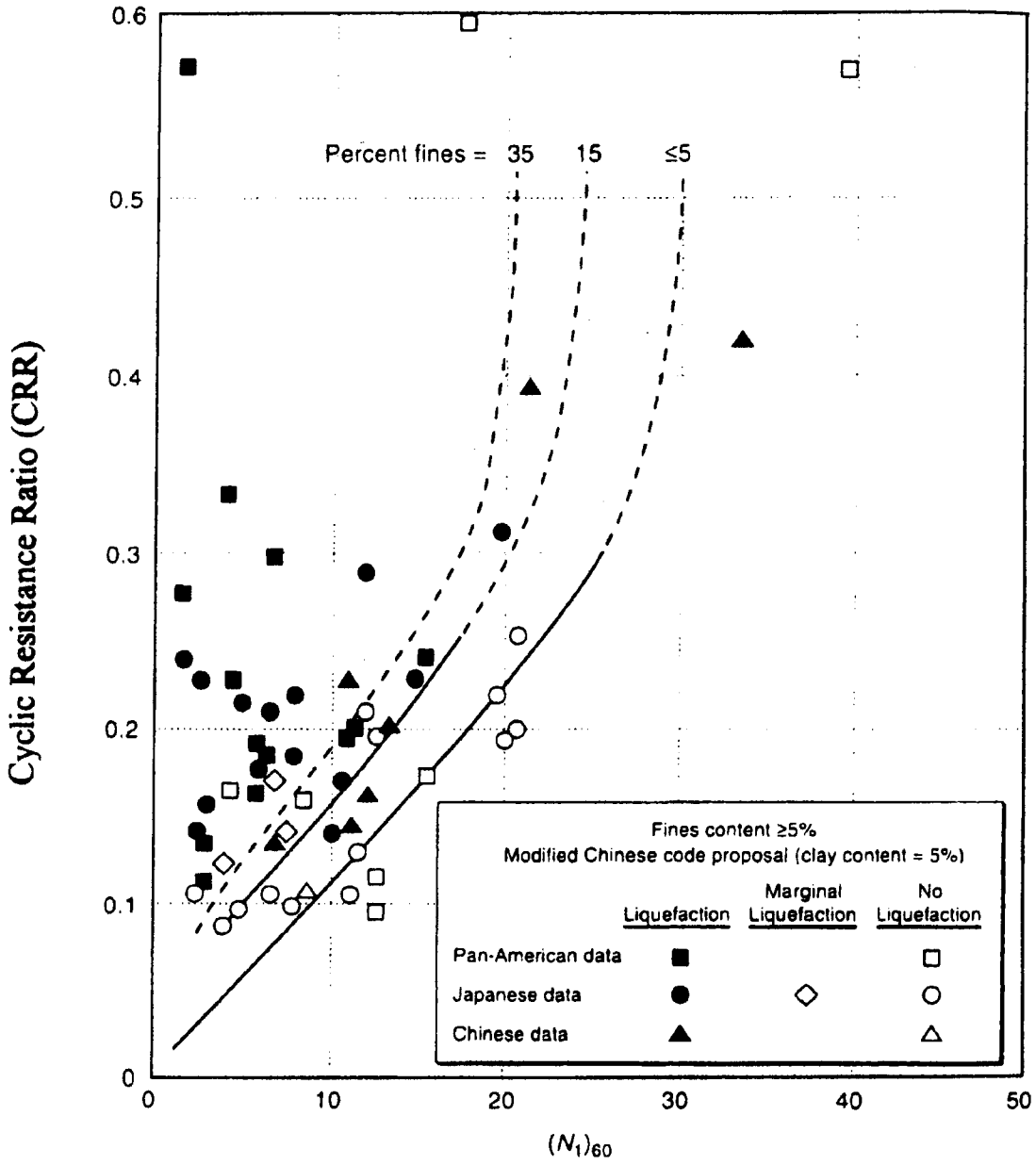


FIGURE 6.6 Plot used to determine the cyclic resistance ratio for clean and silty sands for $M = 7.5$ earthquakes. (*After Seed et al. 1985, reprinted with permission of the American Society of Civil Engineers.*)

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**CYCLIC RESISTANCE RATIO (CRR)** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 9 November 2011

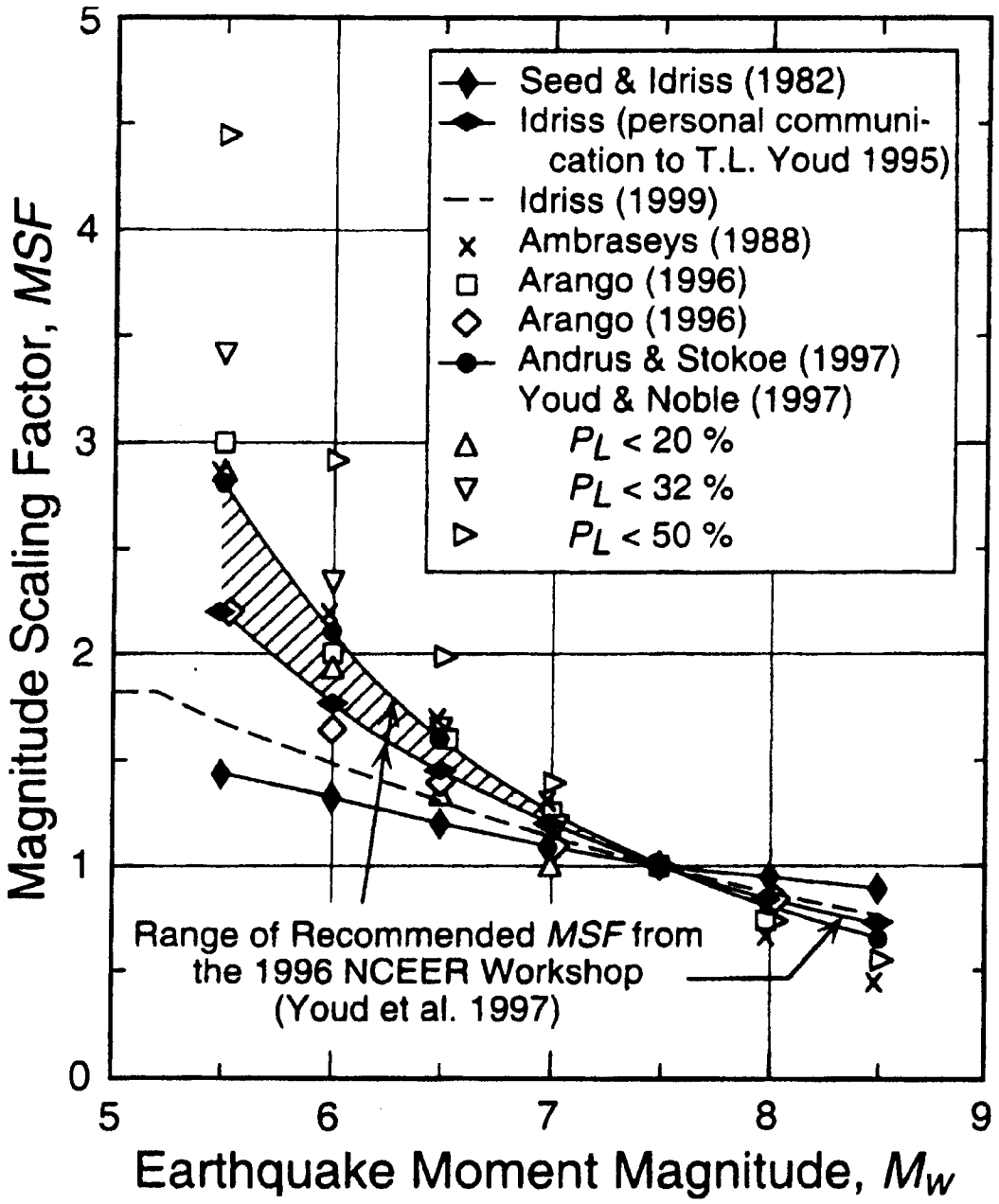


FIGURE 6.7 Magnitude scaling factors derived by various investigators. (*From Andrus and Stokoe 2000, reprinted with permission of the American Society of Civil Engineers.*)

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**MAGNITUDE SCALING FACTORS** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 10 November 2011

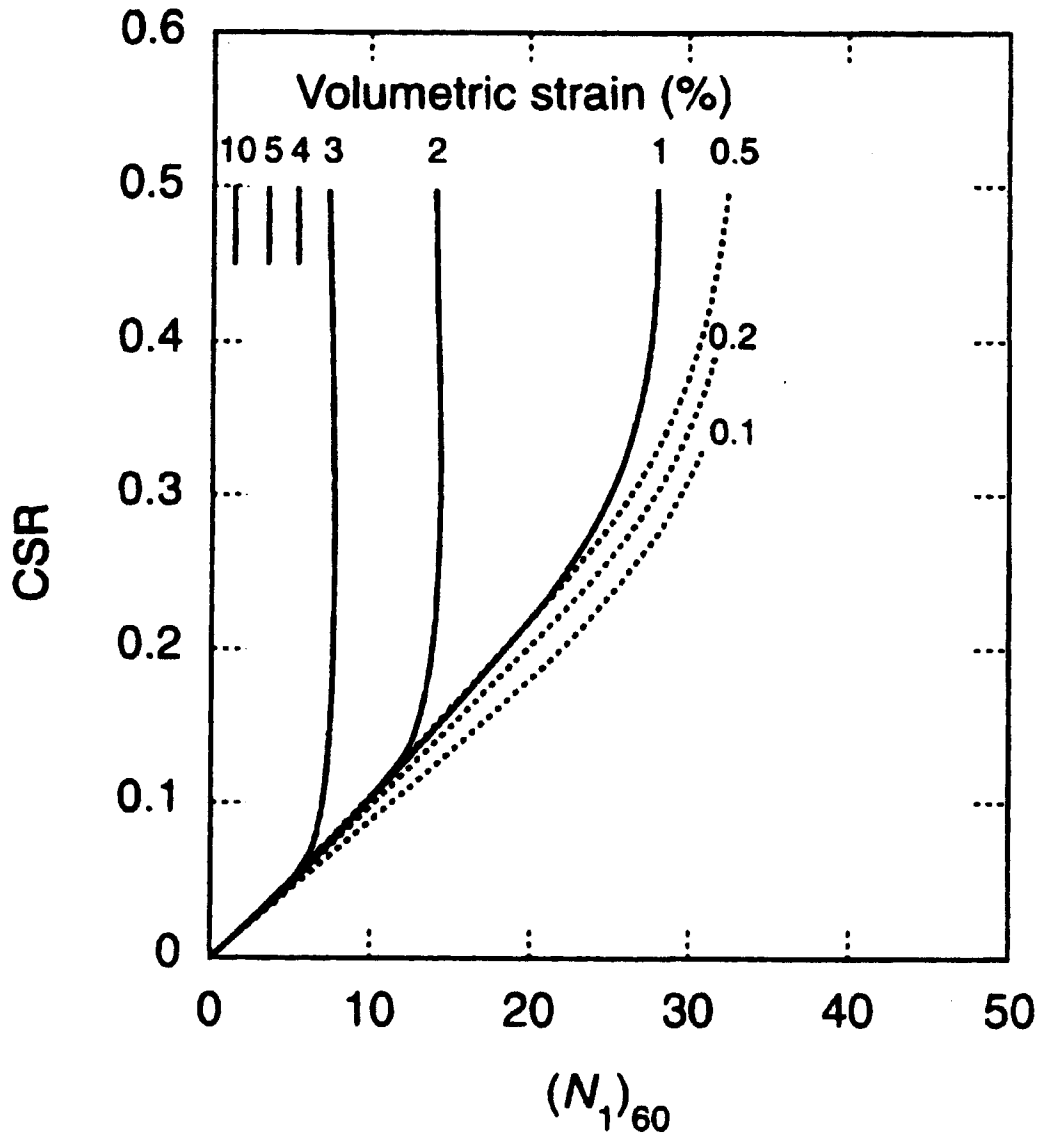
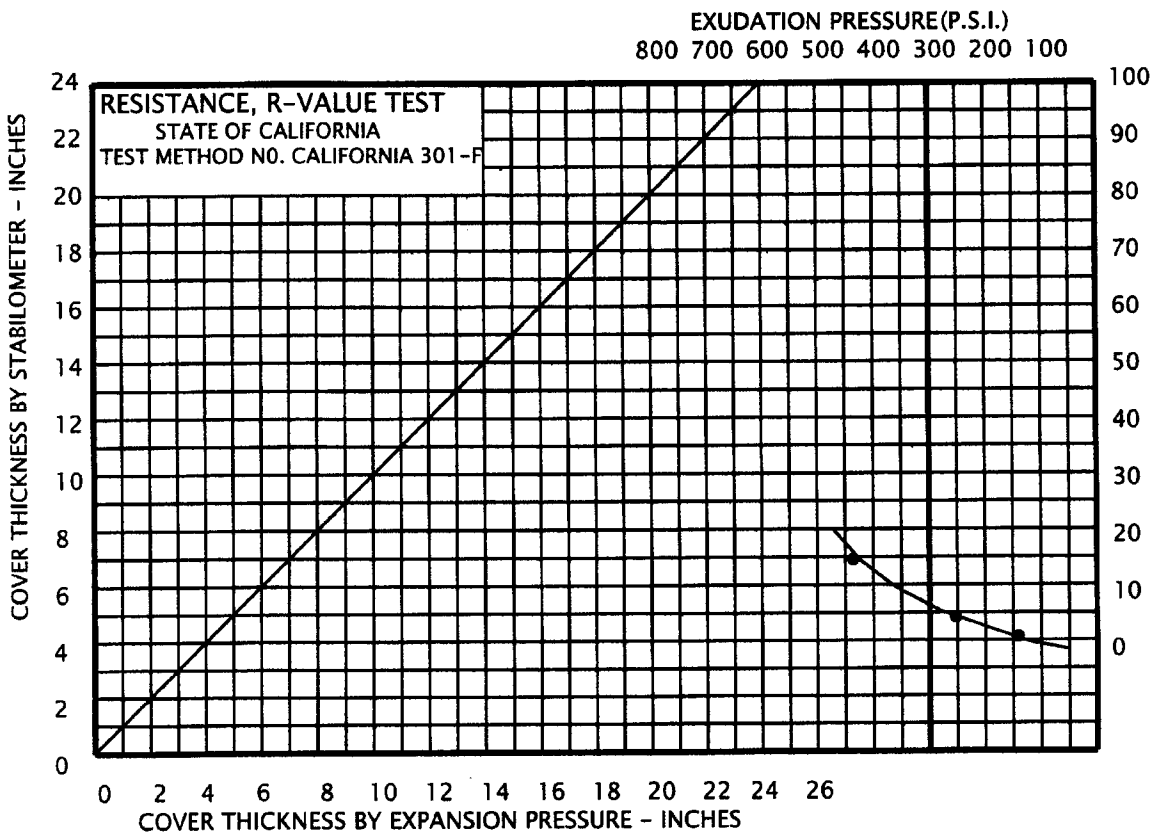


FIGURE 7.2 Chart for estimating the ground surface settlement of clean sand for factor of safety against liquefaction less than or equal to 1.0 (solid lines) and greater than 1.0 (dashed lines). To use this figure, the cyclic stress ratio from Eq. (6.6) and the $(N_1)_{60}$ value from Eq. (5.2) must be determined. (*Reproduced from Kramer 1996, originally developed by Tokimatsu and Seed 1984.*)

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	LIQUEFACTION-INDUCED GROUND SURFACE SETTLEMENT Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1	FIGURE
		Drawn by: V.V.	11
		Scale: NOT TO SCALE	November 2011



SAMPLE: A
DESCRIPTION: Black to Dark Olive Brown Silty CLAY

SPECIMEN	A	B	C
EXUDATION PRESSURE (P.S.I.)	149.0	251.0	449.0
EXPANSION DIAL (.0001")	9.0	14.0	20.0
EXPANSION PRESSURE (P.S.F.)	45.0	76.0	94.0
RESISTANCE VALUE, "R"	1.0	4.0	15.0
% MOISTURE AT TEST	20.7	18.0	17.6
DRY DENSITY AT TEST (P.C.F.)	106.7	108.5	111.2
R-VALUE AT 300 P.S.I. EXUDATION PRESSURE	= (6)		

United Soil Engineering, Inc. 3476 Edward Avenue Santa Clara, CA 95054 (408) 988-2990	**R-VALUE TEST** Proposed Improvements Challenger School 711 East Gish Road San Jose, California	File No. 6191-S1 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 12 November 2011

APPENDICES

MODIFIED MERCALLI SCALE

METHOD OF SOIL CLASSIFICATION

EXPLANATION OF BORING LOG SYMBOLS

EXPLORATORY BORING LOGS (B-1 TROUGH B-5)

File No. 6191-S1

GENERAL COMPARISON BETWEEN EARTHQUAKE MAGNITUDE AND THE EARTHQUAKE EFFECTS DUE TO GROUND SHAKING

Earthquake Category	Richter Magnitude	Modified Mercalli Intensity Scale* (After Housner, 1970)	Damage to Structure
		I - Detected only by sensitive instruments.	
	2.0	II - Felt by few persons at rest, especially on upper floors; delicate suspended objects may swing.	
	3.0	III - Felt noticeably indoors, but not always recognized as an earthquake; standing cars rock slightly, vibration like passing truck.	No Damage
Minor		IV - Felt indoors by many, outdoors by a few; at night some awaken; dishes, windows, doors disturbed; cars rock noticeably.	
	4.0	V - Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects.	Architec-tural Damage
		VI - Felt by all; many are frightened and run outdoors; falling plaster and chimneys; damage small.	
5.3	5.0	VII - Everybody runs outdoors. Damage to building varies, depending on quality of construction; noticed by drivers of cars.	
Moderate	6.0	VIII - Panel walls thrown out of frames; fall of walls, monuments, chimneys; sand and mud ejected; drivers of cars disturbed.	
6.9		IX - Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked, underground pipes broken; serious damage to reservoirs and embankments.	Structural Damage
Major	7.0	X - Most masonry and frame structures destroyed; ground cracked; rail bent slightly; landslides.	
7.7		XI - Few structures remain standing; bridges destroyed; fissures in ground; pipes broken; landslides; rails bent.	
Great	8.0	XII - Damage total; waves seen on ground surface; lines of sight and level distorted; objects thrown into the air; large rock masses displaced.	Near Total Destruction

*Intensity is a subject measure of the effect of the ground shaking, and is not engineering measure of the ground acceleration.

File No. 6191-S1

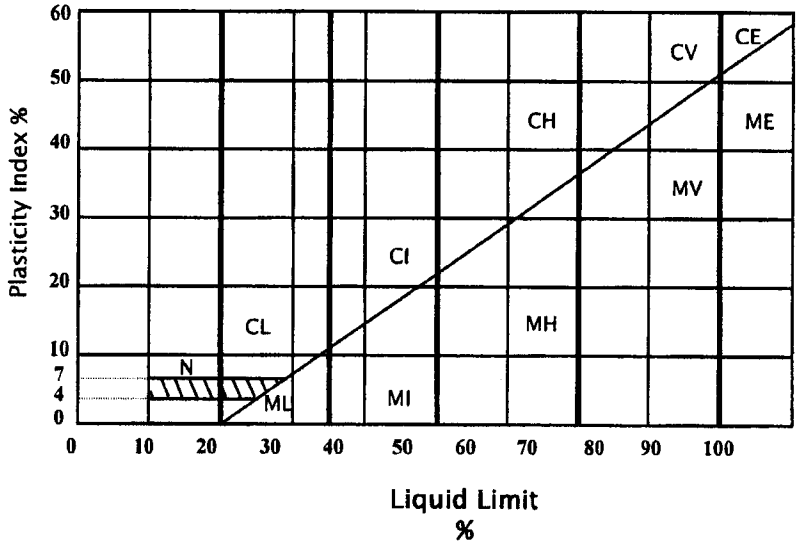
METHOD OF SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		SYMBOL		TYPICAL NAMES
COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	GRAVELS (More than 1/2 of coarse fraction > no. 4 sieve size)	GW		Well graded gravel or gravel-sand mixtures, little or no fines
		GP		Poorly graded gravel or gravel-sand moistures, little or no fines
		GM		Silty gravels, gravel-sand-silt mixtures
		GC		Clayey Gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < no. 4 sieve size	SW		Well graded sands or gravelly sands, no fines
		SP		Poorly graded sands or gravelly sands, no fines
		SM		Silty sands, sand-silt mixtures
		SC		Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	SILTS & CLAYS LL < 50	ML		Inorganic silts and very fine sand, rock, flour, silty or clayey fine sand or clayey silt/slight plasticity
		CL		Inorganic clay of low to medium plasticity, gravelly clayes, sandy clay, silty clay, lean clays
		OL		Organic siltys and organic silty clay of low plasticity
	SILTS & CLAYS LL > 50	MH		Inorganic silts, micaceous or diatocaceous fine sandy, or silty soils, elastic silt
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOIL		PT		Peat and other highly organic soils

CLASSIFICATION CHART - UNIFIED SOIL CLASSIFICATION SYSTEM

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size In Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVELS Coarse Fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
SAND Coarse Medium Fine	No. 4 to No. 200 No. 4 to No. 10 No.10 to No. 40 No.40 to No. 200	4.76 to 0.074 4.76 to 2.00 2.00 to 0.420 0.420 to 0.074
SILT AND CLAY	Below No. 200	Below 0.074

PLASTICITY INDEX CHART



Method of Soil Classification Chart

United Soil Engineering, Inc.

Logged By:	EXPLANATION OF TEST	Boring No.
Date Drilled:	BORING SYMBOLS	

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Unconf. Comp. Strength, k .s.f.	Direct Shear Test "C" k.s.f.	Direct Shear Test "ø" Degree	Sample Number	Depth in Feet	Boring Log	File No. 6191-S1 STATIC GROUNDWATER GROUNDWATER FIRST NOTED DESCRIPTION
									CLAY
									SILT
									SAND
									GRAVEL
									clayey
									silty
									sandy
									gravelly
						1-1			Sample Taken with sample number and lab results given
									Sample Attempt - Unsuccessful No Sample Number
		**							Refusal noted in Remarks
									SANDSTONE/SILTSTONE BEDROCK

Remarks:

Logged By: V.V.

Date Drilled: 10/25/11

EXPLORATORY BORING LOG

Boring No. B-1

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "Ø" Degree	Plasticity Index (P.I.)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
										2" Asphalt Concrete/4" Aggregate Base
100.0	21.7	8*					1-1	3		Black to Dark Olive Brown Clayey SILT (ML) Moist, firm
112.9	17.0	12*					1-2	5		Color Changed to olive brown
101.7	23.6	11*					1-3	10		Light Olive Brown Silty SAND (SP) Moist, medium dense
										Boring terminated at 10 feet

Remarks: * Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

Logged By: V.V.

Date Drilled: 10/20/11

EXPLORATORY BORING LOG

Boring No. B-2

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "Ø" Degree	Plasticity Index (P.I.)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
										3" Asphalt Concrete/6" Aggregate Base
92.7	25.6	10*					2-1	3		Black to Dark Olive Brown Clayey SILT (ML) Moist, stiff
111.1	17.4	13*					2-2	5		Color Changed to olive brown
100.8	27.9	21*					2-3	10		Light Olive Brown Silty SAND (SP) Moist, medium dense
										Boring terminated at 10 feet

Remarks: * Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

Logged By: V.V.

Date Drilled: 10/25/11

EXPLORATORY BORING LOG

Boring No. B-3

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "ø" Degree	Plasticity Index (P.I.)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
										2" Asphalt Concrete/4" Aggregate Base
109.5	19.5	11*					3-1	3		Black to Dark Olive Brown Clayey SILT (ML) Moist, stiff
112.5	16.4	13*					3-2	5		Color Changed to olive brown
101.5	23.3	18*					3-3	10		Light Olive Brown Silty SAND (SP) Moist, medium dense
										Boring terminated at 10 feet

Remarks: ✠ Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

Logged By: V.V.

Date Drilled: 10/25/11

EXPLORATORY BORING LOG

Boring No. B-4

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "Ø" Degree	Plasticity Index (P.I.)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
111.7	20.1	7*	0.8	28			4-1	3		4 inches of organic material Black to Dark Olive Brown Clayey SILT (ML) Moist, firm Color Changed to olive brown
113.2	19.3	11*					4-2	5		
103.6	23.5	11*			<12		4-3	10		Light Olive Brown Silty SAND (SP) Moist, medium dense Fine to medium grain Poorly graded
96.5	28.3	40*			33	41	4-4	15		Olive Brown Silty CLAY (CL) Moist, very stiff
94.5	31.9	33*					4-5	20		
93.7	32.7	30*			30	40	4-6	25		
90.1	37.1	28*					4-7	30		Color changed to bluish gray

Remarks: * Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

Logged By: V.V.

Date Drilled: 10/25/11

EXPLORATORY BORING LOG

Boring No. B-4 (Continued)

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "Ø" Degree	Plasticity Index (P.I)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
										Bluish Gray Silty CLAY (CL) Moist, very stiff
94.0	31.5	37*			32	44	4-8	35		
94.4	31.8	33*					4-9	40		
98.1	32.0	35*			35	46	4-10	45		
99.5	33.6	44*					4-11	50		Became hard Boring terminated at 50 feet

Remarks: * Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

Logged By: V.V.
Date Drilled: 10/25/11

EXPLORATORY BORING LOG

Boring No. B-5

File No. 6191-S1

Dry Density p.c.f.	Moisture Content %	Penet. Resist. Blows/ft.	Direct Shear Test "C" k.s.f.	Direct Shear Test "Ø" Degree	Plasticity Index (P.I.)	Liquid Limit (LL)	Sample Number	Depth in Feet	Boring Log	DESCRIPTION
111.6	21.0	8*					5-1	3		3" Asphalt Concrete/4" Aggregate Base Black to Dark Olive Brown Clayey SILT (ML) Moist, firm
108.7	19.0	10*					5-2	5		Color Changed to olive brown
100.5	21.4	12*					5-3	10		Light Olive Brown Silty SAND (SP) Moist, medium dense Fine to medium grain Poorly graded
97.7	26.8	33*					5-4	15		Olive Brown Silty CLAY (CL) Moist, very stiff
94.6	32.0	28*					5-5	20		Boring terminated at 20 feet

Remarks: * Standard Penetration Test (S.P.T.), A.S.T.M. Standard D1586

United Soil Engineering, Inc.

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Challenger School Expansion

Transportation Impact Analysis

Prepared for:

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February 14, 2012

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Executive Summary

This report presents the results of the traffic impact analysis conducted for the proposed Challenger School expansion located at 711 East Gish Road in San Jose, California. The proposed expansion of the existing school consists of the demolition of 4 existing buildings totaling 13,775 square feet (s.f.) and the addition of 8 portables for an increase of 3 classrooms. The expansion will provide for an allowed increase in student enrollment of 160 students. The school has a permitted size of 775 students, although 859 students currently are enrolled. The project would increase Challenger School's permitted size to 935 students.

Primary access to the project would remain as existing via Gish Road with one inbound driveway located at the eastern end of the project site and one outbound driveway located toward the western end of the project site. In addition, faculty and staff take access to the project site via an inbound/outbound driveway located west of the outbound only driveway.

This study was conducted for the purpose of identifying potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of San Jose. Since the project would generate more than 100 peak hour vehicle trips, an analysis in accordance with the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP) guidelines also was prepared. The study determined the traffic impacts of the proposed school expansion on seven signalized intersections, one unsignalized intersection, and six freeway segments in the vicinity of the project site during the weekday AM and PM peak periods of traffic.

Project Trip Generation and Trip Distribution Pattern

The AM and PM peak hour trips generated by the proposed Challenger School expansion were calculated based on existing driveway counts. The driveways were counted on Wednesday, October 26th 2011. Based on the driveway counts, the existing 859-student school is generating trips at a rate of 1.17 trips per student during the AM peak hour and 0.50 trips per student during the PM peak hour. These rates were applied to the proposed increase in student enrollment.

The trip distribution pattern for the project was determined based on the existing travel patterns to and from the school. School route survey forms were distributed to parents/caregivers of all students currently enrolled at Challenger School. The forms, which included maps, requested that each parent/caregiver trace the path they currently drive to and from the school. The AM and PM peak hour trips generated by the proposed project were assigned to the roadway system in accordance with the trip distribution pattern that was developed based on the survey data.

Intersection Level of Service Analysis

The results of the intersection level of service analysis are summarized in Table ES-1. The results show that, measured against the City of San Jose and CMP level of service impact criteria, the study intersection of Oakland Road and US 101 North Ramps would be significantly impacted by the project. The impact and proposed mitigation are described below.

Oakland Road and US 101 North Ramps

Impact: This intersection would operate at LOS F during the AM peak hour under background conditions, and the added trips as a result of the project would cause the average critical delay to increase by 4.5 seconds (four seconds or more) and the V/C ratio to increase by 0.01 (one percent or more). Based on the City of San Jose and CMP level of service impact criteria, this constitutes a significant project impact.

Mitigation: Participation in the US 101/Oakland/Mabury TDP Traffic Impact Fee Program.

US 101/Oakland/Mabury Transportation Development Policy (TDP)

The City of San Jose has identified operational problems along the Oakland Road corridor at the US 101 interchange, which are due primarily to the capacity constraints of the interchange. The interchange's current configuration is inadequate to serve the vehicular demand due to it serving as the main gateway into the Oakland Road area and as the only route across US 101. As a result, the City has identified two key capital improvement projects: 1) modification of the US 101/Oakland Road interchange, including improvements to the Oakland Road/Commercial Street intersection, and 2) construction of a new US 101/Mabury Road interchange. Both interchange projects will create additional capacity for accessing and crossing US 101, which will be crucial to accommodate future growth in the vicinity, including the future BART station at the San Jose Flea Market site. To fund these necessary interchange improvements, the City has developed the US 101/Oakland/Mabury Transportation Development Policy (TDP).

The purpose of the US 101/Oakland/Mabury TDP is to provide additional needed freeway access capacity at the US 101/Oakland Road interchange in order to accommodate new mixed-use, commercial and residential development, and to provide incentives for new industrial development in the areas of San Jose generally surrounding the interchange that otherwise would not be possible due to existing capacity constraints. The result of the City Council's approval of the US 101/Oakland/Mabury TDP is a change to the normal sequence of events, allowing one or more projects to develop and generate traffic congestion in excess of the City's Level of Service Policy standard for a temporary period of time prior to construction of the required transportation improvements. As part of the new Policy, a fee to fund the planned interchange improvements has been adopted. Any project that would add traffic to the US 101/Oakland Road interchange is required to participate in the TDP program. The new TDP includes a fee schedule requiring all new developments to pay a "fair share" contribution for using a portion of the interchange capacity that would be created with buildout of the US 101/Oakland Road interchange and construction of a new US 101/Mabury Road interchange. Unlike most Area Development Policies that base their fees on the number of residential units or square footages built, the fee for the US 101/Oakland/ Mabury TDP is based on the number of PM peak hour vehicular trips that would be added to the US 101/Oakland Road interchange.

Since the proposed Challenger school expansion project would send some PM peak hour vehicle trips through the US 101/Oakland Road interchange, the project would be required to pay a fair share contribution toward the planned interchange improvements. Payment of the TDP traffic impact fee also would serve as mitigation for the project, since the project would result in significant impacts at the Oakland Road/US 101 North Ramps study intersection. The TDP traffic impact fee is $32,595.15 per each new PM peak hour vehicle trip that would be added to the US 101/Oakland Road interchange. The project would be required to pay the traffic impact fee prior to Public Works clearance.

Estimated US 101/Oakland/Mabury TDP Impact Fee: $32,595.15 x 19 PM peak hour trips = $619,307.85

Note that while the significant project impact would occur during the AM peak hour, the TDP traffic impact fee is based on PM peak hour project-generated trips. However, the planned interchange improvements also would address issues that occur during the AM peak hour of traffic.

Signal Warrant Analysis

A peak hour signal warrant check (*MUTCD 2012 Edition*, Part 4, Warrant 3) was performed for the unsignalized study intersection of I-880 North Ramps and Gish Road to determine whether signalization

would be justified on the basis of background plus project peak hour traffic volumes. The analysis revealed that the signal warrant would be satisfied at this intersection based on background plus project AM peak hour traffic volumes.

Freeway Segment Level of Service Analysis

The results of the freeway level of service analysis are summarized in Table ES-2. Traffic volumes on the study freeway segments under existing plus project conditions were estimated by adding project trips to the existing volumes obtained from the 2010 CMP Annual Monitoring Report. The results show that the project would not cause an increase in traffic volumes of more than one percent on any of the freeway segments. Therefore, the project would not have a significant impact on any of the study freeway segments.

Cumulative Intersection Level of Service Analysis

The results of the cumulative intersection level of service analysis show that, measured against the City of San Jose level of service impact criteria, the estimated cumulative project trips collectively would create a significant adverse traffic impact at the intersection of Oakland Road/Commercial Street during the AM peak hour. However, since the Challenger School project would contribute much less than 15 percent of the increase in total AM peak hour traffic volume at the Oakland Road/Commercial Street intersection, the project would not contribute a considerable amount of traffic to the cumulatively impacted intersection.

Other Transportation Issues

The project would not have an adverse effect on existing transit, bicycle or pedestrian facilities in the study area.

Table ES- 1
Intersection Level of Service Summary

Study Number	Intersection	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Existing + Project Avg. Delay	Existing + Project LOS	Existing + Project Incr. In Crit. Delay	Existing + Project Incr. In Crit. V/C	Background Avg. Delay	Background LOS	Background + Project Avg. Delay	Background + Project LOS	Background + Project Incr. In Crit. Delay	Background + Project Incr. In Crit. V/C	Cumulative No Project Avg. Delay	Cumulative No Project LOS	Cumulative With Project /a/ Avg. Delay	Cumulative With Project /a/ LOS	Cumulative With Project /a/ Incr. In Crit. Delay	Cumulative With Project /a/ Incr. In Crit. V/C
1	Oakland Rd and Berger Dr	AM	1/10/12	38.0	D	38.1	D	0.1	0.012	37.7	D	38.1	D	0.3	0.025	37.7	D	38.1	D	0.3	0.025
		PM	1/10/12	30.6	C	30.7	C	0.2	0.006	30.4	C	30.7	C	0.5	0.011	30.4	C	30.7	C	0.5	0.011
2	Oakland Rd and Gish Rd	AM	1/10/12	14.8	B	15.2	B	0.5	0.037	14.4	B	15.3	B	1.3	0.078	14.7	B	15.6	B	2.2	0.101
		PM	1/10/12	14.4	B	14.6	B	0.3	0.004	13.4	B	13.9	B	0.7	0.011	13.3	B	13.8	B	0.5	0.051
3	Oakland Rd and Commercial St	AM	1/10/12	88.3	F	88.9	F	1.2	0.003	138.9	F	140.6	F	3.2	0.007	160.9	F	**162.5**	**F**	**57.9**	**0.128**
		PM	1/10/12	35.2	D	35.2	D	0.0	0.001	45.9	D	46.0	D	0.1	0.002	44.2	D	44.3	D	-3.1	-0.006
4	Oakland Rd and US 101 North Ramps*	AM	10/7/10	65.0	E	66.1	E	1.8	0.005	201.0	F	**203.6**	**F**	**4.5**	**0.010**	52.4	D	53.9	D	-281.8	-0.649
		PM	10/7/10	21.8	C	21.8	C	0.1	0.002	69.7	E	70.5	E	1.3	0.003	30.6	C	30.9	C	-66.9	-0.169
5	Oakland Rd and US 101 South Ramps	AM	1/10/12	24.7	C	24.8	C	0.1	0.001	30.1	C	30.2	C	0.2	0.002	31.6	C	31.8	C	2.3	0.052
		PM	10/7/10	30.3	C	30.3	C	0.1	0.001	95.9	F	96.5	F	0.9	0.002	71.6	E	72.2	E	-58.0	-0.134
7	I-880 Ramps and Old Bayshore (East)	AM	1/10/12	34.1	C	34.2	C	0.1	0.004	36.0	D	36.4	D	0.6	0.010	38.3	D	39.1	D	3.5	0.076
		PM	1/10/12	22.2	C	22.2	C	0.0	0.000	25.3	C	25.4	C	0.2	0.001	27.9	C	28.0	C	3.3	0.027
8	I-880 Ramps and Old Bayshore (West)	AM	1/11/12	30.3	C	30.4	C	0.0	0.001	32.0	C	32.7	C	1.1	0.012	33.1	C	33.7	C	2.3	0.041
		PM	1/11/12	32.6	C	32.7	C	0.1	0.001	37.1	D	37.2	D	0.2	0.002	39.4	D	39.6	D	2.7	0.055

* Denotes CMP Intersection.
/a/ Cumulative + project conditions were compared against background conditions in order to determine significant cumulative impacts.
BOLD Denotes Significant Impact

Table ES- 2
Freeway Level of Service Summary

					Existing Plus Project Trips												Project Trips					
					Mixed-Flow						HOV Lane							Mixed-Flow		HOV Lane		
Freeway	Segment		Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Total Volume	Volume	% Capacity	Volume	% Capacity	Impact?
US 101	McKee Rd	to Oakland Rd	NB	AM	21	3	6,900	5,115	81.2	F	42	1	1,800	2,102	50.0	E	7	5	0.1%	2	0.1%	*NO*
				PM	66	3	6,900	5,152	26.0	D	70	1	1,800	700	10.0	A	2	2	0.0%	0	0.0%	*NO*
US 101	Oakland Rd	to I-880	NB	AM	15	3	6,900	4,321	96.0	F	34	1	1,800	2,010	59.1	F	1	1	0.0%	0	0.0%	*NO*
				PM	66	3	6,900	4,360	22.0	C	70	1	1,800	840	12.0	B	0	0	0.0%	0	0.0%	*NO*
US 101	I-880	to Old Bayshore Hwy	NB	AM	15	3	6,900	4,322	96.1	F	21	1	1,800	1,681	80.0	F	3	2	0.0%	1	0.0%	*NO*
				PM	66	3	6,900	3,770	19.0	C	70	1	1,800	560	8.0	A	0	0	0.0%	0	0.0%	*NO*
US 101	Old Bayshore Hwy	to N. First St	NB	AM	10	3	6,900	3,453	115.1	F	16	1	1,800	1,491	93.2	F	4	3	0.0%	1	0.0%	*NO*
				PM	66	3	6,900	4,160	21.0	C	70	1	1,800	700	10.0	A	0	0	0.0%	0	0.0%	*NO*
US 101	Oakland Rd	to McKee Rd	SB	AM	66	3	6,900	3,773	19.1	C	67	1	1,800	211	3.1	A	4	3	0.0%	1	0.0%	*NO*
				PM	27	3	6,900	5,513	68.1	F	70	1	1,800	2,381	34.0	D	4	3	0.0%	1	0.0%	*NO*
US 101	I-880	to Oakland Rd	SB	AM	66.5	3	6,900	2,801	14.0	B	67	1	1,800	340	5.1	A	1	1	0.0%	0	0.0%	*NO*
				PM	6	3	6,900	2,511	139.5	F	40	1	1,800	2,360	59.0	F	1	1	0.0%	0	0.0%	*NO*
US 101	Old Bayshore Hwy	to I-880	SB	AM	66.5	3	6,900	3,201	16.0	B	67	1	1,800	270	4.0	A	1	1	0.0%	0	0.0%	*NO*
				PM	12	3	6,900	3,932	109.2	F	70	1	1,800	2,380	34.0	D	2	2	0.0%	0	0.0%	*NO*
US 101	N. First St	to Old Bayshore Hwy	SB	AM	66	3	6,900	3,771	19.0	C	67	1	1,800	410	6.1	A	1	1	0.0%	0	0.0%	*NO*
				PM	10	3	6,900	3,512	117.1	F	70	1	1,800	2,520	36.0	D	2	2	0.0%	0	0.0%	*NO*
I-880	N. 1st ST	to US 101	NB	AM	21	3	6,900	5,112	81.1	F	--	--	--	--	--	--	2	2	0.0%	0	--	*NO*
				PM	47	3	6,900	6,492	46.0	E	--	--	--	--	--	--	2	2	0.0%	0	--	*NO*
I-880	US 101	to E. Brokaw Rd	NB	AM	30	3	6,900	5,762	64.0	F	--	--	--	--	--	--	2	2	0.0%	0	--	*NO*
				PM	34	3	6,900	6,022	59.0	F	--	--	--	--	--	--	2	2	0.0%	0	--	*NO*
I-880	US 101	to N. 1st ST	SB	AM	35	3	6,900	6,093	58.0	F	--	--	--	--	--	--	4	3	0.0%	1	--	*NO*
				PM	16	3	6,900	4,521	94.2	F	--	--	--	--	--	--	1	1	0.0%	0	--	*NO*
I-880	E. Brokaw Rd	to US 101	SB	AM	63	3	6,900	6,438	34.1	D	--	--	--	--	--	--	10	8	0.1%	2	--	*NO*
				PM	18	3	6,900	4,702	87.1	F	--	--	--	--	--	--	2	2	0.0%	0	--	*NO*

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2010.
Bold indicates a significant project impact.

1. Introduction

This report presents the results of the traffic impact analysis conducted for the proposed Challenger School expansion located at 711 East Gish Road in San Jose, California. The proposed expansion of the existing school consists of the demolition of 4 existing buildings totaling 13,775 square feet (s.f.) and the addition of 8 portables for an increase of 3 classrooms. The expansion will provide for an allowed increase in student enrollment of 160 students. The school has a permitted size of 775 students, although 859 students currently are enrolled. The project would increase Challenger School's permitted size to 935 students.

Primary access to the project would remain as existing via Gish Road with one inbound driveway located at the eastern end of the project site and one outbound driveway located toward the western end of the project site. In addition, faculty and staff take access to the project site via an inbound/outbound driveway located west of the outbound only driveway. The project site location and the surrounding study area are shown on Figure 1.

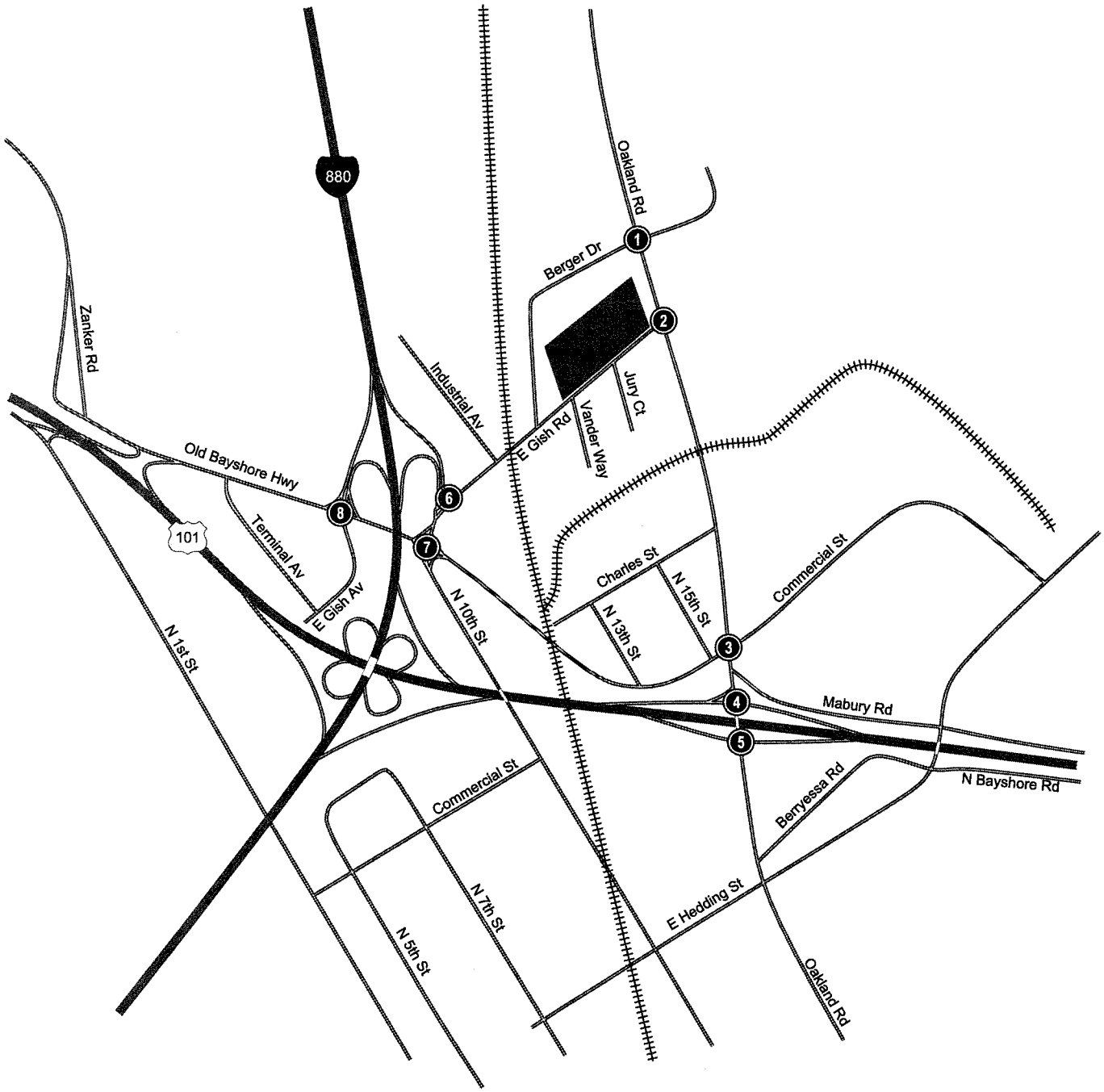
Scope of Study

This study was conducted for the purpose of identifying potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of San Jose. Since the project would generate more than 100 peak hour vehicle trips, an analysis in accordance with the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP) guidelines also was prepared. The study determined the traffic impacts of the proposed school expansion on seven signalized intersections, one unsignalized intersection, and six freeway segments in the vicinity of the project site during the weekday AM and PM peak periods of traffic.

Based on the existing trip distribution pattern of Challenger School, the number of new trips that would be added to the freeways near the school is expected to be relatively insignificant as a result of the proposed school expansion. However, due to the proximity of US 101 and I-880 to the project site, the freeways were evaluated for project impacts.

Study Intersections

1. Oakland Road and Berger Drive
2. Oakland Road and Gish Road
3. Oakland Road and Commercial Street
4. Oakland Road and US 101 North Ramps (CMP)
5. Oakland Road and US 101 South Ramps (CMP)
6. I-880 North Ramps and Gish Road (unsignalized)
7. I-880 Ramps and Old Bayshore (East)
8. I-880 Ramps and Old Bayshore (West)



LEGEND

= Project Site Location

X = Study Intersection

Figure 1

Site Location and Study Intersections

Study Freeway Segments

1. US 101, between McKee Road and N. First Street (4 segments)
2. I-880, between N. First Street and Brokaw Road (2 segments)

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour of adjacent street traffic is generally between 7:00 and 9:00 AM, which also coincides with the AM peak hour for school traffic. The PM peak hour of adjacent street traffic is typically between 4:00 and 6:00 PM, while the PM peak hour for schools occurs prior to this time period (between 2:00 and 4:00 PM). Since the most congested traffic conditions typically occur during the PM peak hour of adjacent street traffic on an average weekday, the 4:00 to 6:00 PM time period was analyzed for traffic conditions in order to present a worst-case traffic condition.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing AM and PM peak hour traffic volumes were obtained from the City of San Jose and supplemented with new 2012 manual turning-movement counts if the available counts were more than approximately two years old.

Scenario 2: *Existing Plus Project Conditions.* Existing plus project peak hour traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.

Scenario 3: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments. The added traffic from approved but not yet completed developments was provided by the City of San Jose in the form of the Approved Trips Inventory (ATI). Trips from the 84 students in excess of the permitted capacity were subtracted under background conditions.

Scenario 4: *Background Plus Project Conditions.* Projected near-term peak hour traffic volumes with the project were estimated by adding to background traffic volumes the additional traffic generated by the project (160 students). Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts according to the City of San Jose Level of Service (LOS) Policy. The City of San Jose LOS Policy is the adopted established threshold for California Environmental Quality Act (CEQA).

Scenario 5: Cumulative *Conditions.* Cumulative traffic conditions were represented by background traffic volumes, with the proposed project, plus traffic generated by pending developments on the near-term future roadway network. This scenario was evaluated in order to fulfill the California Environmental Quality Act (CEQA) requirements.

Methodology

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

Data Requirements

The data required for the analysis were obtained from new traffic counts, the City of San Jose, the CMP Annual Monitoring Report and field observations. The following data were collected from these sources:

- existing traffic volumes
- approved project trips

- intersection lane configurations
- signal timing and phasing
- freeway segment speed and volume data

Analysis Methodologies and Level of Service Standards

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

City of San Jose Signalized Intersections

The City of San Jose level of service methodology for signalized intersections is the 2000 *Highway Capacity Manual* (HCM) method. This method is applied using the TRAFFIX software. The 2000 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose level of service standard for signalized intersections is LOS D or better. The correlation between average control delay and level of service is shown in Table 1.

Table 1
Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.

CMP Intersections

The designated level of service methodology for the CMP also is the 2000 HCM operations method for signalized intersections, using TRAFFIX. The only difference in level of service standards is that in the City of San Jose the standard is LOS D or better, and the CMP level of service standard for signalized intersections is LOS E or better.

Unsignalized Intersections

One of the study intersections is unsignalized: 880 North Ramps and Gish Road. The need for signalization of unsignalized intersections is assessed based on the Peak Hour Volume Warrant (Warrant 3) described in the *Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)*, Part 4, Highway Traffic Signals, 2012. This method makes no evaluation of intersection level of service, but simply provides an indication whether vehicular peak hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Additional analysis may include an evaluation of vehicle queuing and delay at the unsignalized intersection. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions.

Intersection Operations

The operations analysis is based on vehicle queuing for high-demand turning-movements at intersections. Vehicle queues are estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = Avg. # of vehicles in queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future left-turn storage requirements at signalized intersections.

The 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the "design queue length."

Freeway Segments

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

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

where:

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

The vehicle density on a freeway segment is correlated to level of service as shown in Table 2. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for mixed-flow lane segments

that are three lanes or wider in one direction, and a capacity of 2,200 vphpl be used for mixed-flow lane segments that are two lanes wide in one direction. A capacity of 1,800 vphpl was used for high occupancy vehicle (HOV) lanes. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 2
Freeway Level of Service Definitions Based on Density

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	11.0 or less
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	11.1 to 18.0
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	18.1 to 26.0
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	26.1 to 46.0
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	46.1 to 58.0
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	greater than 58.0

Source: Santa Clara County 2004 CMP (Based on the *Highway Capacity Manual* (2000), Washington, D.C.).

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis, the criteria used to determine significant impacts on signalized intersections are based on City of San Jose Level of Service standards. The City of San Jose LOS Policy is the adopted established threshold for CEQA. Project impacts also were analyzed according to the County Congestion Management Program (CMP) methodology for the CMP study intersection and study freeway segments.

City of San Jose Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in the City of San Jose if for either peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under background plus project conditions, or
2. The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds *and* the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

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

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

CMP Definition of Significant Intersection Impacts

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

CMP Definition of Significant Freeway Segment Impacts

The CMP defines an acceptable level of service for freeway segments as LOS E or better. A project is said to create a significant impact on traffic conditions on a freeway segment if for either peak hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F with the addition of project trips, or
2. The level of service on the freeway segment is already operating at LOS and the number of project trips on that segment constitutes at least one percent of capacity on that segment.

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

Report Organization

The remainder of this report is divided into seven chapters. Chapter 2 describes existing conditions including the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the intersection operations under existing plus project conditions and describes the method used to estimate project traffic. Chapter 4 presents the intersection operations under background conditions. Chapter 5 presents the intersection operations under background plus project conditions. Chapter 6 describes non-level of service operational issues associated with the proposed project. Chapter 7 presents the intersection operations under cumulative traffic conditions. Chapter 8 presents the conclusions of the traffic impact analysis.

2. Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities. Also included are the existing levels of service of the key intersections in the study area.

Existing Roadway Network

Regional access to the project site is provided by US 101 and I-880. Local access to the project site is provided via Oakland Road, Gish Road, Old Bayshore Highway, N 10th Street, and Berger Drive. These facilities are described below.

US 101 is a north-south freeway that extends through and beyond the Bay Area, connecting San Francisco to San Jose. US 101 is eight lanes wide (three mixed-flow lanes and one HOV lane in each direction) in the vicinity of the project site. US 101 provides site access via a full interchange at Oakland Road.

I-880 is a north-south freeway that extends from San Jose in the south to Oakland in the north. I-880 is six lanes wide with three mixed-flow lanes in each direction in the project vicinity. Access to the project study area is provided via its interchanges with Old Bayshore Highway, Brokaw Road, and US 101.

Oakland Road is a north-south arterial that begins at Hedding Street in the south as a transition from North Thirteenth Street, and continues to Montague Expressway where it becomes South Main Street in the north. North of US 101, Oakland Road is primarily a two lane roadway with a two-way center left-turn lane. South of US 101, Oakland Road is a four lane arterial until its intersection with Hedding Street, where it becomes a two lane roadway. Oakland Road has a full interchange with US 101. Oakland Road provides access to the project site via Gish Road.

Gish Road is an east-west two lane road that extends from Oakland Road in the east to the I-880 NB ramps. Gish Road provides direct access to the existing Challenger school via one inbound driveway, one outbound driveway, and one full access driveway. Gish Road

Old Bayshore Highway is a major collector that runs in the east-west direction. North of US 101, Old Bayshore Highway is approximately one mile long and has two lanes of traffic in each direction between the US 101 northbound ramps and North Thirteenth Street. East of North Thirteenth Street, this roadway transitions into Commercial Street, a two-lane facility that extends to Berryessa Road. Old Bayshore Highway provides site access via Oakland Road and Gish Road.

North Tenth Street is a one-way, three-lane southbound street between Hedding Street and Keyes Street. North of Hedding Street, North Tenth Street becomes a two-way four-lane arterial up to its termination point at I-880. Similarly, south of Keyes Street the roadway becomes a two-way four-lane roadway to its

termination point at Tully Road. North Tenth Street provides access to the project site via its intersection with Old Bayshore Highway.

Berger Drive is a two-lane roadway that extends east from Oakland Road and turns south where it terminates at Gish Road. Most of Berger Drive contains a two-way left turn lane and provides access to commercial sites. Berger Drive provides access to and from the site via Gish Road.

Existing Bicycle and Pedestrian Facilities

Within the project study area, Class II bicycle facilities (striped bike lanes) are provided along the following roadway segments:

- Oakland Road north of Commercial Street
- Berger Drive
- North Tenth Street
- Old Bayshore Highway between North Tenth Street and Zanker Road
- Zanker Road north of Old Bayshore Highway
- Commercial Street between North First Street and North Tenth Street
- North Seventh Street south of Commercial Street
- Hedding Street east of North Seventeenth Street
- North Seventeenth Street south of Hedding Street

The existing bicycle facilities within the study area are shown on Figure 2.

Pedestrian facilities in the project study area consist primarily of sidewalks, which are found along virtually all previously described roadways in the study area. There are sidewalks on the north side of Gish Road along the project site frontage. Although the network of sidewalks in the study area is extensive, there are short segments of roadway near the project site that do not have sidewalks. Sidewalks do not exist along much of the south side of Gish Road west of Challenger School, as well as the north-south oriented segment of Berger drive.

Existing Transit Services

Existing transit service to the study area is provided by the Santa Clara Valley Transportation Authority (VTA). Only local bus route 66 provides service within walking distance of the project site and is described below. The VTA bus service within the study area is shown on Figure 3.

Local Route 66

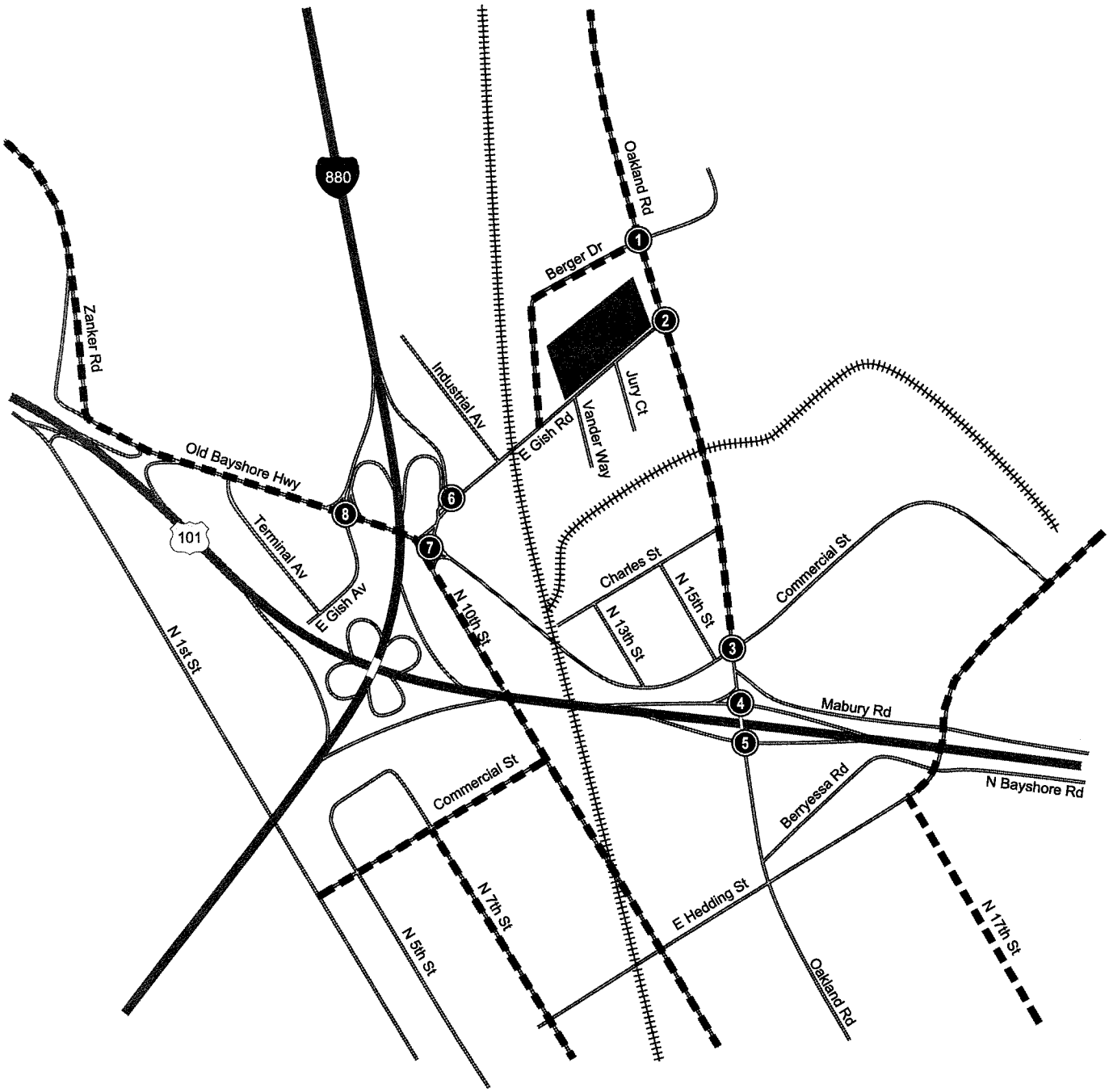
Local Route 66 provides service between Kaiser Hospital in San Jose and the City of Milpitas. Route 66 operates along Oakland Road, with 15-minute headways during weekdays from approximately 5:00 AM to 12:00 AM in the vicinity of the project. Bus stops for this line in both the northbound and southbound directions are located on Oakland Road just south of Gish Road.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were confirmed by observations in the field and are shown on Figure 4.

Existing Traffic Volumes

Existing AM and PM peak hour traffic volumes were obtained from the City of San Jose and supplemented with new 2012 manual turning-movement counts if the available counts were more than approximately two years old. The existing peak hour intersection volumes are shown on Figure 5. New intersection count data are contained in Appendix A.



LEGEND

= Project Site Location

= Study Intersection

= Bike Lane

Figure 2
Existing Bicycle Facilities

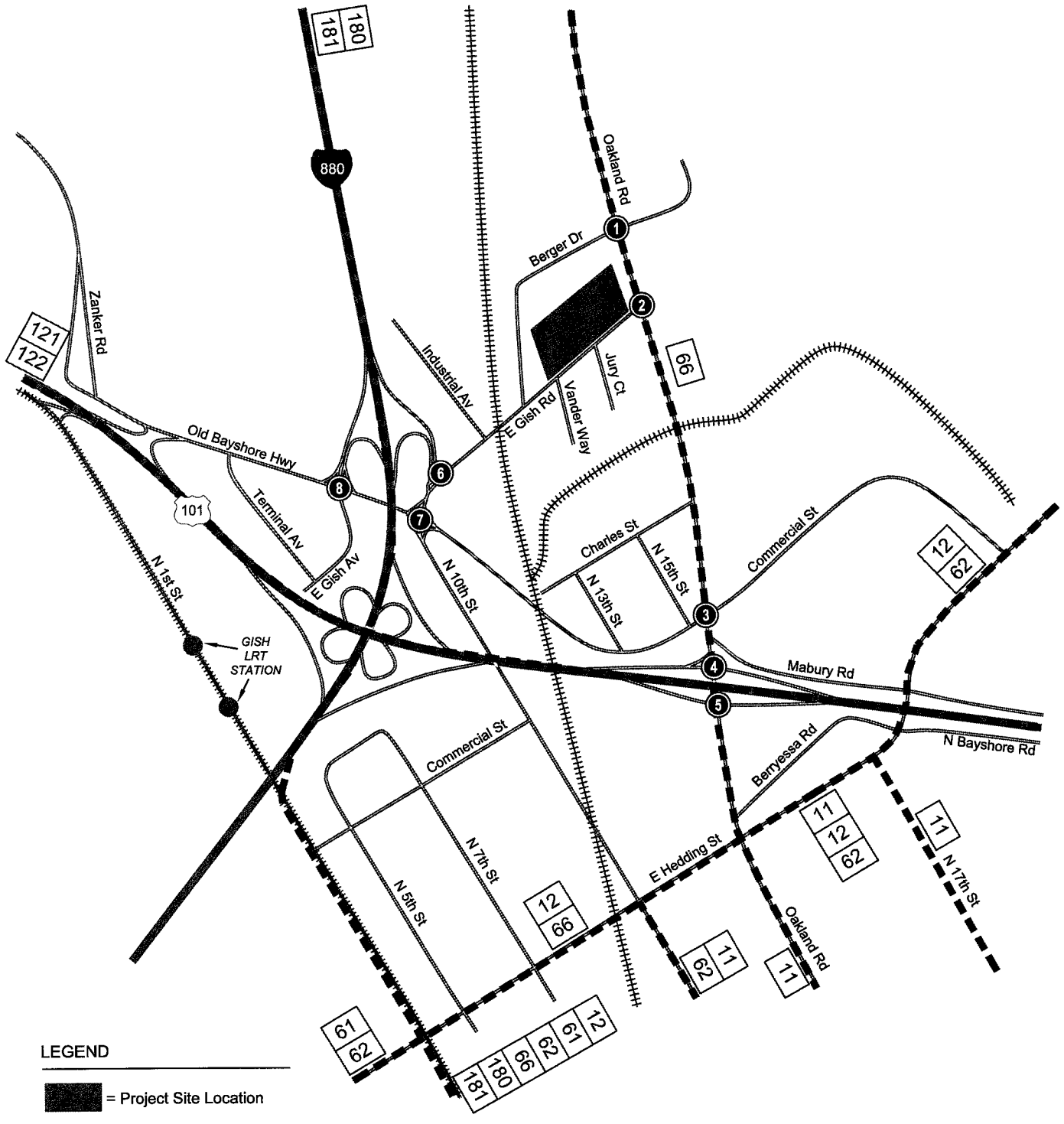
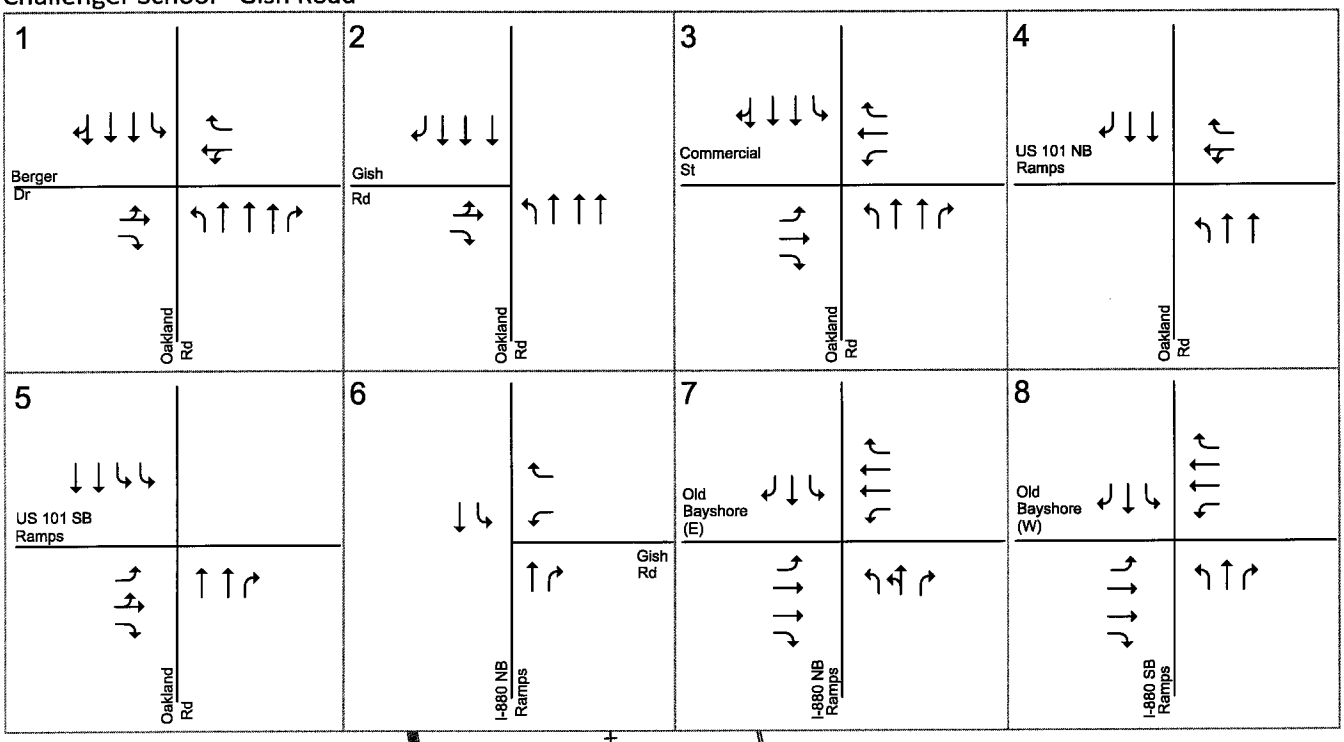


Figure 3
Existing Transit Services

Challenger School - Gish Road



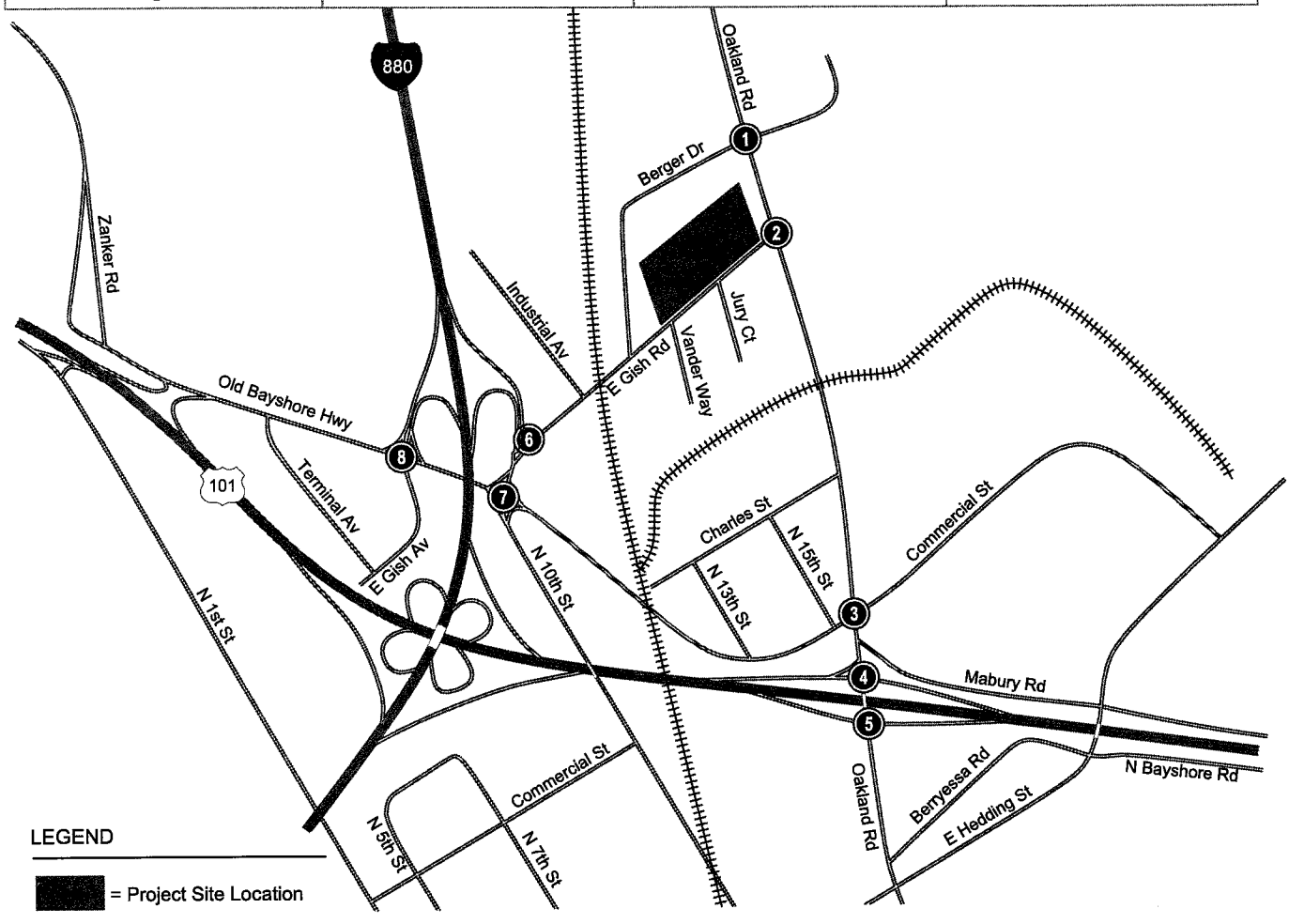
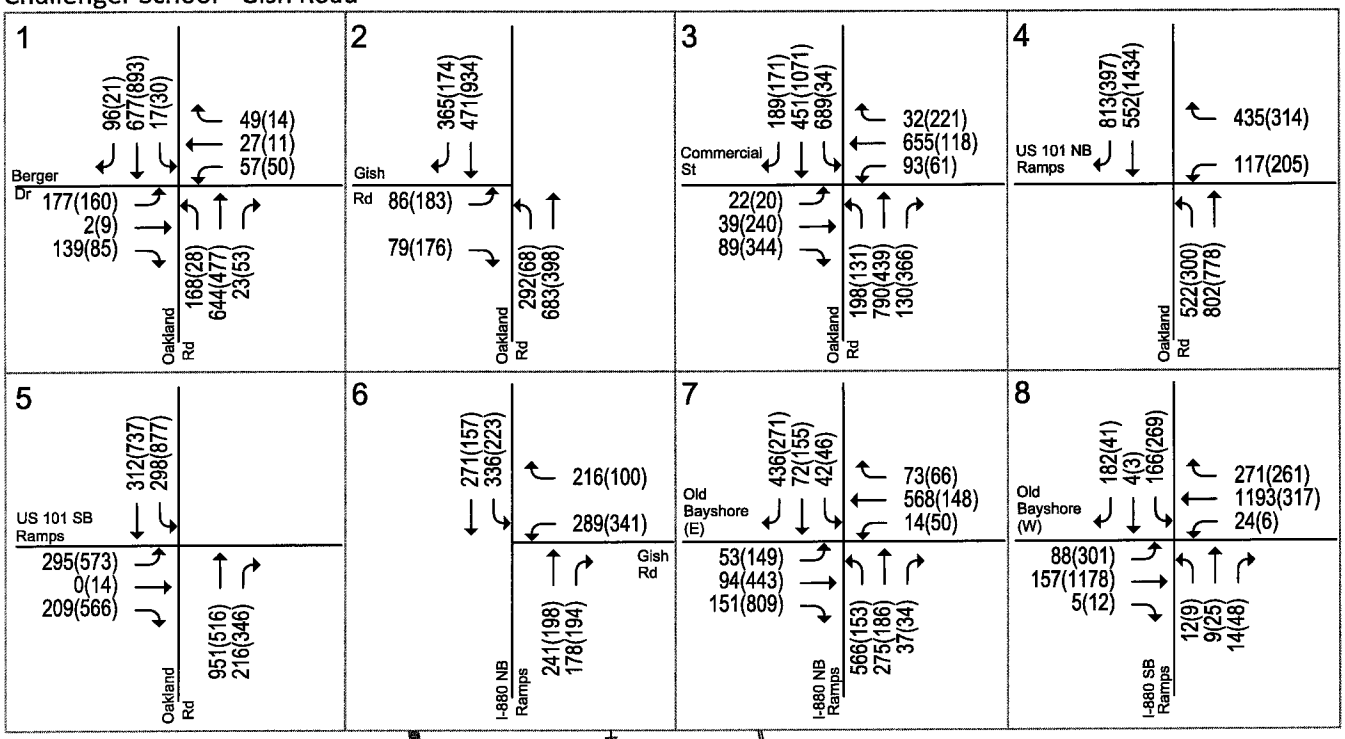
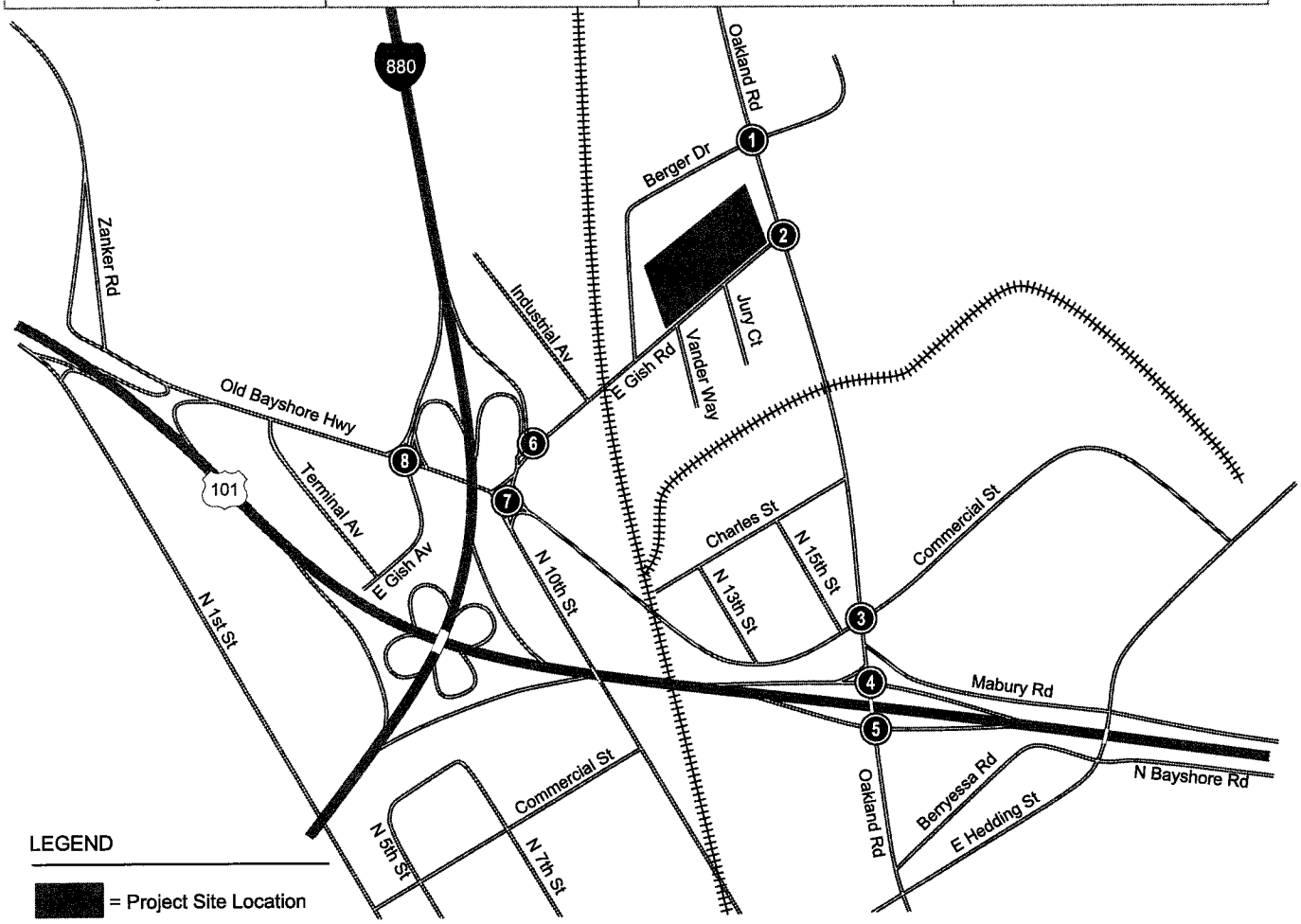


Figure 4
Existing Lane Configurations

Challenger School - Gish Road





LEGEND

= Project Site Location

(X) = Study Intersection

XX(XX) = AM(PM) Peak Hour Volumes

Figure 5
Existing Traffic Volumes

Existing Intersection Levels of Service

Intersection levels of service were evaluated against City of San Jose and CMP standards. The results of the intersection level of service analysis under existing conditions are summarized in Table 3.

Table 3
Existing Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS
1	Oakland Rd and Berger Dr	AM	1/10/12	38.0	D
		PM	1/10/12	30.6	C
2	Oakland Rd and Gish Rd	AM	1/10/12	14.8	B
		PM	1/10/12	14.4	B
3	Oakland Rd and Commercial St	AM	1/10/12	88.3	F
		PM	1/10/12	35.2	D
4	Oakland Rd and US 101 North Ramps*	AM	10/7/10	65.0	E
		PM	10/7/10	21.8	C
5	Oakland Rd and US 101 South Ramps*	AM	1/10/12	24.7	C
		PM	10/7/10	30.3	C
7	I-880 Ramps and Old Bayshore (East)	AM	1/10/12	34.1	C
		PM	1/10/12	22.2	C
8	I-880 Ramps and Old Bayshore (West)	AM	1/11/12	30.3	C
		PM	1/11/12	32.6	C

* Denotes CMP Intersection.

City of San Jose Intersection Analysis

The results of the intersection level of service analysis show that, measured against the City of San Jose level of service standards, two signalized study intersections currently operate at an unacceptable LOS E or F during the AM peak hour as indicated below:

Oakland Road and Commercial Street (LOS F)
Oakland Road and US 101 North Ramps (LOS E)

The remaining signalized study intersections currently operate at acceptable levels of service (LOS D or better) during both the AM and PM peak hours of traffic, according to City of San Jose standards.

CMP Intersection Analysis

The results of the intersection level of service analysis show that, measured against CMP standards, the two CMP intersections currently operate at an acceptable LOS E or better during the AM and PM peak hours.

The intersection level of service calculation sheets are included in Appendix D.

Existing Freeway Levels of Service

Traffic volumes for the study freeway segments were obtained from the 2010 CMP Annual Monitoring Report, which contains the most recent data collected for freeway segments located in Santa Clara

County. The results of the analysis are summarized in Table 4. The results show that the following directional freeway segments currently operate at an unacceptable LOS F:

- US 101, northbound between McKee Rd and Oakland Rd – AM peak hour
- US 101, northbound between Oakland Rd and I-880 – AM peak hour
- US 101, northbound between I-880 and Old Bayshore Hwy – AM peak hour
- US 101, northbound between Old Bayshore Hwy and N. First St – AM peak hour
- US 101, southbound between McKee Rd and Oakland Rd – PM peak hour
- US 101, southbound between Oakland Rd and I-880 – PM peak hour
- US 101, southbound between I-880 and Old Bayshore Hwy – PM peak hour
- US 101, southbound between Old Bayshore Hwy and N. First St – PM peak hour
- I-880, northbound between N. 1st St. and US 101 – AM peak hour
- I-880, northbound between US 101 and E. Brokaw Rd – AM and PM peak hours
- I-880, southbound between N. 1st St. and US 101 – PM peak hour
- I-880, southbound between US 101 and E. Brokaw Rd – PM peak hour

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the LOS calculation does not accurately reflect level of service in the field.

Overall, the calculated intersection levels of service appear to accurately reflect actual existing traffic conditions. Field observations showed that some operational problems currently occur at the following locations near the project site:

I-880 Southbound Ramps and Old Bayshore Highway

During the PM peak hour, the eastbound left-turn vehicle queues on Bayshore Highway consistently overflow and block the inside through lane. When this occurs, it takes two signal cycles for the vehicle queues to clear the intersection.

I-880 Northbound Ramps and Old Bayshore Highway

During the PM peak hour, the eastbound left-turn vehicle queues on Bayshore Highway occasionally spill out of the turn pocket and impede the eastbound through movement. However, the entire left-turn vehicle queues clear the intersection in one signal cycle.

I-880 Northbound Ramps and Gish Road

During the AM peak hour, the westbound left-turn vehicle queues on Gish Road spill back to Industrial Avenue (total queue of approximately 12 to 15) due to the stop control. Although this does cause some delay for westbound vehicles, it does not result in any operations issues.

Oakland Road and Gish Road

During the AM peak hour, the northbound left-turn vehicle queues on Oakland Road occasionally spill out of the turn pocket and block the inside northbound through lane. However, this was not an issue since the northbound through movement volume on Oakland Road is relatively low. All of the vehicles in the northbound left-turn vehicle queues typically clear the intersection in one signal cycle.

Oakland Road and Commercial Street

During the AM peak hour, the queues for the westbound left turn on Commercial Street routinely spill out of the turn pocket and blocks the through lane. However, the queues typically clear in one signal cycle.

During the PM peak hour, the queues for the westbound left turn on Commercial Street routinely spill out of the turn pocket and blocks the through lane. These queues typically require two signal cycles to clear

the intersection. Eastbound vehicle queues on Commercial Street backed up all the way to 13th Street due to the heavy right-turn movement to get to US 101.

US 101 Northbound Ramps and Oakland Road

During the AM and PM peak hours, heavy queuing was observed for most movements at the intersection. During the PM peak hour, the vehicle queues for the northbound left turn movement from Oakland Road to northbound US 101 occasionally spill out of the turn pocket and block the through lane. However, the queues typically clear in one signal cycle.

US 101 Southbound Ramps and Oakland Road

During the AM peak hour, heavy queuing was observed for most movements at the intersection. However, the queues typically clear in one signal cycle.

During the PM peak hour, the vehicle queues for the southbound left turn movement from Oakland Road to southbound US 101 occasionally spill out of the turn pocket and cause vehicles to back up to Commercial Street. When this occurs, it often takes two signal cycles for the queues to clear.

Table 4
Existing Freeway Levels of Service

						Mixed-Flow Lanes					HOV Lane Traffic Volume				
Freeway	Segment			Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Volume/a/	Density	LOS	Avg. Speed/a/	# of Lanes	Volume/a/	Density	LOS
US 101	McKee Rd	to	Oakland Rd	NB	AM	21	3	5,110	81.1	F	42	1	2,100	50.0	E
					PM	66	3	5,150	26.0	D	70	1	700	10.0	A
US 101	Oakland Rd	to	I-880	NB	AM	15	3	4,320	96.0	F	34	1	2,010	59.1	F
					PM	66	3	4,360	22.0	C	70	1	840	12.0	B
US 101	I-880	to	Old Bayshore Hwy	NB	AM	15	3	4,320	96.0	F	21	1	1,680	80.0	F
					PM	66	3	3,770	19.0	C	70	1	560	8.0	A
US 101	Old Bayshore Hwy	to	N. First St	NB	AM	10	3	3,450	115.0	F	16	1	1,490	93.1	F
					PM	66	3	4,160	21.0	C	70	1	700	10.0	A
US 101	Oakland Rd	to	McKee Rd	SB	AM	66	3	3,770	19.0	C	67	1	210	3.1	A
					PM	27	3	5,510	68.0	F	70	1	2,380	34.0	D
US 101	I-880	to	Oakland Rd	SB	AM	66.5	3	2,800	14.0	B	67	1	340	5.1	A
					PM	6	3	2,510	139.4	F	40	1	2,360	59.0	F
US 101	Old Bayshore Hwy	to	I-880	SB	AM	66.5	3	3,200	16.0	B	67	1	270	4.0	A
					PM	12	3	3,930	109.2	F	70	1	2,380	34.0	D
US 101	N. First St	to	Old Bayshore Hwy	SB	AM	66	3	3,770	19.0	C	67	1	410	6.1	A
					PM	10	3	3,510	117.0	F	70	1	2,520	36.0	D
I-880	N. 1st ST	to	US 101	NB	AM	21	3	5,110	81.1	F	–	–	–	–	–
					PM	47	3	6,490	46.0	E	–	–	–	–	–
I-880	US 101	to	E. Brokaw Rd	NB	AM	30	3	5,760	64.0	F	–	–	–	–	–
					PM	34	3	6,020	59.0	F	–	–	–	–	–
I-880	US 101	to	N. 1st ST	SB	AM	35	3	6,090	58.0	E	–	–	–	–	–
					PM	16	3	4,520	94.2	F	–	–	–	–	–
I-880	E. Brokaw Rd	to	US 101	SB	AM	63	3	6,430	34.0	D	–	–	–	–	–
					PM	18	3	4,700	87.0	F	–	–	–	–	–

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2010.

3.
Existing Plus Project Conditions

This chapter describes existing plus project traffic conditions, including the method by which project traffic is estimated. Existing plus project traffic conditions could potentially exist if the project was constructed and occupied prior to the other approved projects in the area. It is unlikely that this traffic condition would occur, since other approved projects expected to add traffic to the study area would likely be built and occupied during the time the project is going through the development review and construction process. This scenario, therefore, describes a less congested traffic condition, since it ignores any potential traffic from prior approvals. Existing plus project conditions also does not include any planned and funded roadway improvements that have not yet been constructed.

Project Description

The project consists of the proposed expansion of the existing Challenger School on Gish Road and includes the demolition of 4 existing buildings and the addition of 8 portables for an increase of 3 classrooms. The additional classrooms will increase the student enrollment to 935 students; an increase of 76 students over the current enrollment of 859 students, and an increase of 160 students over the current approved enrollment of 775 students. Existing plus project conditions measures the impact of the additional 76 students against the existing condition, which is the current enrollment of 859 students.

Transportation Network Under Existing Plus Project Conditions

It is assumed in this analysis that the transportation network under existing plus project conditions would be the same as the existing transportation network.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets. These procedures are described further in the following sections.

Trip Generation

The AM and PM peak hour trips generated by the proposed Challenger School expansion were calculated based on existing driveway counts. The driveways were counted on Wednesday, October 26th 2011. Based on the driveway counts, the existing 859-student school is generating trips at a rate of 1.17 trips per student during the AM peak hour and 0.50 trips per student during the PM peak hour. These rates were applied to the proposed increase in student enrollment.

An increase in student enrollment of 76 students is expected to generate 47 inbound and 42 outbound trips during the AM peak hour, and 17 inbound and 21 outbound trips during the PM peak hour (see Table 5 below).

Table 5
Trip Generation Estimates for 76 Students

		AM Peak Hour				PM Peak Hour			
Land Use	Size	Rate	In	Out	Total	Rate	In	Out	Total
Challenger School	76 students	1.17	47	42	89	0.50	17	21	38

Trip Distribution Pattern and Trip Assignment

The trip distribution pattern for the project was determined based on the existing travel patterns to and from the school. School route survey forms were distributed to parents/caregivers of all students currently enrolled at Challenger School. The forms, which included maps, requested that each parent/caregiver trace the path they currently drive to and from the school. The AM and PM peak hour trips generated by the proposed project were assigned to the roadway system in accordance with the trip distribution pattern that was developed based on the survey data. The project trip distribution pattern is shown graphically on Figure 6. Figure 7 shows the vehicle trip assignment for 76 students.

Existing Plus Project Traffic Volumes

The project trips were added to existing traffic volumes to obtain existing plus project traffic volumes. The existing plus project traffic volumes at the study intersections are shown graphically on Figure 8. Traffic volumes for all components of traffic are tabulated in Appendix C.

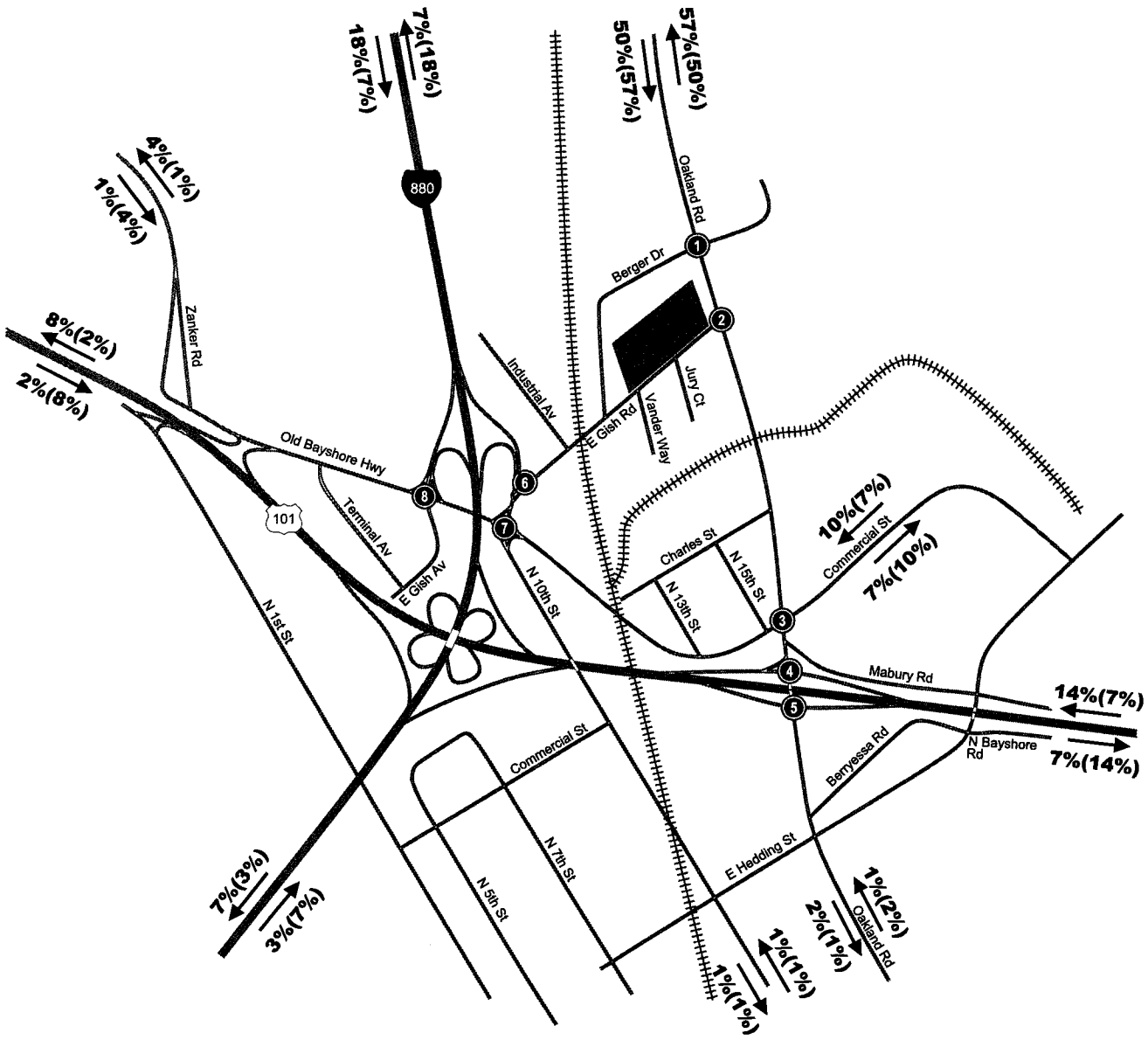
Existing Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis under existing plus project conditions are summarized in Table 6.

Table 6
Existing Plus Project Intersection Levels of Service

				Existing		Existing + Project			
Study Number	Intersection	Peak Hour	Count Date	Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Oakland Rd and Berger Dr	AM	1/10/12	38.0	D	38.1	D	0.1	0.012
		PM	1/10/12	30.6	C	30.7	C	0.2	0.006
2	Oakland Rd and Gish Rd	AM	1/10/12	14.8	B	15.2	B	0.5	0.037
		PM	1/10/12	14.4	B	14.6	B	0.3	0.004
3	Oakland Rd and Commercial St	AM	1/10/12	88.3	F	88.9	F	1.2	0.003
		PM	1/10/12	35.2	D	35.2	D	0.0	0.001
4	Oakland Rd and US 101 North Ramps*	AM	10/7/10	65.0	E	66.1	E	1.8	0.005
		PM	10/7/10	21.8	C	21.8	C	0.1	0.002
5	Oakland Rd and US 101 South Ramps*	AM	1/10/12	24.7	C	24.8	C	0.1	0.001
		PM	10/7/10	30.3	C	30.3	C	0.1	0.001
7	I-880 Ramps and Old Bayshore (East)	AM	1/10/12	34.1	C	34.2	C	0.1	0.004
		PM	1/10/12	22.2	C	22.2	C	0.0	0.000
8	I-880 Ramps and Old Bayshore (West)	AM	1/11/12	30.3	C	30.4	C	0.0	0.001
		PM	1/11/12	32.6	C	32.7	C	0.1	0.001

* Denotes CMP Intersection.



LEGEND

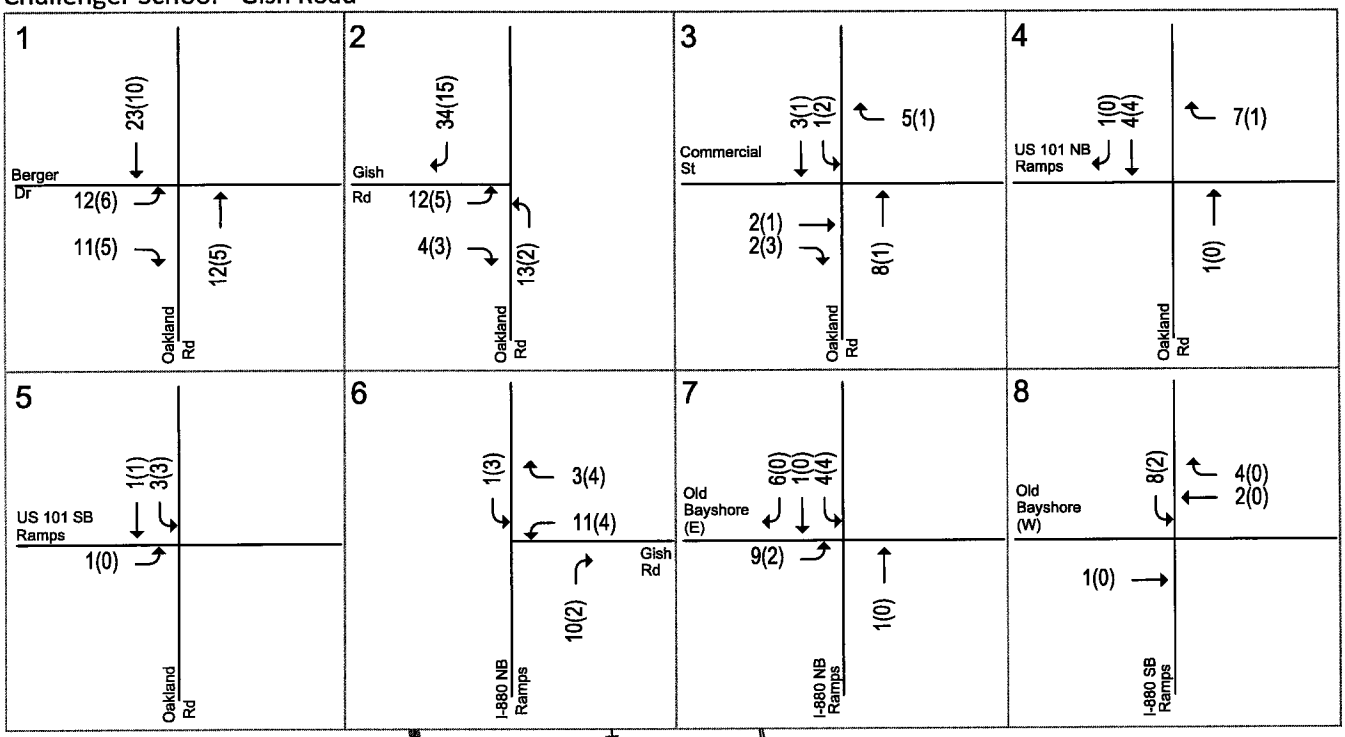
= Project Site Location

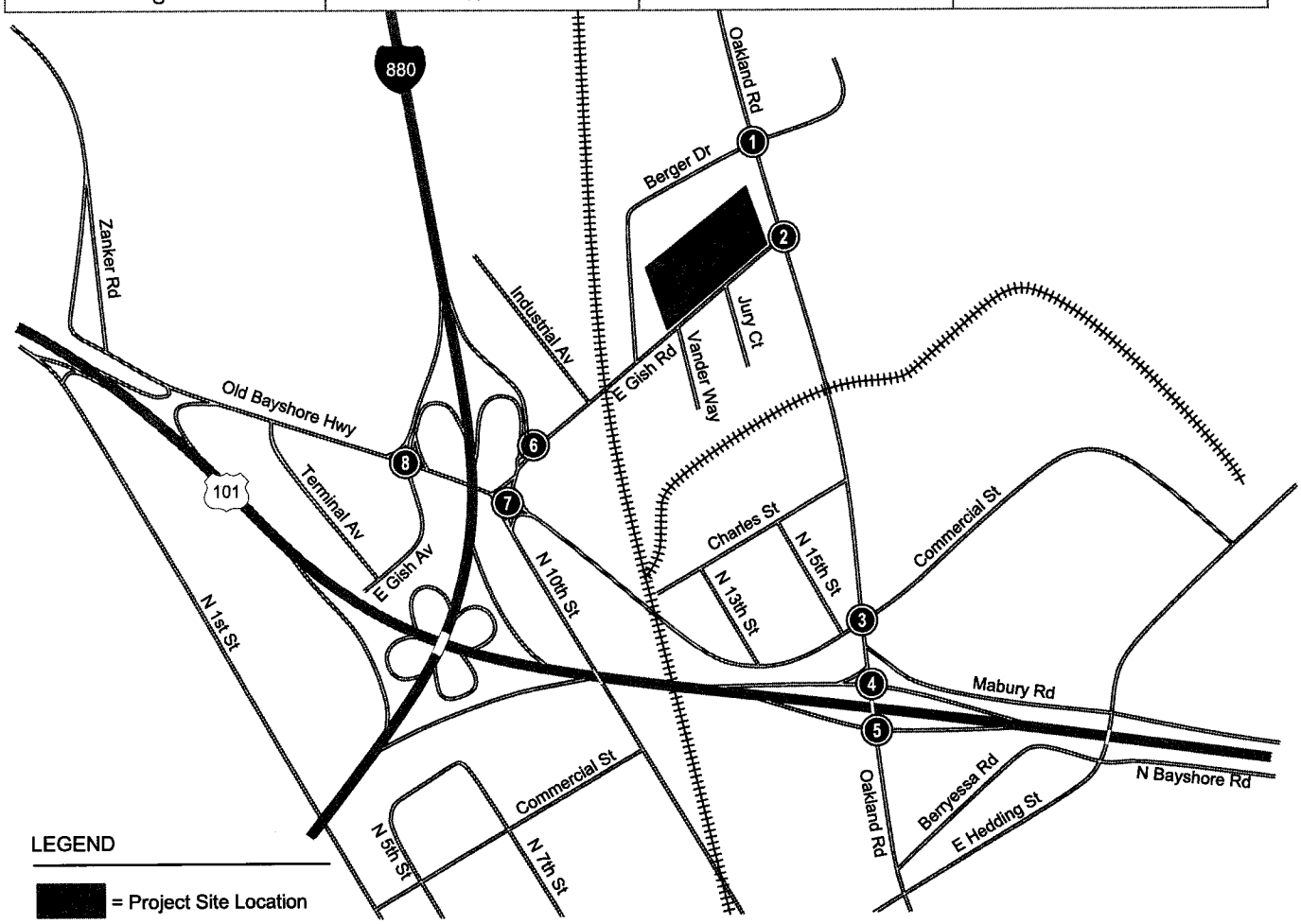
= Study Intersection

XX(XX) = AM(PM)

Figure 6
Project Trip Distribution Pattern

Challenger School - Gish Road





LEGEND

= Project Site Location

(X) = Study Intersection

XX(XX) = AM(PM) Peak Hour Volumes

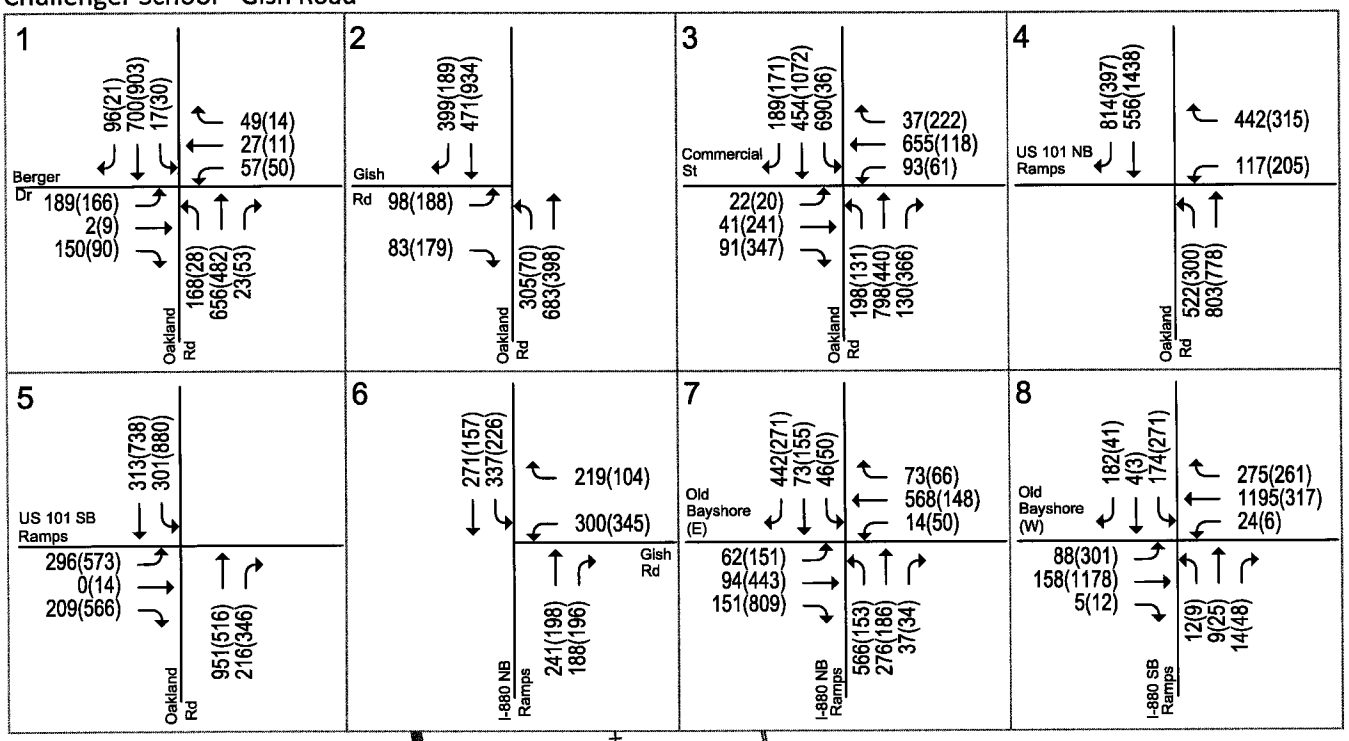
Figure 7

Project Trip Assignment - 76 Students

Hexagon Transportation Consultants, Inc.

NORTH
Not to Scale

Challenger School - Gish Road



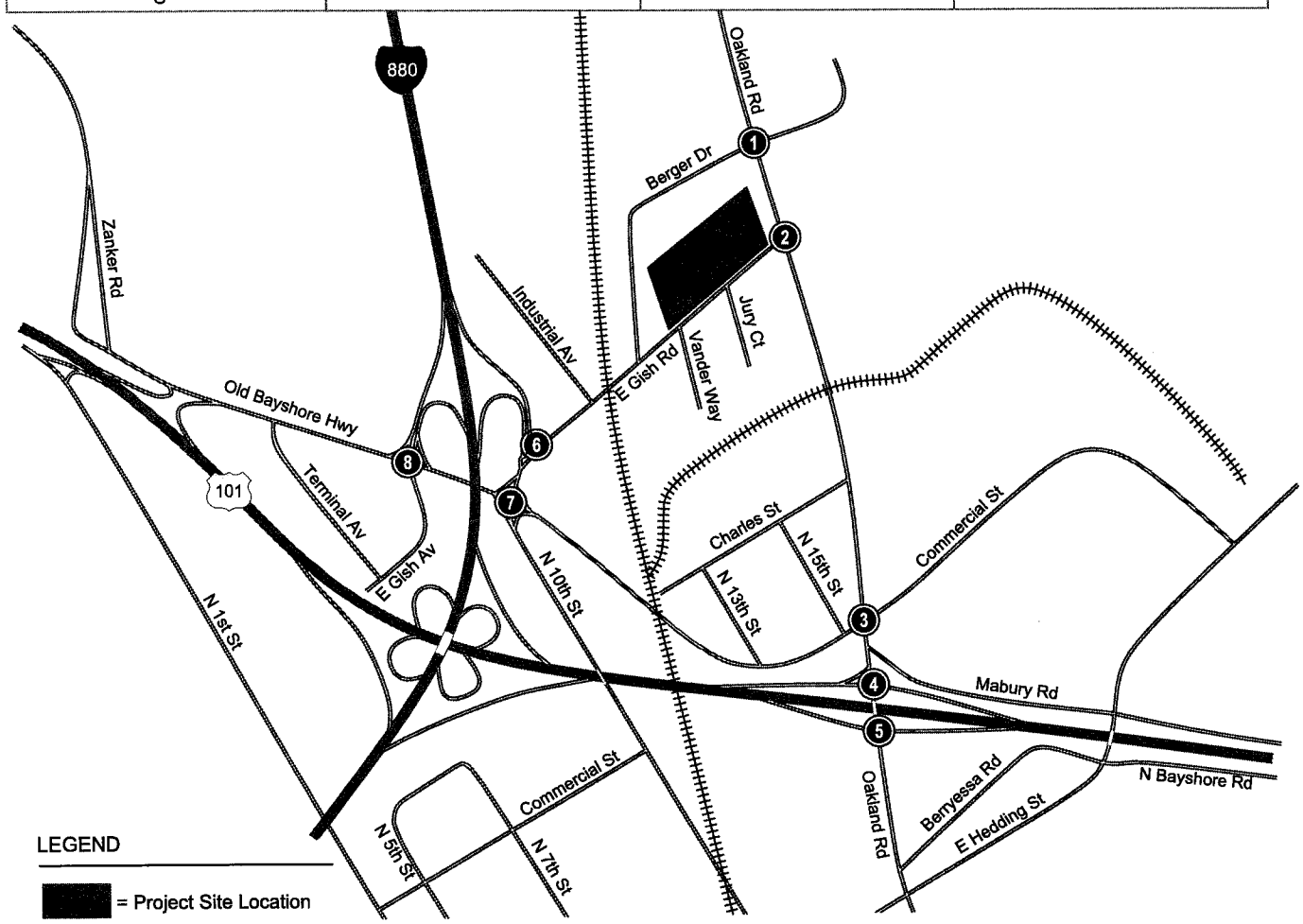


Figure 8
Existing Plus Project Traffic Volumes

City of San Jose Intersection Analysis

The results of the intersection level of service analysis show that, measured against the City of San Jose level of service standards, the same two signalized study intersections that currently operate at unacceptable levels during the AM peak hour would continue to operate unacceptably during the AM peak hour under existing plus project conditions:

Oakland Road and Commercial Street (LOS F)
Oakland Road and US 101 North Ramps (LOS E)

CMP Intersections

The results of the intersection level of service analysis show that, measured against CMP standards, the two CMP intersections would operate at an acceptable LOS E or better under existing plus project conditions during both the AM and PM peak hours of traffic.

The level of service calculation sheets are included in Appendix D.

Freeway Segment Level of Service Analysis

The results of the CMP freeway level of service analysis are summarized in Table 7. Traffic volumes on the study freeway segments under existing plus project conditions were estimated by adding project trips to the existing volumes obtained from the 2010 CMP Annual Monitoring Report. The results show that the project would not cause an increase in traffic volumes of more than one percent on any of the freeway segments. Therefore, the project would not have a significant impact on any of the study freeway segments.

Table 7
Freeway Segment Level of Service Analysis

					Existing Plus Project Trips													Project Trips					
					Mixed-Flow						HOV Lane							Mixed-Flow			HOV Lane		
Freeway	Segment		Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Avg Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Total Volume	Volume	% Capacity	Volume	% Capacity	Impact?
US 101	McKee Rd	to Oakland Rd	NB	AM	21	3	6,900	5,115	81.2	F	42	1	1,800	2,102	50.0	E	7	5	0.1%	2	0.1%	*NO*
				PM	66	3	6,900	5,152	26.0	D	70	1	1,800	700	10.0	A	2	2	0.0%	0	0.0%	*NO*
US 101	Oakland Rd	to I-880	NB	AM	15	3	6,900	4,321	96.0	F	34	1	1,800	2,010	59.1	F	1	1	0.0%	0	0.0%	*NO*
				PM	66	3	6,900	4,360	22.0	C	70	1	1,800	840	12.0	B	0	0	0.0%	0	0.0%	*NO*
US 101	I-880	to Old Bayshore Hwy	NB	AM	15	3	6,900	4,322	96.1	F	21	1	1,800	1,681	80.0	F	3	2	0.0%	1	0.0%	*NO*
				PM	66	3	6,900	3,770	19.0	C	70	1	1,800	560	8.0	A	0	0	0.0%	0	0.0%	*NO*
US 101	Old Bayshore Hwy	to N. First St	NB	AM	10	3	6,900	3,453	115.1	F	16	1	1,800	1,491	93.2	F	4	3	0.0%	1	0.0%	*NO*
				PM	66	3	6,900	4,160	21.0	C	70	1	1,800	700	10.0	A	0	0	0.0%	0	0.0%	*NO*
US 101	Oakland Rd	to McKee Rd	SB	AM	66	3	6,900	3,773	19.1	C	67	1	1,800	211	3.1	A	4	3	0.0%	1	0.0%	*NO*
				PM	27	3	6,900	5,513	68.1	F	70	1	1,800	2,381	34.0	D	4	3	0.0%	1	0.0%	*NO*
US 101	I-880	to Oakland Rd	SB	AM	66.5	3	6,900	2,801	14.0	B	67	1	1,800	340	5.1	A	1	1	0.0%	0	0.0%	*NO*
				PM	6	3	6,900	2,511	139.5	F	40	1	1,800	2,360	59.0	F	1	1	0.0%	0	0.0%	*NO*
US 101	Old Bayshore Hwy	to I-880	SB	AM	66.5	3	6,900	3,201	16.0	B	67	1	1,800	270	4.0	A	1	1	0.0%	0	0.0%	*NO*
				PM	12	3	6,900	3,932	109.2	F	70	1	1,800	2,380	34.0	D	2	2	0.0%	0	0.0%	*NO*
US 101	N. First St	to Old Bayshore Hwy	SB	AM	66	3	6,900	3,771	19.0	C	67	1	1,800	410	6.1	A	1	1	0.0%	0	0.0%	*NO*
				PM	10	3	6,900	3,512	117.1	F	70	1	1,800	2,520	36.0	D	2	2	0.0%	0	0.0%	*NO*
I-880	N. 1st ST	to US 101	NB	AM	21	3	6,900	5,112	81.1	F	–	–	–	–	–	–	2	2	0.0%	0	–	*NO*
				PM	47	3	6,900	6,492	46.0	E	–	–	–	–	–	–	2	2	0.0%	0	–	*NO*
I-880	US 101	to E. Brokaw Rd	NB	AM	30	3	6,900	5,762	64.0	F	–	–	–	–	–	–	2	2	0.0%	0	–	*NO*
				PM	34	3	6,900	6,022	59.0	F	–	–	–	–	–	–	2	2	0.0%	0	–	*NO*
I-880	US 101	to N. 1st ST	SB	AM	35	3	6,900	6,093	58.0	F	–	–	–	–	–	–	4	3	0.0%	1	–	*NO*
				PM	16	3	6,900	4,521	94.2	F	–	–	–	–	–	–	1	1	0.0%	0	–	*NO*
I-880	E. Brokaw Rd	to US 101	SB	AM	63	3	6,900	6,438	34.1	D	–	–	–	–	–	–	10	8	0.1%	2	–	*NO*
				PM	18	3	6,900	4,702	87.1	F	–	–	–	–	–	–	2	2	0.0%	0	–	*NO*

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2010.
Bold indicates a significant project impact.

4. Background Conditions

This chapter presents background traffic conditions, which are defined as conditions just prior to completion of the proposed project. It describes the planned transportation system, the procedure used to determine background traffic volumes, and the resulting traffic conditions. This scenario predicts a realistic traffic condition that would occur as approved development gets built and occupied.

Background Transportation Network

At the direction of the City of San Jose, it was assumed in this analysis that the transportation network under background conditions would be the same as the existing transportation network.

Background Traffic Volumes

Background peak hour traffic volumes were estimated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments in the City of San Jose was obtained from the City's Approved Trips Inventory (ATI). Trips from the 84 students in excess of the permitted capacity were subtracted under background conditions. Background traffic volumes are shown on Figure 9. The ATI is contained in Appendix B.

Background Intersection Level of Service Analysis

Intersection levels of service were evaluated against City of San Jose and CMP standards. The results of the intersection level of service analysis under background conditions are summarized in Table 8.

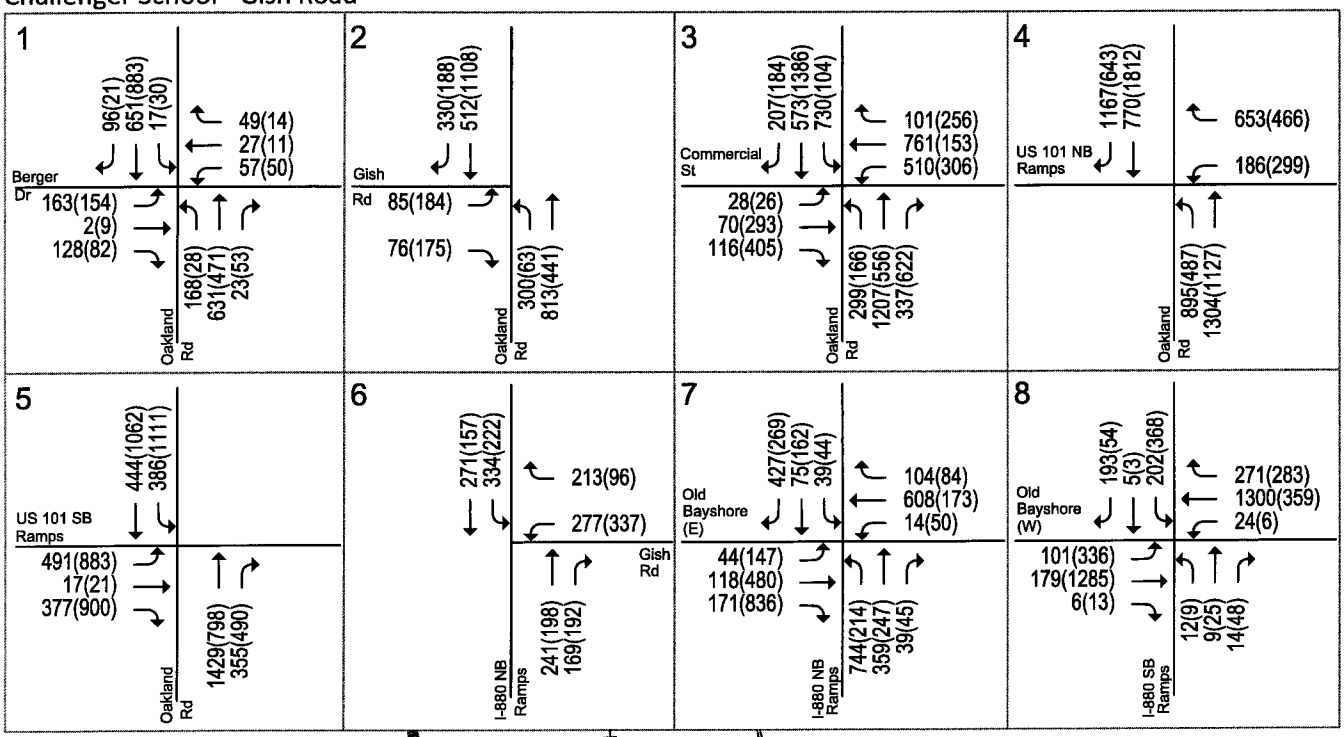
City of San Jose Intersection Analysis

The results of the intersection level of service analysis show that, measured against the City of San Jose level of service standards, three signalized study intersections would operate unacceptably during either the AM or PM peak hour as indicated below:

Oakland Road/Commercial Street (LOS F – AM Peak Hour)
Oakland Road/US 101 North Ramps (LOS F – AM Peak Hour, LOS E – PM peak hour)
Oakland Road/US 101 South Ramps (LOS F – PM Peak Hour)

The remaining signalized study intersections would operate at acceptable levels of service (LOS D or better) during both the AM and PM peak hours of traffic, according to City of San Jose standards.

Challenger School - Gish Road



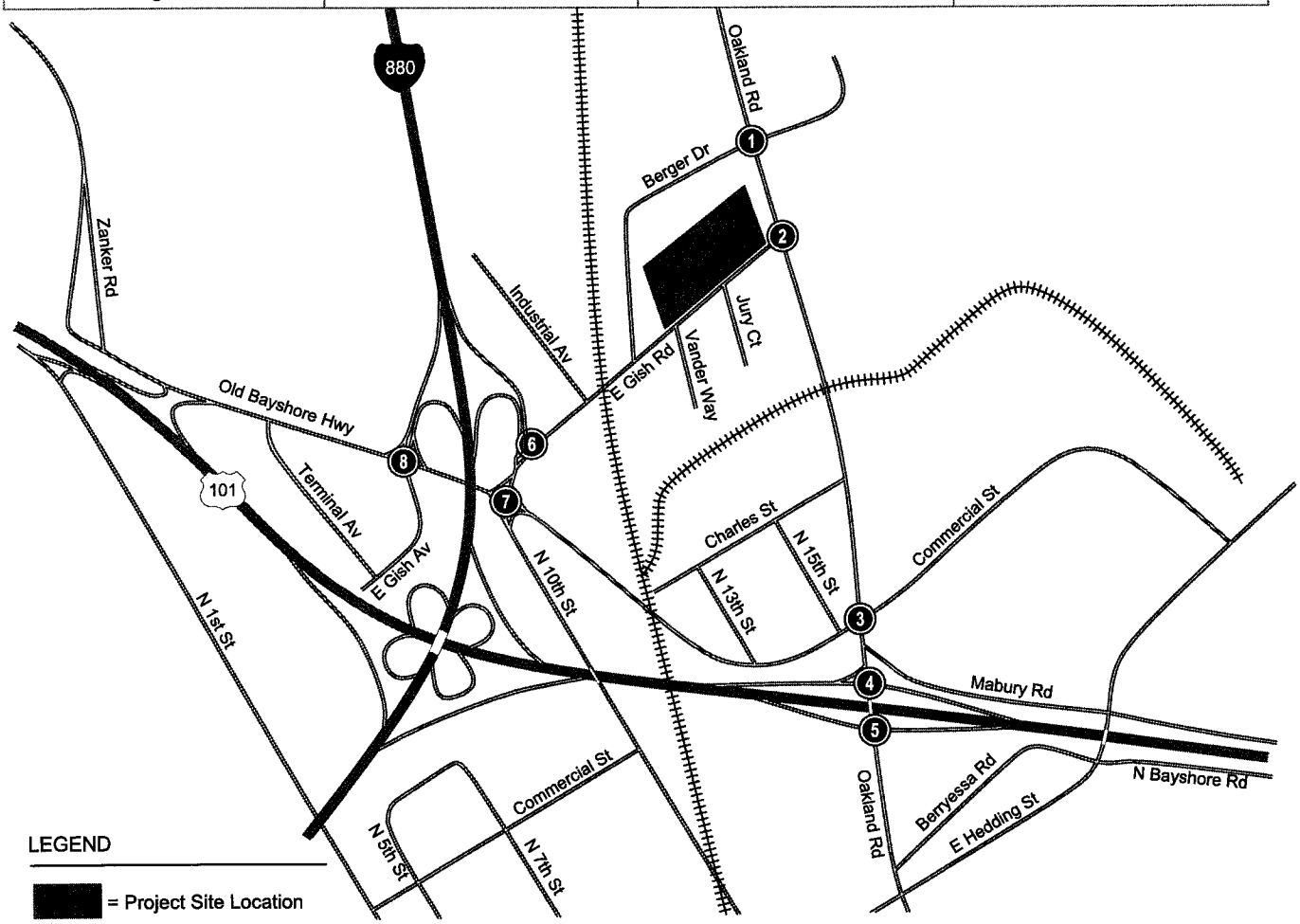


Figure 9
Background Traffic Volumes

CMP Intersections

The results of the intersection level of service analysis show that, measured against the CMP standards, both CMP intersections would operate at an unacceptable LOS F during either the AM or PM peak hour under background conditions as indicated below:

Oakland Road and US 101 North Ramps (LOS F – AM Peak Hour)
Oakland Road and US 101 South Ramps (LOS F – PM Peak Hour)

The intersection level of service calculation sheets are included in Appendix D.

Table 8
Background Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS
1	Oakland Rd and Berger Dr	AM	1/10/12	38.0	D	37.7	D
		PM	1/10/12	30.6	C	30.4	C
2	Oakland Rd and Gish Rd	AM	1/10/12	14.8	B	14.4	B
		PM	1/10/12	14.4	B	13.4	B
3	Oakland Rd and Commercial St	AM	1/10/12	88.3	F	138.9	F
		PM	1/10/12	35.2	D	45.9	D
4	Oakland Rd and US 101 North Ramps*	AM	10/7/10	65.0	E	201.0	F
		PM	10/7/10	21.8	C	69.7	E
5	Oakland Rd and US 101 South Ramps*	AM	1/10/12	24.7	C	30.1	C
		PM	10/7/10	30.3	C	95.9	F
7	I-880 Ramps and Old Bayshore (East)	AM	1/10/12	34.1	C	36.0	D
		PM	1/10/12	22.2	C	25.3	C
8	I-880 Ramps and Old Bayshore (West)	AM	1/11/12	30.3	C	32.0	C
		PM	1/11/12	32.6	C	37.1	D

* Denotes CMP Intersection.

Signal Warrant Analysis

A peak hour signal warrant check (*MUTCD 2012 Edition*, Part 4, Warrant 3) was performed for the unsignalized study intersection of I-880 North Ramps and Gish Road to determine whether signalization would be justified on the basis of background peak hour traffic volumes. The analysis revealed that the signal warrant would be satisfied at this intersection based on background AM peak hour traffic volumes. The signal warrant worksheet is included in Appendix E.

5. Background Plus Project Conditions

This chapter describes near-term traffic conditions that most likely would occur when the project is complete. It includes a description of the City of San Jose significance criteria used to establish what constitutes a project impact, a description of the transportation system under background plus project conditions, the method by which project traffic is estimated, and any impacts caused by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts. This traffic scenario represents a more congested traffic condition than the existing plus project scenario, since it includes traffic generated by approved projects in the area that are not yet built and/or occupied.

Project Description

The project consists of the proposed expansion of the existing Challenger School on Gish Road and includes the demolition of 4 existing buildings and the addition of 8 portables for an increase of 3 classrooms. The additional classrooms will increase the student enrollment to 935 students; an increase of 76 students over the current enrollment of 859 students, and an increase of 160 students over the current approved enrollment of 775 students.

Background plus project conditions measures the impact of an additional 160 students against the background condition, which is the approved 775 student enrollment.

Transportation Network Under Background Plus Project Conditions

It is assumed in this analysis that the transportation network under background plus project conditions would be the same as the background transportation network.

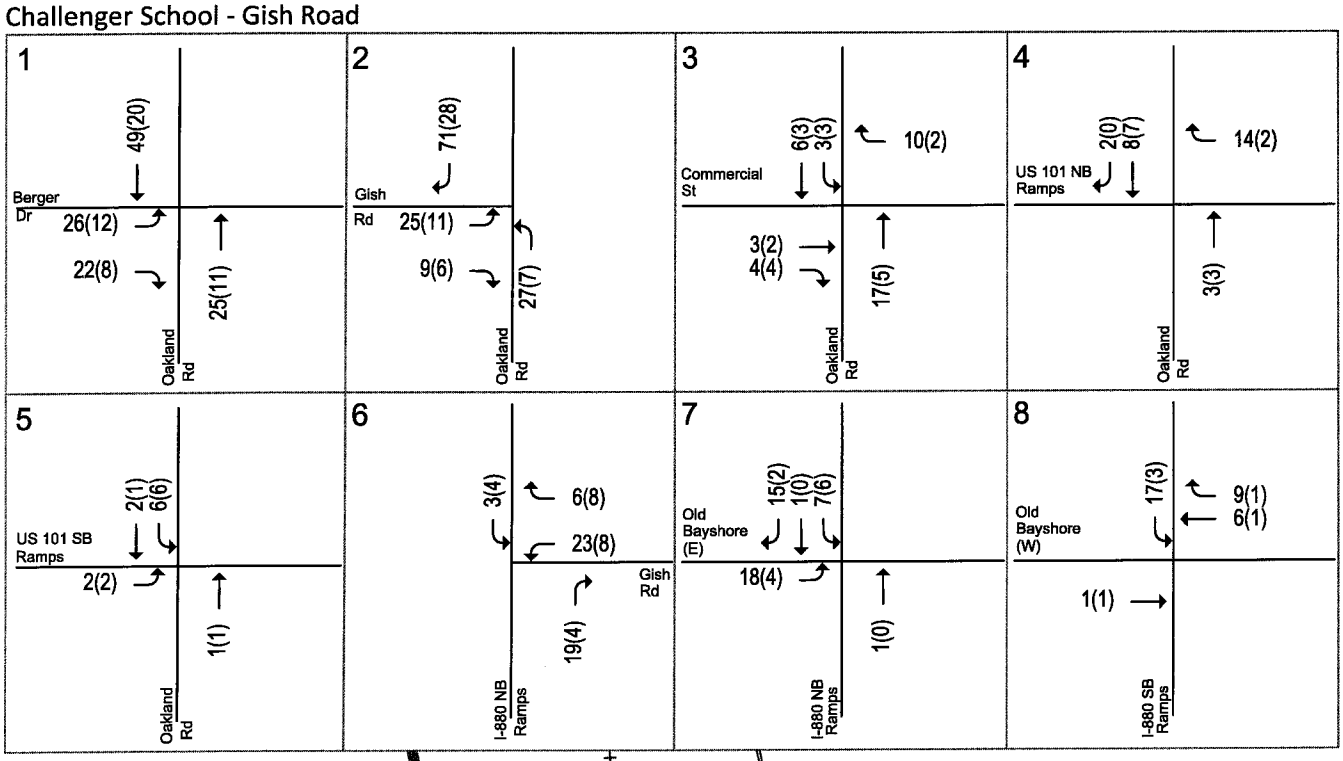
Project Trip Estimates

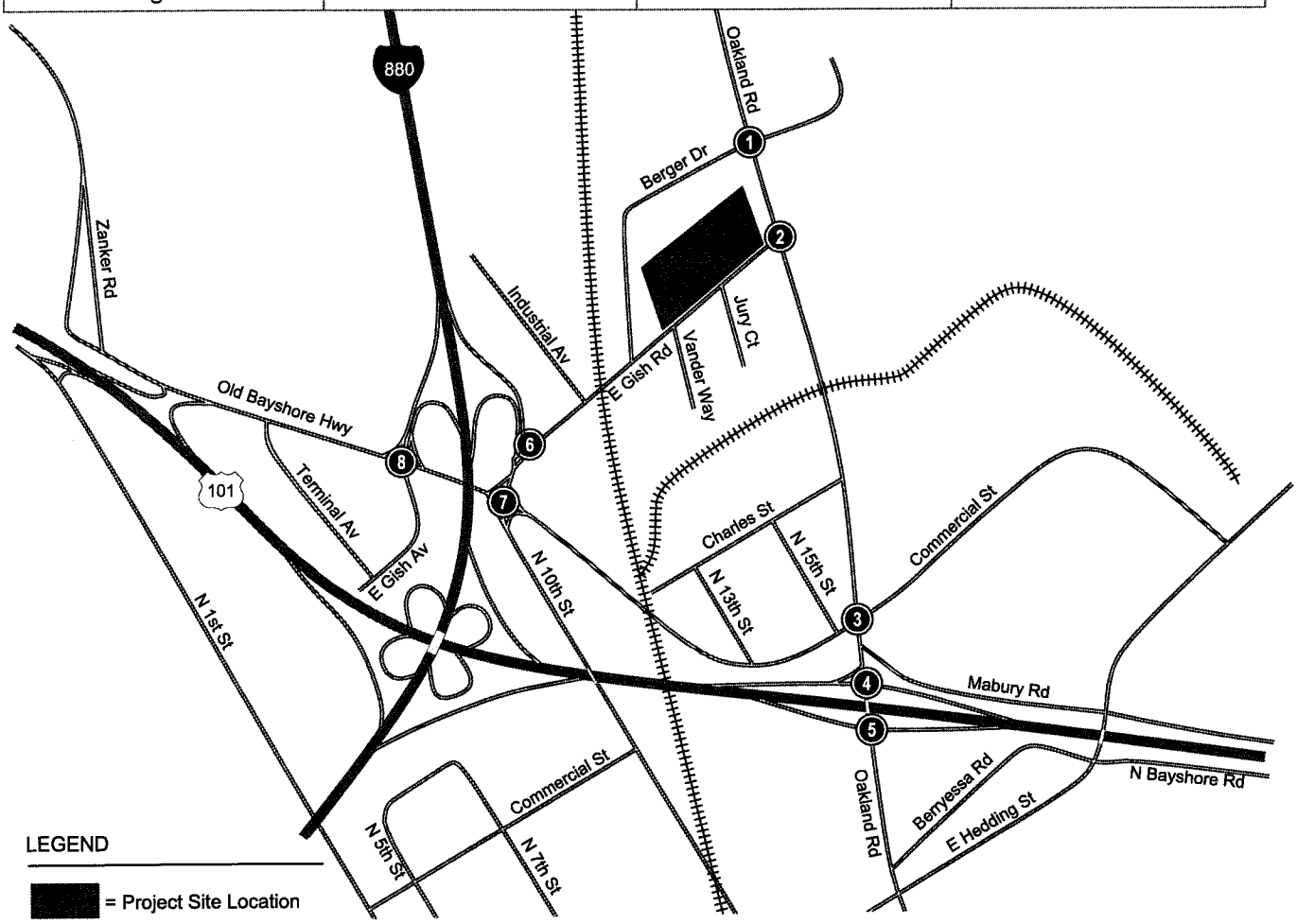
An increase in student enrollment of 160 students is expected to generate 98 inbound and 89 outbound trips during the AM peak hour, and 35 inbound and 45 outbound trips during the PM peak hour (see Table 9 below). Figure 10 shows the vehicle trip assignment for 160 students.

Table 9
Project Trip Generation Estimates (160 Students)

		AM Peak Hour				PM Peak Hour			
Land Use	Size	Rate	In	Out	Total	Rate	In	Out	Total
Challenger School	160 students	1.17	98	89	187	0.50	35	45	80

Challenger School - Gish Road





LEGEND

= Project Site Location

(X) = Study Intersection

XX(XX) = AM(PM) Peak Hour Volumes

Figure 10
Project Trip Assignment - 160 Students

Hexagon Transportation Consultants, Inc.

NORTH
Not to Scale

Background Plus Project Traffic Volumes

The project-generated trips attributable to 160 students were assigned to the roadway system in accordance with the trip distribution pattern discussed in Chapter 3. The project trips were added to background traffic volumes to obtain background plus project traffic volumes. The background plus project traffic volumes at the study intersections are shown graphically on Figure 11.

Traffic volumes for all components of traffic are tabulated in Appendix C.

Background Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis under background plus project conditions are summarized in Table 10. The results show that, measured against the City of San Jose and CMP level of service impact criteria, the study intersection of Oakland Road and US 101 North Ramps would be significantly impacted by the project. The project impact and proposed mitigation are described below in more detail.

The intersection level of service calculation sheets are included in Appendix D.

Table 10
Intersection Levels of Service Under Background Plus Project Conditions

				Existing		Background		Background + Project			
Study Number	Intersection	Peak Hour	Count Date	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Oakland Rd and Berger Dr	AM	1/10/12	38.0	D	37.7	D	38.1	D	0.3	0.025
		PM	1/10/12	30.6	C	30.4	C	30.7	C	0.5	0.011
2	Oakland Rd and Gish Rd	AM	1/10/12	14.8	B	14.4	B	15.3	B	1.3	0.078
		PM	1/10/12	14.4	B	13.4	B	13.9	B	0.7	0.011
3	Oakland Rd and Commercial St	AM	1/10/12	88.3	F	138.9	F	140.6	F	3.2	0.007
		PM	1/10/12	35.2	D	45.9	D	46.0	D	0.1	0.002
4	Oakland Rd and US 101 North Ramps*	AM	10/7/10	65.0	E	201.0	F	**203.6**	**F**	**4.5**	**0.010**
		PM	10/7/10	21.8	C	69.7	E	70.5	E	1.3	0.003
5	Oakland Rd and US 101 South Ramps*	AM	1/10/12	24.7	C	30.1	C	30.2	C	0.2	0.002
		PM	10/7/10	30.3	C	95.9	F	96.5	F	0.9	0.002
7	I-880 Ramps and Old Bayshore (East)	AM	1/10/12	34.1	C	36.0	D	36.4	D	0.6	0.010
		PM	1/10/12	22.2	C	25.3	C	25.4	C	0.2	0.001
8	I-880 Ramps and Old Bayshore (West)	AM	1/11/12	30.3	C	32.0	C	32.7	C	1.1	0.012
		PM	1/11/12	32.6	C	37.1	D	37.2	D	0.2	0.002

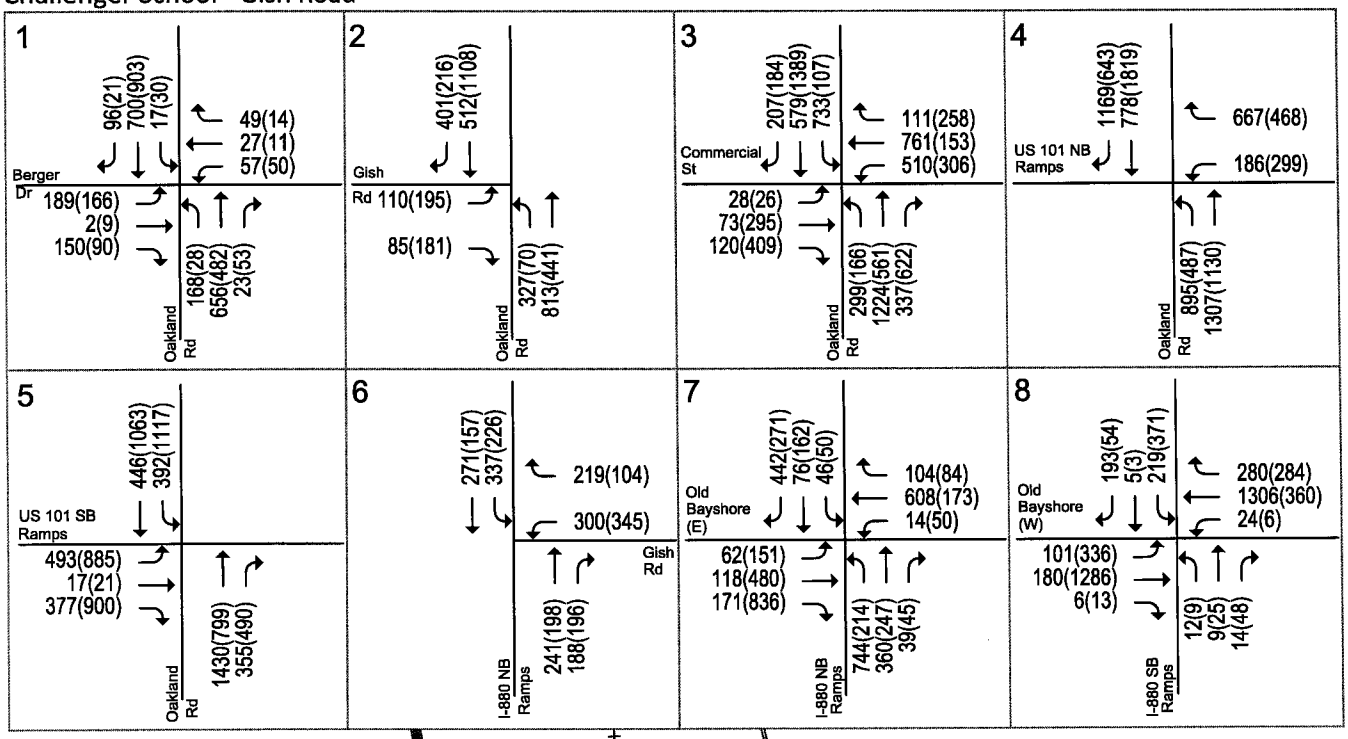
* Denotes CMP Intersection.
BOLD Denotes Significant Impact

Oakland Road and US 101 North Ramps

Impact: This intersection would operate at LOS F during the AM peak hour under background conditions, and the added trips as a result of the project would cause the average critical delay to increase by 4.5 seconds (four seconds or more) and the V/C ratio to increase by 0.01 (one percent or more). Based on the City of San Jose and CMP level of service impact criteria, this constitutes a significant project impact.

Mitigation: Participation in the US 101/Oakland/Mabury TDP Traffic Impact Fee Program.

Challenger School - Gish Road



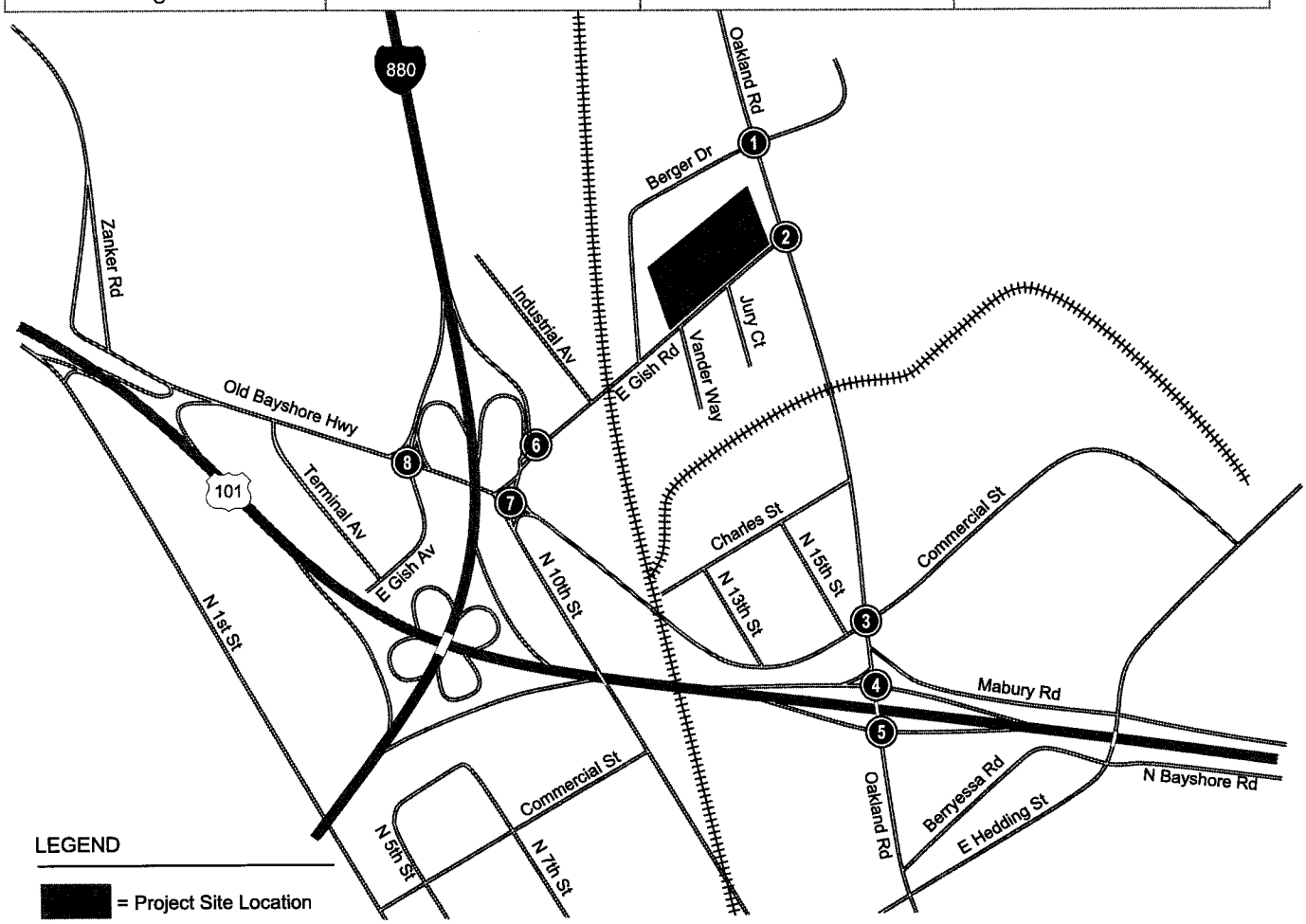


Figure 11
Background Plus Project Traffic Volumes

Hexagon Transportation Consultants, Inc.

NORTH
Not to Scale

US 101/Oakland/Mabury Transportation Development Policy (TDP)

The City of San Jose has identified operational problems along the Oakland Road corridor at the US 101 interchange, which are due primarily to the capacity constraints of the interchange. The interchange's current configuration is inadequate to serve the vehicular demand due to it serving as the main gateway into the Oakland Road area and as the only route across US 101. As a result, the City has identified two key capital improvement projects: 1) modification of the US 101/Oakland Road interchange, including improvements to the Oakland Road/Commercial Street intersection, and 2) construction of a new US 101/Mabury Road interchange. Both interchange projects will create additional capacity for accessing and crossing US 101, which will be crucial to accommodate future growth in the vicinity, including the future BART station at the San Jose Flea Market site. To fund these necessary interchange improvements, the City has developed the US 101/Oakland/Mabury Transportation Development Policy (TDP).

The purpose of the US 101/Oakland/Mabury TDP is to provide additional needed freeway access capacity at the US 101/Oakland Road interchange in order to accommodate new mixed-use, commercial and residential development, and to provide incentives for new industrial development in the areas of San Jose generally surrounding the interchange that otherwise would not be possible due to existing capacity constraints. The result of the City Council's approval of the US 101/Oakland/Mabury TDP is a change to the normal sequence of events, allowing one or more projects to develop and generate traffic congestion in excess of the City's Level of Service Policy standard for a temporary period of time prior to construction of the required transportation improvements. As part of the new Policy, a fee to fund the planned interchange improvements has been adopted. Any project that would add traffic to the US 101/Oakland Road interchange is required to participate in the TDP program. The new TDP includes a fee schedule requiring all new developments to pay a "fair share" contribution for using a portion of the interchange capacity that would be created with buildout of the US 101/Oakland Road interchange and construction of a new US 101/Mabury Road interchange. Unlike most Area Development Policies that base their fees on the number of residential units or square footages built, the fee for the US 101/Oakland/ Mabury TDP is based on the number of PM peak hour vehicular trips that would be added to the US 101/Oakland Road interchange.

Since the proposed Challenger school expansion project would send some PM peak hour vehicle trips through the US 101/Oakland Road interchange, the project would be required to pay a fair share contribution toward the planned interchange improvements. Payment of the TDP traffic impact fee also would serve as mitigation for the project, since the project would result in significant impacts at the Oakland Road/US 101 North Ramps study intersection. The TDP traffic impact fee is $32,595.15 per each new PM peak hour vehicle trip that would be added to the US 101/Oakland Road interchange. The project would be required to pay the traffic impact fee prior to Public Works clearance.

Estimated US 101/Oakland/Mabury TDP Impact Fee: $32,595.15 x 19 PM peak hour trips = $619,307.85

Note that while the significant project impact would occur during the AM peak hour, the TDP traffic impact fee is based on PM peak hour project-generated trips. However, the planned interchange improvements also would address issues that occur during the AM peak hour of traffic.

Signal Warrant Analysis

A peak hour signal warrant check (*MUTCD 2012 Edition*, Part 4, Warrant 3) was performed for the unsignalized study intersection of I-880 North Ramps and Gish Road to determine whether signalization would be justified on the basis of background plus project peak hour traffic volumes. The analysis revealed that the signal warrant would be satisfied at this intersection based on background plus project AM peak hour traffic volumes. The signal warrant worksheet is included in Appendix E.

6.
Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with the project site, including:

- Potential project impacts to transit, bicycle, and pedestrian facilities
- Site access and student pick-up/drop-off evaluation under background plus project conditions
- Intersection operations analysis – vehicle queuing and left-turn pocket storage at selected intersections under background plus project conditions
- Freeway off-ramp queuing analysis
- Freeway on-ramp meter analysis

Unlike the level of service impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Transit Services

Local bus line 66 operates along Oakland Road with stops located just south of Gish Road. Some of the older students could, theoretically, take advantage of the convenient location of the bus stop. However, since Challenger School has a policy that states parents and children are not allowed to walk to and from school between 8:00 – 9:00 AM and between 2:45 – 3:45 PM, this significantly limits potential bus usage by students. However, some staff may use the bus. Assuming that one percent of new trips utilized the bus service, this equates to approximately 2 new transit riders during the AM peak hour and 1 new transit rider during the PM peak hour. Assuming the existing transit service would remain unchanged, these new riders easily could be accommodated by the current available ridership capacity of the bus service in the study area, and no improvements to the existing transit service would be necessary with the project.

Bicycle Facilities

In the immediate vicinity of the site, Class II bike lanes exist on Berger Drive and on Oakland Road north of Commercial Street. While bike lanes on Oakland Road do connect the school to areas to the north including Milpitas, overall the existing network of bike lanes in the study area is somewhat intermittent. Because of the sporadic nature of bicycle facilities in the study area and heavy traffic volumes due to the presence of freeway interchanges near Challenger School, very few (if any) students are expected to ride their bicycles to and from school. A reasonable assumption for bicycle trip generation for the school is a one percent mode share. This calculates to approximately 2 bicycle trips during the AM peak hour and 1 bicycle trips during the PM peak hour. Thus, the project would be expected to add an insignificant number of bicycle trips to the roadways in the study area.

Pedestrian Facilities

Crosswalks with pedestrian signal heads are located at all signalized intersections in the study area. Most of the roadways in the vicinity of Challenger School have sidewalks on both sides of the street, although sidewalks are missing from some segments of Gish Road and Berger Drive as described in Chapter 2. Although the existing network of sidewalks provides adequate connectivity between the project site and other points of interest, pedestrian demand would be very low due to Challenger School's strict no walk policy before and after school.

Site Access and Circulation

The site access and circulation analysis is based on Challenger School's existing site layout and arrival and departure plan (see Appendix F). Gish Road provides access to Challenger School via one inbound driveway located at the eastern end of the project site and one outbound driveway located toward the western end of the project site. Left turns to and from the site are not permitted during the student drop-off and pick-up time periods. This is strictly enforced. Faculty and staff have a separate full access driveway located west of the outbound only driveway.

Student Loading

Since all drop-off/pick-up activities will continue to occur on-site, adequate vehicle queuing space must be provided on-site. The current student loading operation was evaluated in the field to determine whether the loading area is sufficient to serve the existing and planned student enrollment.

Existing Loading Area Operations

Before the start of school in the morning, the loading area experienced a steady inflow and outflow. The student drop-offs peaked at around 8:00 AM. The vehicle queues that occurred within the student drop-off area during this peak time period backed up to Gish Road and momentarily blocked westbound traffic on Gish Road. This condition did not last long, and the vehicle queues on Gish Road quickly cleared. By 8:15 AM, the student loading area was clearing out. No significant operational issues were observed at any time during the AM student drop-off period.

The peak student pick-up period occurs after school at about 3:00 PM. Based on observations, there is ample vehicle queuing space within the student loading area to serve the vehicle queues that develop during this time and no vehicle queuing issues were observed.

During PM peak commute period of traffic, there were noticeably fewer vehicles entering the student loading area. The student pick-ups peaked at approximately 5:30 PM during the PM peak commute period.

Loading Area Operations Under Project Conditions

Based on existing observations, the entire student loading area is utilized during the AM drop-off period. The loading areas consists of two 1,100-foot lanes, for a total of 2,200 feet of available vehicle queuing space, not including parking that is located adjacent to the lanes. Since the parking spaces are not really utilized in the morning like they are in the afternoon for waiting, parking was not counted toward the total available vehicle storage. Based on 2,200 feet of storage and an existing student enrollment of 859 students, this equates to approximately 2.5 feet of loading space per student. Therefore, 160 additional students would require 400 feet of additional storage, or 200 feet more per lane than what currently exists. This equates to approximately 16 vehicles added to the peak vehicle queue.

Since there is no way to provide the additional vehicle storage that would be required on-site, alternatives must be considered. One possible solution is to further stagger the school start times. Currently, grades 4-8 begin at 8:00 AM and grades 1-3 begin at 8:15 AM. Each drop-off period begins 15 minutes before the corresponding start time. Thus, by changing the start times for grades 4-8 and grades 1-3 to 7:55 AM and 8:20 AM, respectively, less vehicle overlap between drop-off groups would occur. If the drop-off periods remained at 15 minutes prior to the start times, this would provide a 10-minute gap in between drop-off

periods and would allow more vehicles to clear the site before the next group arrives. Implementation of this potential solution would be expected to result in adequate on-site vehicle storage at all times.

Sight Distance

Providing the appropriate sight distance reduces the likelihood of a collision at an intersection or driveway. Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. For a driveway on Gish Road, the Caltrans recommended stopping sight distance is 200 feet (based on a posted speed limit of 25 mph). This means that a driver must be able to see 200 feet down Gish Road in order to stop and avoid a collision with a vehicle or pedestrian. Based on the school's exit driveway location, adequate sight distance currently is provided.

Intersection Operations Analysis

The analysis of intersection level of service was supplemented with an analysis of intersection operations for selected intersections. The operations analysis is based on vehicle queuing for high demand turning movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = Average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future left-turn storage requirements at signalized intersections.

The vehicle queue estimates and a tabulated summary of the findings are provided in Tables 11 and 12. The intersection left-turn movements and freeway off-ramps where the project would add a considerable number of trips were evaluated for vehicle queuing. The analysis indicated that the estimated maximum vehicle queues for some of the high-demand intersection turning-movements would exceed the existing vehicle storage capacity under background plus project conditions. However, each of the identified movements currently is deficient. Also important to note is that these vehicle storage inadequacies are not considered significant project impacts.

The following intersections currently have inadequate storage capacity and would continue to be deficient under background and background plus project conditions:

Oakland Road and Gish Road – Northbound left turn (AM)
I-880 NB Ramps and Old Bayshore Highway – Eastbound left turn (AM)

Table 11
Vehicle Queuing and Left-Turn Pocket Storage Analysis – AM Peak Hour

	Oakland Rd & Gish Rd		Oakland Rd & Berger Dr	I-880 NB & Old Bayshore Hwy	I-880 SB & Old Bayshore Hwy
Movement:	NBL	EBL	EBL	EBL	SBL
Peak Hour Period:	AM	AM	AM	AM	AM
Existing					
Cycle/Delay[1] (sec)	90	90	136	106	156
Volume (vphpl)	292	86	177	53	166
Avg. Queue (veh/ln.)	7.3	2.2	6.7	1.6	7.2
Avg. Queue[2] (ft./ln)	183	54	167	39	180
95th %. Queue (veh/ln.)	12	5	11	4	12
95th %. Queue (ft./ln)	300	125	275	100	300
Storage (ft./ ln.)	200	425[3]	800[4]	130	700
Adequate (Y/N)	**N**	Y	Y	Y	Y
Background No Project					
Cycle/Delay[1] (sec)	90	90	136	106	156
Volume (vphpl)	314	98	177	53	211
Avg. Queue (veh/ln.)	7.9	2.5	6.7	1.6	9.1
Avg. Queue[2] (ft./ln)	196	61	167	39	229
95th %. Queue (veh/ln.)	13	5	11	4	14
95th %. Queue (ft./ln)	325	125	275	100	350
Storage (ft./ ln.)	200	425[3]	800[4]	130	700
Adequate (Y/N)	**N**	Y	Y	Y	Y
Background Plus Project					
Cycle/Delay[1] (sec)	90	90	136	106	156
Volume (vphpl)	341	123	203	71	228
Avg. Queue (veh/ln.)	8.5	3.1	7.7	2.1	9.9
Avg. Queue[2] (ft./ln)	213	77	192	52	247
95th %. Queue (veh/ln.)	14	6	12	5	15
95th %. Queue (ft./ln)	350	150	300	125	375
Storage (ft./ ln.)	200	425[3]	800[4]	130	700
Adequate (Y/N)	**N**	Y	Y	Y	Y

Notes:
[1] Vehicle queue calculations based on cycle length for signalized intersections and average delay for unsignalized intersections.
[2] Assumes 25 feet per vehicle queued.
[3] This is the storage capacity from the intersection to Jury Ct to the west. There is additional storage beyond the Jury Ct. intersection.
[4] This is the total storage capacity along Berger Drive before it turns south.
The closest driveway to the intersection is approximately 300 feet.

Oakland Road and Gish Road – Northbound Left-Turn

Under existing conditions, there is approximately 200 feet of storage capacity for the northbound left-turn movement at the intersection of Oakland Road and Gish Road. The storage capacity is measured as the distance between the intersection crosswalk and the taper of the left-turn pocket. Beyond this, vehicles would queue into the adjacent through lane. Under existing and background conditions, the calculated 95th percentile queues would be 300 feet and 325 feet, respectively, during the AM peak hour. Field observations confirmed the vehicle queues under existing conditions. During the AM peak hour, the project would add just one vehicle (25 feet) to the 95th percentile queue relative to background conditions. In such cases where the project contribution to the 95th percentile queue is only one vehicle, no improvements typically are required. However, the final determination will be made by City staff.

Table 12
Vehicle Queuing and Left-Turn Pocket Storage Analysis – PM Peak Hour

	Oakland Rd & Gish Rd		Oakland Rd & Berger Dr	I-880 NB & Old Bayshore Hwy	I-880 SB & Old Bayshore Hwy
Movement:	NBL	EBL	EBL	EBL	SBL
Peak Hour Period:	PM	PM	AM	PM	PM
Existing					
Cycle/Delay[1] (sec)	90	90	136	82	131
Volume (vphpl)	68	183	160	149	269
Avg. Queue (veh/ln.)	1.7	4.6	6.0	3.4	9.8
Avg. Queue[2] (ft./ln)	43	114	151	85	245
95th %. Queue (veh/ln.)	4	8	10	7	15
95th %. Queue (ft./ln)	100	200	250	175	375
Storage (ft./ ln.)	200	425 [3]	800 [4]	130	700
Adequate (Y/N)	Y	Y	Y	**N**	Y
Background No Project					
Cycle/Delay[1] (sec)	90	90	136	82	131
Volume (vphpl)	68	190	160	149	369
Avg. Queue (veh/ln.)	1.7	4.8	6.0	3.4	13.4
Avg. Queue[2] (ft./ln)	43	119	151	85	336
95th %. Queue (veh/ln.)	4	9	10	7	20
95th %. Queue (ft./ln)	100	225	250	175	500
Storage (ft./ ln.)	200	425 [3]	800 [4]	130	700
Adequate (Y/N)	Y	Y	Y	**N**	Y
Background Plus Project					
Cycle/Delay[1] (sec)	90	90	136	82	131
Volume (vphpl)	75	201	172	153	372
Avg. Queue (veh/ln.)	1.9	5.0	6.5	3.5	13.5
Avg. Queue[2] (ft./ln)	47	126	162	87	338
95th %. Queue (veh/ln.)	4	9	11	7	20
95th %. Queue (ft./ln)	100	225	275	175	500
Storage (ft./ ln.)	200	425 [3]	800 [4]	130	700
Adequate (Y/N)	Y[3]	Y	Y	**N**	Y

Notes:
[1] Vehicle queue calculations based on cycle length for signalized intersections and average delay for unsignalized intersections.
[2] Assumes 25 feet per vehicle queued.
[3] This is the storage capacity from the intersection to Jury Ct to the west. There is additional storage beyond the Jury Ct. intersection.
[4] This is the total storage capacity along Berger Drive before it turns south.
The closest driveway to the intersection is approximately 300 feet.

I-880 NB Ramps and Old Bayshore Highway – Eastbound Left-Turn

Under existing conditions, there is approximately 130 feet of storage capacity for the eastbound left-turn movement at the intersection of I-880 Northbound Ramps and Old Bayshore Highway. The storage capacity is measured as the distance between the intersection crosswalk and the taper of the left-turn pocket. Beyond this, vehicles would queue into the adjacent through lane. Under existing and background conditions, the calculated 95th percentile queue would be 175 feet during the PM peak hour. Field observations confirmed the vehicle queues under existing conditions. The project would not increase the 95th percentile vehicle queue relative to background conditions.

Freeway On-Ramp Meter Analysis

The following freeway on-ramps currently are metered during either the AM or PM peak commute period:

- US 101 northbound on-ramp from Oakland Road
- US 101 southbound on-ramp from Oakland Road
- US 101 northbound on-ramp from Old Bayshore Highway
- I-880 northbound on-ramp from Old Bayshore Highway
- I-880 southbound on-ramp from Old Bayshore Highway

Based on the project trip assignment, the Challenger School expansion would add fewer than 10 AM or PM peak hour trips to each of the metered freeway on-ramps listed above. Based on the low number of vehicle trips that the project would add to these metered on-ramps, it can be concluded that the addition of project would have very little effect on the vehicle queues and delays at these on-ramps. Thus, it was determined that a more detailed vehicle queuing and delay analysis of metered on-ramps was not necessary.

7. Cumulative Conditions

This chapter presents a summary of the traffic conditions that would occur under cumulative conditions. Cumulative plus project conditions were represented by adding to background plus project traffic volumes the additional traffic generated by all other potential projects in the general study area that have been proposed but have not yet been approved. This scenario is evaluated in order to fulfill CEQA requirements.

Cumulative Transportation Network

It is assumed in this analysis that the transportation network under cumulative conditions would be the same as described under background conditions with the exception of the roadway improvements listed below.

Oakland Road and Commercial Street – Addition of a second westbound left-turn lane on Commercial Street. (Funding: San Jose Flea Market project-sponsored improvement).

US 101 North Ramps and Oakland Road – Addition of a second westbound right-turn lane on the US 101 northbound off-ramp. (Funding: Unknown) Addition of a second northbound left-turn lane on Oakland Road. (Funding: San Jose Flea Market project-sponsored improvement) Conversion of a southbound through lane to a shared through/right-turn lane on Oakland Road. (Funding: San Jose Flea Market project-sponsored improvement and/or North San Jose Development Policy Phase 3 Traffic Impact Fee).

US 101 South Ramps and Oakland Road – Addition of a second eastbound right-turn lane on the US 101 southbound off-ramp. (Funding: San Jose Flea Market project-sponsored improvement) Increase the number of lanes on the US 101 overpass from 4 lanes to 6 lanes. (Funding: North San Jose Development Policy Phase 2 Traffic Impact Fee).

Note that the improvements listed above are not part of the US 101/Oakland/Mabury TDP.

List of Cumulative Projects

For the purpose of this traffic impact analysis, peak hour traffic volumes attributable to the following pending projects were considered under the cumulative conditions scenario:

1. Downtown Strategy Plan 2000 (Phase 2) – The Downtown Strategy Plan project is a comprehensive plan for the development of the downtown core area of San Jose. The Downtown Strategy Plan project area (downtown core) includes the areas generally to the west near Diridon Station, north to Taylor Street, to the east near SJSU and City Hall, and south to I-280.

2. North San Jose (Phase 2) – The North San Jose project represents an update to the North San Jose Area Development Policy. The Policy update would allow for increases in industrial square footage

and provide high-density housing and retail amenities for North San Jose area workers. The Policy update also identifies necessary transportation improvements to support new development and creates a traffic impact fee program for new development to share the cost of those improvements. The Policy area boundaries generally include the area within San Jose north and west of I-880 or the Coyote Creek, east of the Guadalupe River, and south of SR 237. The Policy area also includes an area east of I-880 along Murphy Avenue as far as Lundy Avenue.

San Jose Definition of Significant Cumulative Impacts

A significant cumulative traffic impact at an intersection is identified by comparing cumulative traffic conditions against background traffic conditions. The cumulative projects collectively would create a significant adverse impact on traffic conditions at a signalized intersection in the City of San Jose if during either the AM or PM peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under cumulative conditions, or
2. The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of cumulative project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds and the volume-to-capacity ratio (V/C) to increase by 0.01 or more.

An exception to this rule applies when the addition of cumulative project traffic reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.

Project Contribution to Cumulative Impacts

A single project's contribution to a cumulative intersection impact is deemed considerable in the City of San Jose if the proportion of project traffic represents 15 percent or more of the increase in total volume from background traffic conditions to cumulative with project traffic conditions.

Cumulative Traffic Volumes

The peak hour cumulative traffic volumes both without and with project traffic are shown graphically on Figures 12 and 13, respectively. Traffic volumes for all components of traffic are tabulated in Appendix C.

Cumulative Intersection Level of Service Analysis

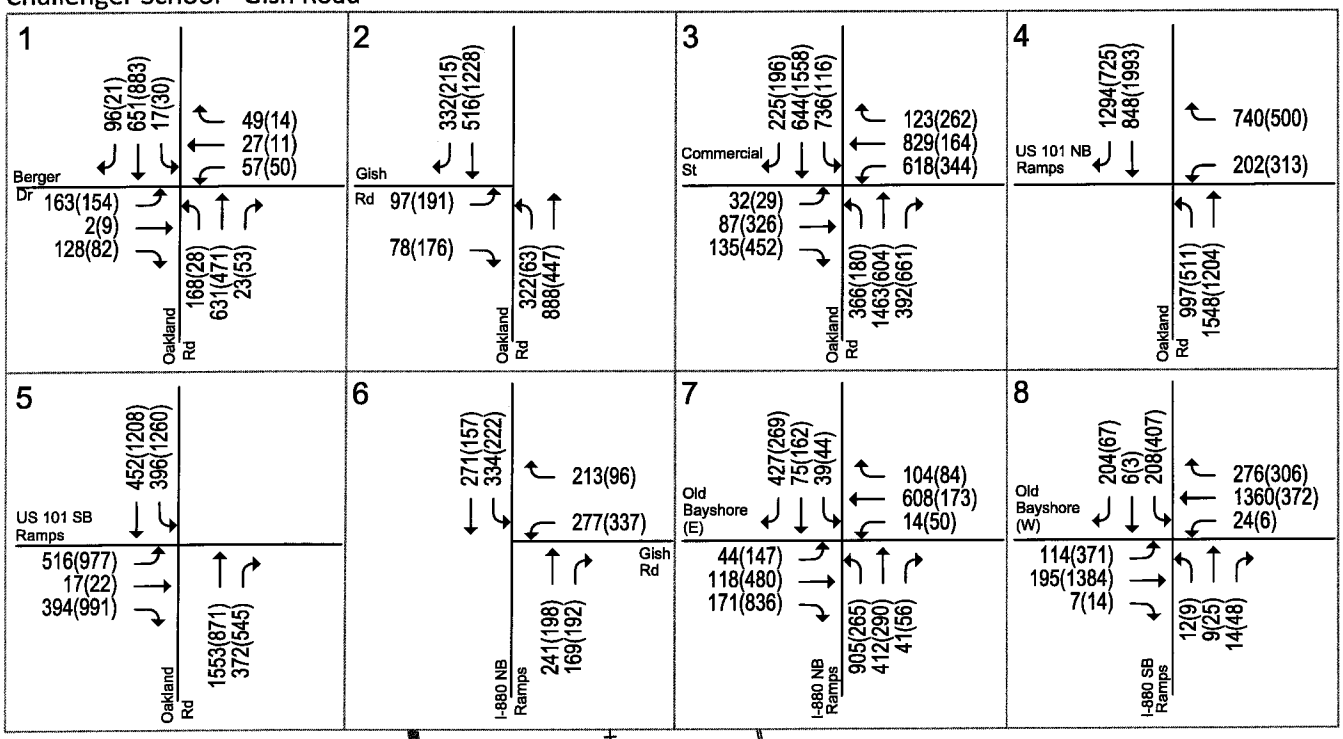
The intersection level of service results under cumulative conditions are summarized in Table 13. The level of service calculation sheets are included in Appendix D.

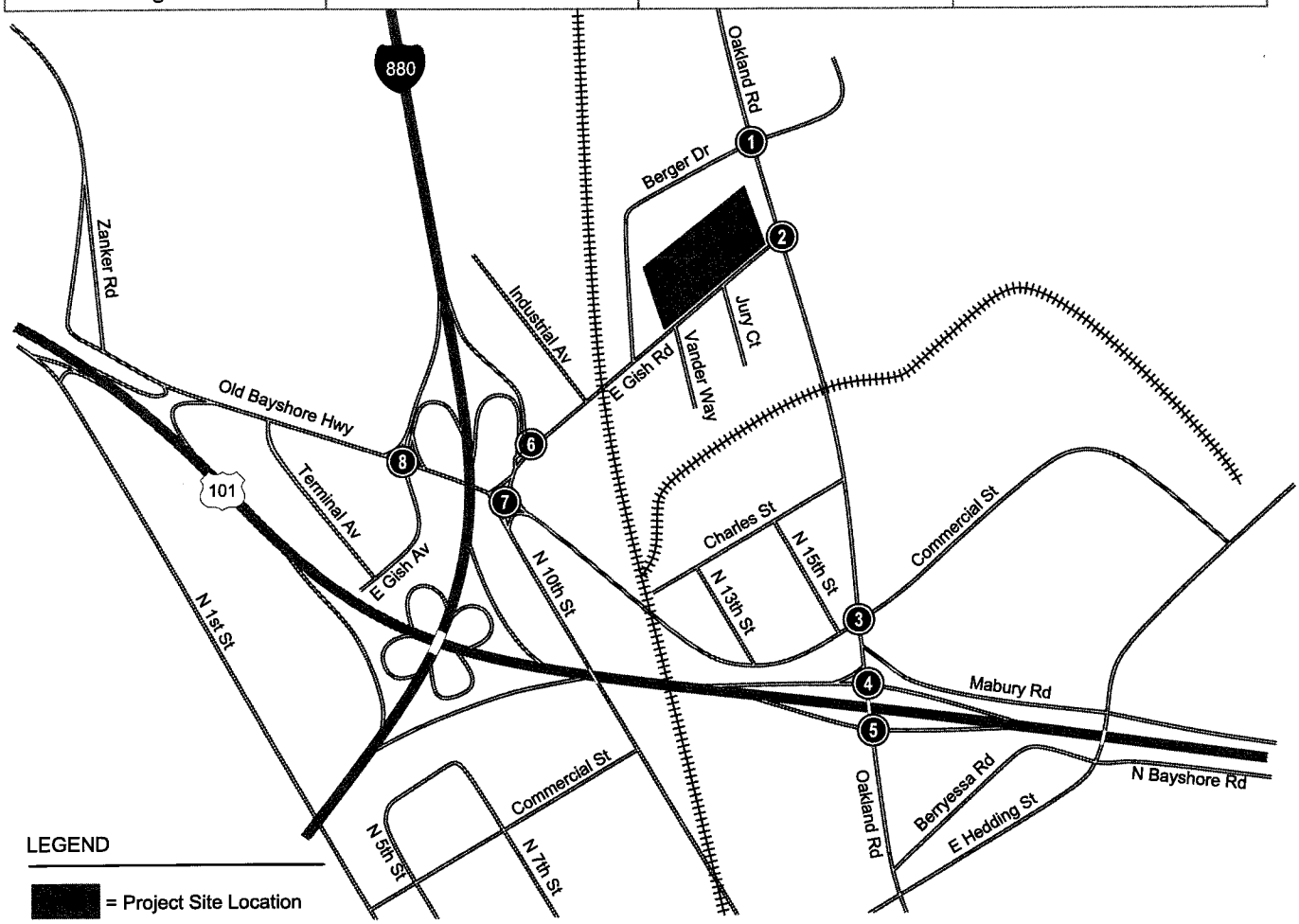
City of San Jose Intersection Analysis

The results of the cumulative intersection level of service analysis show that, measured against the City of San Jose level of service impact criteria, the estimated cumulative project trips collectively would create a significant adverse traffic impact at the intersection of Oakland Road/Commercial Street during the AM peak hour.

> The Challenger School project would contribute less than 6 percent of the increase in total AM peak hour traffic volume at the Oakland Road/Commercial Street intersection. Therefore, the project would not contribute a considerable amount of traffic to the cumulatively impacted intersection.

Challenger School - Gish Road





LEGEND

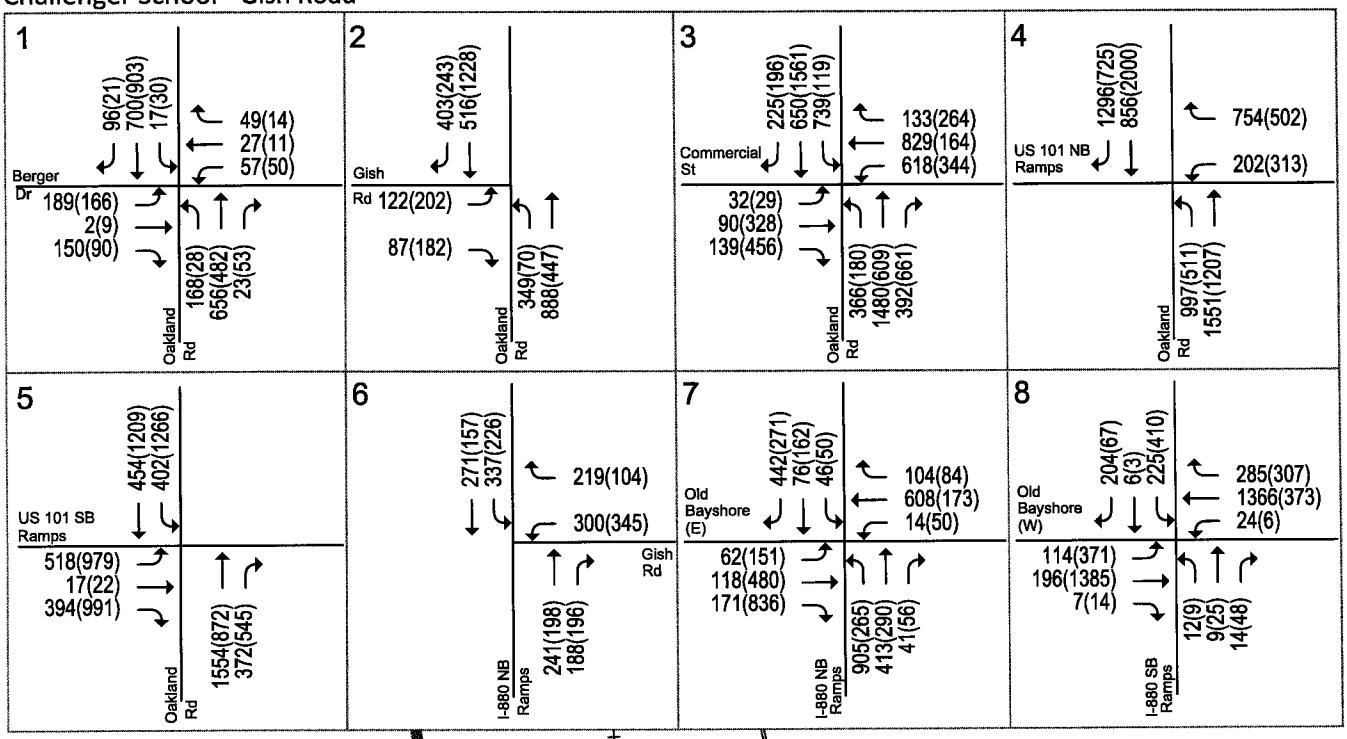
= Project Site Location

X = Study Intersection

XX(XX) = AM(PM) Peak Hour Volumes

Figure 12
Cumulative No Project Traffic Volumes

Challenger School - Gish Road



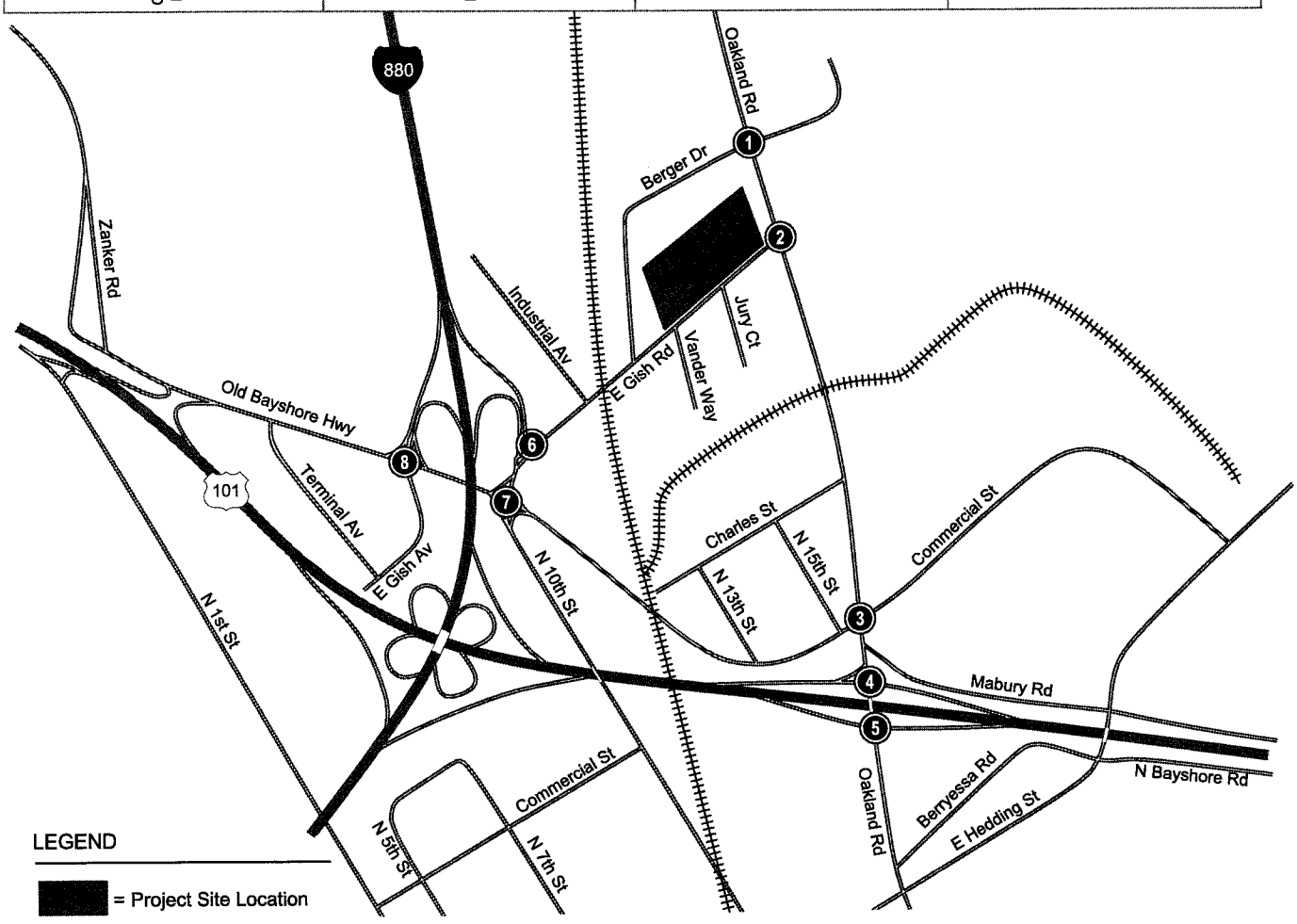


Figure 13
Cumulative Plus Project Traffic Volumes

CMP Intersections

The results of the level of service analysis show that, measured against CMP standards, the CMP intersections would operate at an acceptable level of service (LOS E or better) under cumulative no project and cumulative plus project conditions during both the AM and PM peak hours of traffic.

Table 13
Intersection Levels of Service Under Cumulative Conditions

Study Number	Intersection	Peak Hour	Background Avg. Delay	Background LOS	Cumulative No Project Avg. Delay	Cumulative No Project LOS	Cumulative With Project /a/ Avg. Delay	Cumulative With Project /a/ LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	Oakland Rd and Berger Dr	AM	37.7	D	37.7	D	38.1	D	0.3	0.025
		PM	30.4	C	30.4	C	30.7	C	0.5	0.011
2	Oakland Rd and Gish Rd	AM	14.4	B	14.7	B	15.6	B	2.2	0.101
		PM	13.4	B	13.3	B	13.8	B	0.5	0.051
3	Oakland Rd and Commercial St	AM	138.9	F	160.9	F	**162.5**	**F**	**57.9**	**0.128**
		PM	45.9	D	44.2	D	44.3	D	-3.1	-0.006
4	Oakland Rd and US 101 North Ramps*	AM	201.0	F	52.4	D	53.9	D	-281.8	-0.649
		PM	69.7	E	30.6	C	30.9	C	-66.9	-0.169
5	Oakland Rd and US 101 South Ramps*	AM	30.1	C	31.6	C	31.8	C	2.3	0.052
		PM	95.9	F	71.6	E	72.2	E	-58.0	-0.134
7	I-880 Ramps and Old Bayshore (East)	AM	36.0	D	38.3	D	39.1	D	3.5	0.076
		PM	25.3	C	27.9	C	28.0	C	3.3	0.027
8	I-880 Ramps and Old Bayshore (West)	AM	32.0	C	33.1	C	33.7	C	2.3	0.041
		PM	37.1	D	39.4	D	39.6	D	2.7	0.055

* Denotes CMP Intersection.
/a/ Cumulative + project conditions were compared against background conditions in order to determine significant cumulative impacts.
BOLD Denotes Significant Cumulative Impact

8. Conclusions

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose and the Congestion Management Program (CMP) of Santa Clara County. The study included the analysis of AM and PM peak hour traffic conditions for 7 signalized intersections, 1 unsignalized intersection, and 6 freeway segments. Project impacts on other transportation facilities, such as bicycle facilities and transit service, were determined on the basis of engineering judgment.

Intersection Level of Service Analysis

The results of the level of service analysis show that, measured against the City of San Jose and CMP level of service impact criteria, the study intersection of Oakland Road and US 101 North Ramps would be significantly impacted by the project. The impact and proposed mitigation are described below.

Oakland Road and US 101 North Ramps

Impact: This intersection would operate at LOS F during the AM peak hour under background conditions, and the added trips as a result of the project would cause the average critical delay to increase by 4.5 seconds (four seconds or more) and the V/C ratio to increase by 0.01 (one percent or more). Based on the City of San Jose and CMP level of service impact criteria, this constitutes a significant project impact.

Mitigation: Participation in the US 101/Oakland/Mabury TDP Traffic Impact Fee Program.

US 101/Oakland/Mabury Transportation Development Policy (TDP)

The City of San Jose has identified operational problems along the Oakland Road corridor at the US 101 interchange, which are due primarily to the capacity constraints of the interchange. The interchange's current configuration is inadequate to serve the vehicular demand due to it serving as the main gateway into the Oakland Road area and as the only route across US 101. As a result, the City has identified two key capital improvement projects: 1) modification of the US 101/Oakland Road interchange, including improvements to the Oakland Road/Commercial Street intersection, and 2) construction of a new US 101/Mabury Road interchange. Both interchange projects will create additional capacity for accessing and crossing US 101, which will be crucial to accommodate future growth in the vicinity, including the future BART station at the San Jose Flea Market site. To fund these necessary interchange improvements, the City has developed the US 101/Oakland/Mabury Transportation Development Policy (TDP).

The purpose of the US 101/Oakland/Mabury TDP is to provide additional needed freeway access capacity at the US 101/Oakland Road interchange in order to accommodate new mixed-use, commercial and residential development, and to provide incentives for new industrial development in the areas of San Jose generally surrounding the interchange that otherwise would not be possible due to existing capacity constraints. The result of the City Council's approval of the US 101/Oakland/Mabury TDP is a change to

the normal sequence of events, allowing one or more projects to develop and generate traffic congestion in excess of the City's Level of Service Policy standard for a temporary period of time prior to construction of the required transportation improvements. As part of the new Policy, a fee to fund the planned interchange improvements has been adopted. Any project that would add traffic to the US 101/Oakland Road interchange is required to participate in the TDP program. The new TDP includes a fee schedule requiring all new developments to pay a "fair share" contribution for using a portion of the interchange capacity that would be created with buildout of the US 101/Oakland Road interchange and construction of a new US 101/Mabury Road interchange. Unlike most Area Development Policies that base their fees on the number of residential units or square footages built, the fee for the US 101/Oakland/ Mabury TDP is based on the number of PM peak hour vehicular trips that would be added to the US 101/Oakland Road interchange.

Since the proposed Challenger school expansion project would send some PM peak hour vehicle trips through the US 101/Oakland Road interchange, the project would be required to pay a fair share contribution toward the planned interchange improvements. Payment of the TDP traffic impact fee also would serve as mitigation for the project, since the project would result in significant impacts at the Oakland Road/US 101 North Ramps study intersection. The TDP traffic impact fee is $32,595.15 per each new PM peak hour vehicle trip that would be added to the US 101/Oakland Road interchange. The project would be required to pay the traffic impact fee prior to Public Works clearance.

Estimated US 101/Oakland/Mabury TDP Impact Fee: $32,595.15 x 19 PM peak hour trips = $619,307.85

Note that while the significant project impact would occur during the AM peak hour, the TDP traffic impact fee is based on PM peak hour project-generated trips. However, the planned interchange improvements also would address issues that occur during the AM peak hour of traffic.

Signal Warrant Analysis

A peak hour signal warrant check (*MUTCD 2012 Edition*, Part 4, Warrant 3) was performed for the unsignalized study intersection of I-880 North Ramps and Gish Road to determine whether signalization would be justified on the basis of background plus project peak hour traffic volumes. The analysis revealed that the signal warrant would be satisfied at this intersection based on background plus project AM peak hour traffic volumes.

Freeway Segment Level of Service Analysis

Traffic volumes on the study freeway segments under existing plus project conditions were estimated by adding project trips to the existing volumes obtained from the 2010 CMP Annual Monitoring Report. The results show that the project would not cause an increase in traffic volumes of more than one percent on any of the freeway segments. Therefore, the project would not have a significant impact on any of the study freeway segments.

Cumulative Intersection Level of Service Analysis

The results of the cumulative intersection level of service analysis show that, measured against the City of San Jose level of service impact criteria, the estimated cumulative project trips collectively would create a significant adverse traffic impact at the intersection of Oakland Road/Commercial Street during the AM peak hour. However, since the Challenger School project would contribute much less than 15 percent of the increase in total AM peak hour traffic volume at the Oakland Road/Commercial Street intersection, the project would not contribute a considerable amount of traffic to the cumulatively impacted intersection.

Other Transportation Issues

The project would not have an adverse effect on existing transit, bicycle or pedestrian facilities in the study area.

Challenger School – Gish Road

Draft Transportation Impact Analysis

Technical Appendices

Appendix A

New Traffic Counts

AM Peak-Hour Volume Count Worksheet

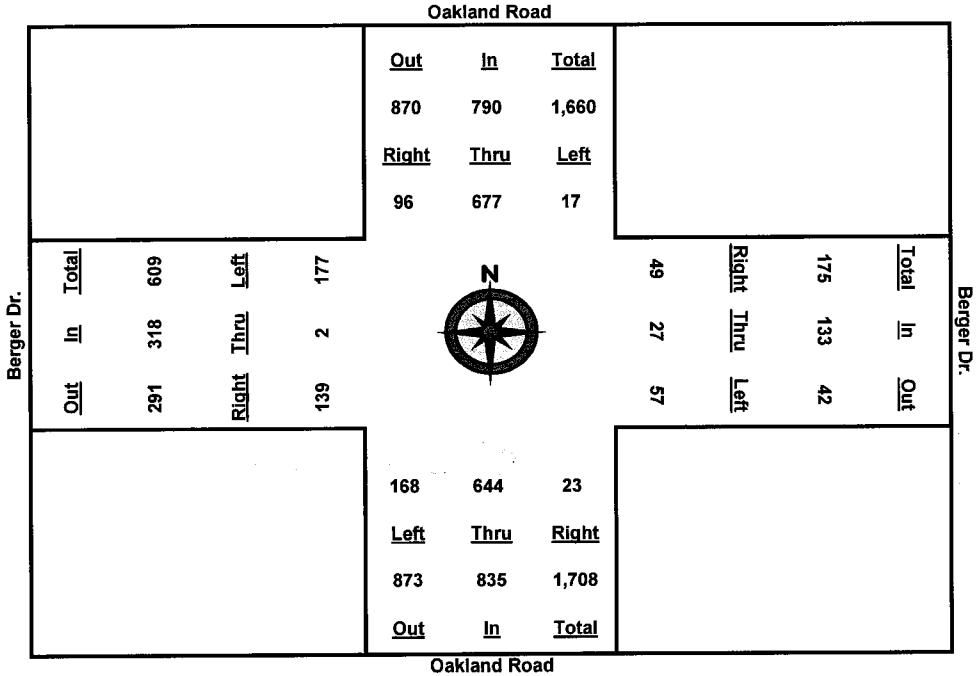
Date: 1/10/12
Counter: Sam and Peter
Intersection Name: Oakland Rd. and Berger
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland Road				Berger Dr.				Oakland Road				Berger Dr.			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	11	42	0	53	8	1	7	16	5	105	11	121	3	1	1	5
7:30	46	112	0	158	14	2	22	38	7	218	26	251	9	1	13	23
7:45	71	239	1	311	22	14	37	73	14	352	54	420	26	1	33	60
8:00	107	421	1	529	43	20	51	114	17	522	93	632	59	1	83	143
8:15	125	607	6	738	60	26	66	152	23	702	153	878	103	1	140	244
8:30	142	789	17	948	63	29	79	171	30	862	194	1,086	148	3	190	341
8:45	159	888	21	1,068	66	34	91	191	33	1,008	217	1,258	167	4	215	386
9:00	169	981	27	1,177	67	40	99	206	38	1,154	235	1,427	185	6	226	417

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	107	421	1	529	43	20	51	114	17	522	93	632	59	1	83	143	1,418
7:15 - 8:15	114	565	6	685	52	25	59	136	18	597	142	757	100	0	139	239	1,817
7:30 - 8:30	96	677	17	790	49	27	57	133	23	644	168	835	139	2	177	318	2,076
7:45 - 8:45	88	649	20	757	44	20	54	118	19	656	163	838	141	3	182	326	2,039
8:00 - 9:00	62	560	26	648	24	20	48	92	21	632	142	795	126	5	143	274	1,809
Peak Volumes:	**96**	**677**	**17**	**790**	**49**	**27**	**57**	**133**	**23**	**644**	**168**	**835**	**139**	**2**	**177**	**318**	**2,076**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	168	644	23	17	677	96	177	2	139	57	27	49



PM Peak-Hour Volume Count Worksheet

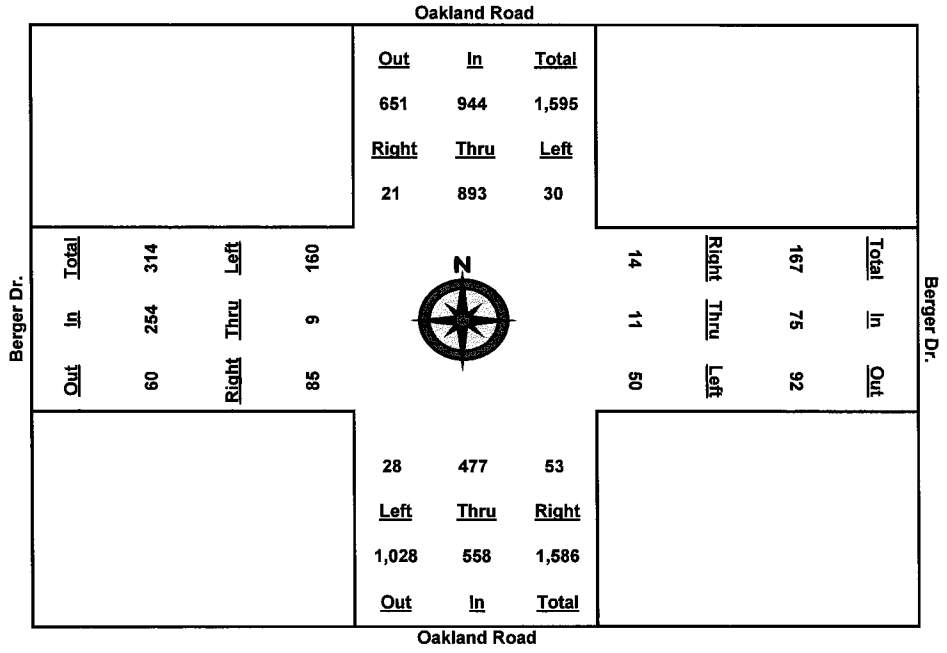
Date: 1/10/12
Counter: Sam and Peter
Intersection Name: Oakland Rd. and Berger
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland Road North Approach				Berger Dr. East Approach				Oakland Road South Approach				Berger Dr. West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	9	235	5	249	13	4	12	29	6	114	13	133	37	2	19	58
4:30	22	396	12	430	16	5	25	46	20	231	23	274	68	4	36	108
4:45	31	592	19	642	18	6	41	65	34	355	33	422	92	6	53	151
5:00	36	752	23	811	26	7	50	83	43	462	48	553	123	6	74	203
5:15	43	986	27	1,056	31	12	65	108	53	576	53	682	157	8	116	281
5:30	50	1,214	32	1,296	33	14	78	125	67	695	58	820	176	11	153	340
5:45	55	1,466	47	1,568	36	15	91	142	82	837	62	981	194	12	195	401
6:00	57	1,645	53	1,755	40	18	100	158	96	939	76	1,111	208	15	234	457

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	36	752	23	811	26	7	50	83	43	462	48	553	123	6	74	203	1,650
4:15 - 5:15	34	751	22	807	18	8	53	79	47	462	40	549	120	6	97	223	1,658
4:30 - 5:30	28	818	20	866	17	9	53	79	47	464	35	546	108	7	117	232	1,723
4:45 - 5:45	24	874	28	926	18	9	50	77	48	482	29	559	102	6	142	250	1,812
5:00 - 6:00	21	893	30	944	14	11	50	75	53	477	28	558	85	9	160	254	1,831
Peak Volumes:	**21**	**893**	**30**	**944**	**14**	**11**	**50**	**75**	**53**	**477**	**28**	**558**	**85**	**9**	**160**	**254**	**1,831**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	28	477	53	30	893	21	160	9	85	50	11	14



AM Peak-Hour Volume Count Worksheet

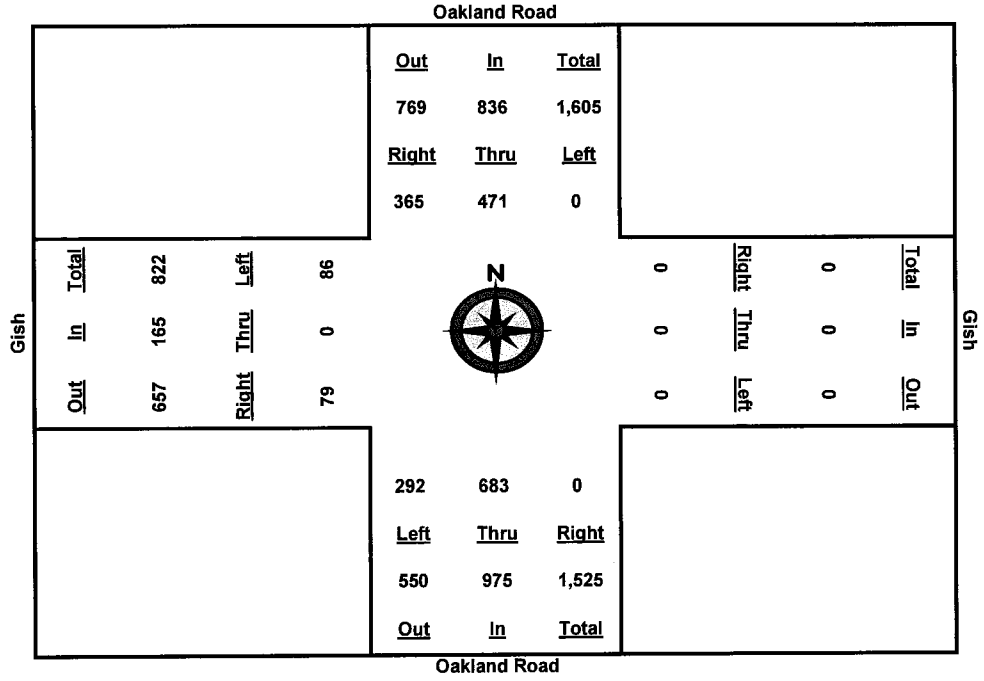
Date: 1/10/12
Counter: Kristen and Shaun
Intersection Name: Oakland and Gish
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland Road				Gish				Oakland Road				Gish			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	15	59	0	74	0	0	0	0	0	84	14	98	12	0	8	20
7:30	33	112	0	145	0	0	0	0	0	223	58	281	25	0	19	44
7:45	112	201	0	313	0	0	0	0	0	337	126	463	48	0	30	78
8:00	238	304	0	542	0	0	0	0	0	526	215	741	63	0	54	117
8:15	327	464	0	791	0	0	0	0	0	752	284	1,036	82	0	75	157
8:30	398	583	0	981	0	0	0	0	0	906	350	1,256	104	0	105	209
8:45	431	658	0	1,089	0	0	0	0	0	1,040	388	1,428	120	0	131	251
9:00	460	708	0	1,168	0	0	0	0	0	1,148	419	1,567	129	0	147	276

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	238	304	0	542	0	0	0	0	0	526	215	741	63	0	54	117	1,400
7:15 - 8:15	312	405	0	717	0	0	0	0	0	668	270	938	70	0	67	137	1,792
7:30 - 8:30	365	471	0	836	0	0	0	0	0	683	292	975	79	0	86	165	1,976
7:45 - 8:45	319	457	0	776	0	0	0	0	0	703	262	965	72	0	101	173	1,914
8:00 - 9:00	222	404	0	626	0	0	0	0	0	622	204	826	66	0	93	159	1,611
Peak Volumes:	**365**	**471**	**0**	**836**	**0**	**0**	**0**	**0**	**0**	**683**	**292**	**975**	**79**	**0**	**86**	**165**	**1,976**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	292	683	0	0	471	365	86	0	79	0	0	0



PM Peak-Hour Volume Count Worksheet

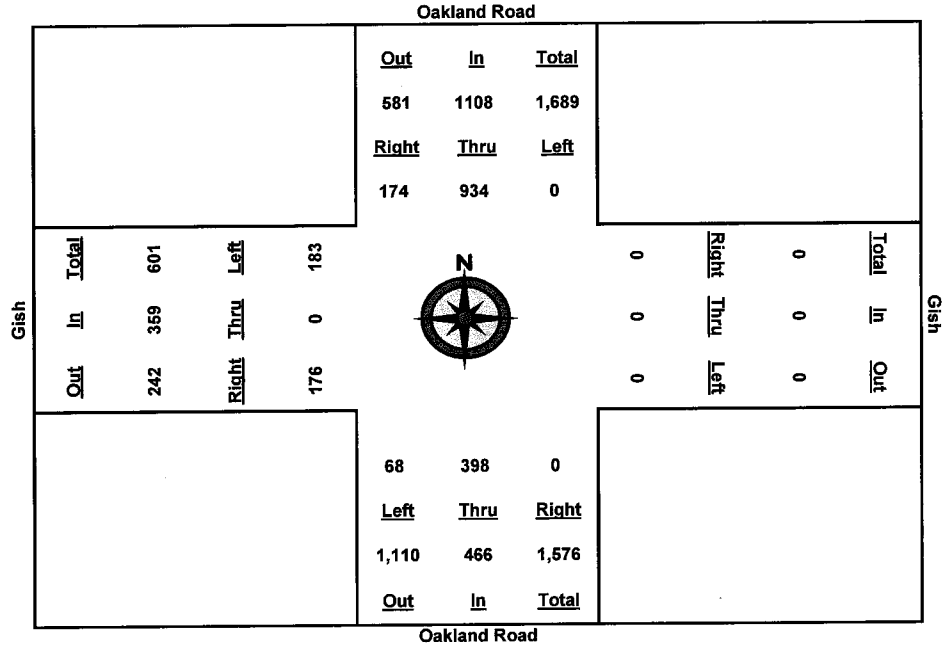
Date: 1/10/12
Counter: Kristen and Shaun
Intersection Name: Oakland and Gish
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland Road				Gish				Oakland Road				Gish			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	18	246	0	264	0	0	0	0	0	100	15	115	47	0	30	77
4:30	33	411	0	444	0	0	0	0	0	211	31	242	92	0	62	154
4:45	56	614	0	670	0	0	0	0	0	308	56	364	119	0	86	205
5:00	82	832	0	914	0	0	0	0	0	414	71	485	156	0	124	280
5:15	113	1,079	0	1,192	0	0	0	0	0	498	89	587	204	0	168	372
5:30	166	1,278	0	1,444	0	0	0	0	0	587	111	698	252	0	220	472
5:45	230	1,548	0	1,778	0	0	0	0	0	706	124	830	295	0	269	564
6:00	249	1,700	0	1,949	0	0	0	0	0	783	141	924	327	0	308	635

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	82	832	0	914	0	0	0	0	0	414	71	485	156	0	124	280	1,679
4:15 - 5:15	95	833	0	928	0	0	0	0	0	398	74	472	157	0	138	295	1,695
4:30 - 5:30	133	867	0	1,000	0	0	0	0	0	376	80	456	160	0	158	318	1,774
4:45 - 5:45	174	934	0	1,108	0	0	0	0	0	398	68	466	176	0	183	359	1,933
5:00 - 6:00	167	868	0	1,035	0	0	0	0	0	369	70	439	171	0	184	355	1,829
Peak Volumes:	**174**	**934**	**0**	**1,108**	**0**	**0**	**0**	**0**	**0**	**398**	**68**	**466**	**176**	**0**	**183**	**359**	**1,933**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	68	398	0	0	934	174	183	0	176	0	0	0



AM Peak-Hour Volume Count Worksheet

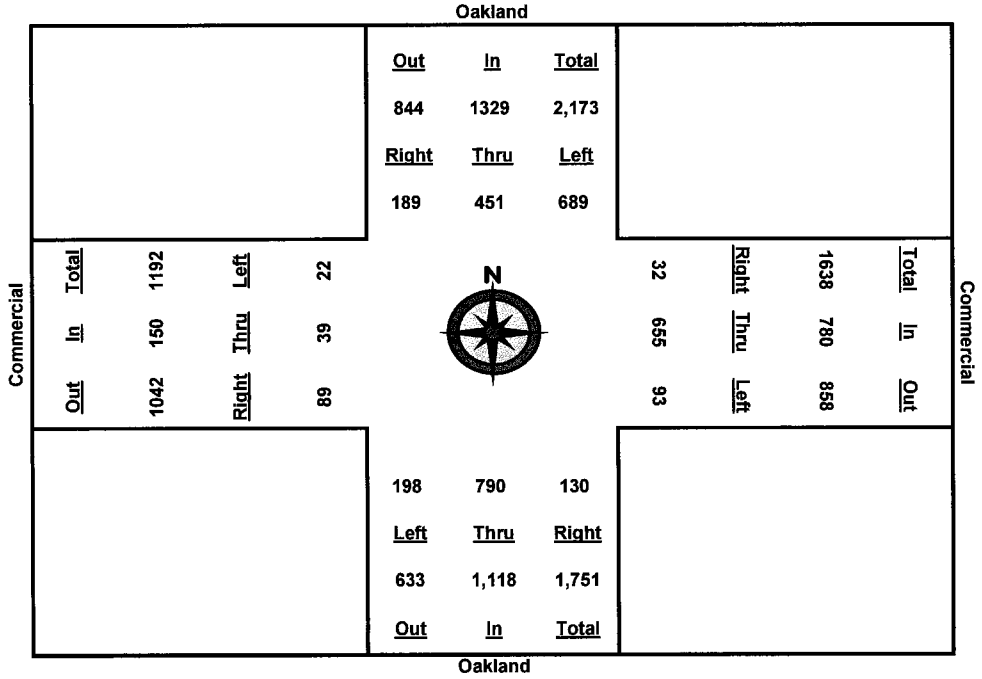
Date: 1/10/12
Counter: Steve and Jo
Intersection Name: Oakland and Commercial
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland North Approach				Commercial East Approach				Oakland South Approach				Commercial West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	27	89	169	285	8	71	11	90	15	102	39	156	15	12	3	30
7:30	63	181	313	557	13	173	20	206	40	259	93	392	41	27	11	79
7:45	98	307	494	899	19	306	28	353	64	450	140	654	55	39	17	111
8:00	160	401	651	1,212	25	476	63	564	74	660	187	921	72	48	22	142
8:15	210	508	830	1,548	28	681	90	799	137	887	238	1,262	100	57	27	184
8:30	252	632	1,002	1,886	45	828	113	986	170	1,049	291	1,510	130	66	33	229
8:45	289	783	1,172	2,244	52	946	130	1,128	207	1,196	336	1,739	147	80	36	263
9:00	327	869	1,321	2,517	63	1,057	143	1,263	244	1,358	399	2,001	172	94	40	306

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	160	401	651	1,212	25	476	63	564	74	660	187	921	72	48	22	142	2,839
7:15 - 8:15	183	419	661	1,263	20	610	79	709	122	785	199	1,106	85	45	24	154	3,232
7:30 - 8:30	189	451	689	1,329	32	655	93	780	130	790	198	1,118	89	39	22	150	3,377
7:45 - 8:45	191	476	678	1,345	33	640	102	775	143	746	196	1,085	92	41	19	152	3,357
8:00 - 9:00	167	468	670	1,305	38	581	80	699	170	698	212	1,080	100	46	18	164	3,248
Peak Volumes:	**189**	**451**	**689**	**1,329**	**32**	**655**	**93**	**780**	**130**	**790**	**198**	**1,118**	**89**	**39**	**22**	**150**	**3,377**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	198	790	130	689	451	189	22	39	89	93	655	32



PM Peak-Hour Volume Count Worksheet

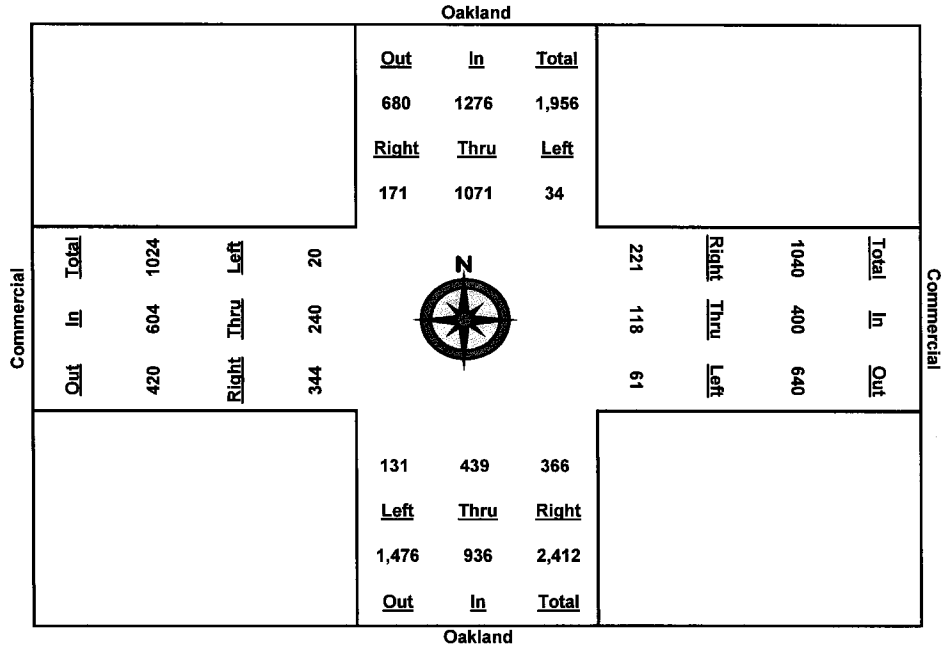
Date: 1/10/12
Counter: Steve and Jo
Intersection Name: Oakland and Commercial
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland North Approach				Commercial East Approach				Oakland South Approach				Commercial West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	33	210	6	249	43	40	18	101	88	55	26	169	86	66	8	160
4:30	68	464	15	547	105	73	36	214	204	177	82	463	167	106	15	288
4:45	104	683	26	813	172	112	57	341	302	284	112	698	249	142	27	418
5:00	144	931	36	1,111	218	142	73	433	390	383	138	911	316	195	35	546
5:15	195	1,212	44	1,451	297	174	92	563	483	509	182	1,174	404	248	40	692
5:30	247	1,455	51	1,753	348	213	105	666	588	612	211	1,411	509	328	42	879
5:45	275	1,754	60	2,089	393	230	118	741	668	723	243	1,634	593	382	47	1,022
6:00	313	1,942	68	2,323	481	251	138	870	749	821	271	1,841	665	425	53	1,143

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	144	931	36	1,111	218	142	73	433	390	383	138	911	316	195	35	546	3,001
4:15 - 5:15	162	1,002	38	1,202	254	134	74	462	395	454	156	1,005	318	182	32	532	3,201
4:30 - 5:30	179	991	36	1,206	243	140	69	452	384	435	129	948	342	222	27	591	3,197
4:45 - 5:45	171	1,071	34	1,276	221	118	61	400	366	439	131	936	344	240	20	604	3,216
5:00 - 6:00	169	1,011	32	1,212	263	109	65	437	359	438	133	930	349	230	18	597	3,176
Peak Volumes:	**171**	**1,071**	**34**	**1,276**	**221**	**118**	**61**	**400**	**366**	**439**	**131**	**936**	**344**	**240**	**20**	**604**	**3,216**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	131	439	366	34	1,071	171	20	240	344	61	118	221



AM Peak-Hour Volume Count Worksheet

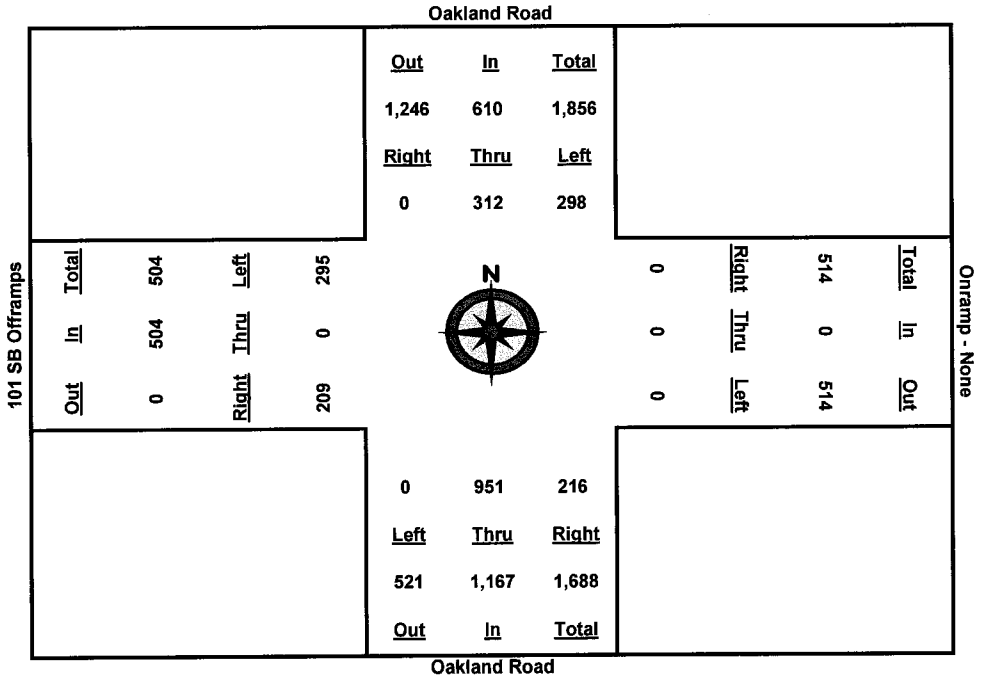
Date: 1/10/12
Counter: Kevin and Logan
Intersection Name: Oakland Road and SB 101 Ramps
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	Oakland Road				Onramp - None				Oakland Road				101 SB Offramps			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	62	49	111	0	0	0	0	38	212	0	250	71	0	73	144
7:30	0	121	94	215	0	0	0	0	103	403	0	506	140	1	145	286
7:45	0	194	163	357	0	0	0	0	168	636	0	804	202	1	211	414
8:00	0	269	251	520	0	0	0	0	223	882	0	1,105	258	1	300	559
8:15	0	347	313	660	0	0	0	0	271	1,134	0	1,405	297	1	367	665
8:30	0	433	392	825	0	0	0	0	319	1,354	0	1,673	349	1	440	790
8:45	0	505	462	967	0	0	0	0	360	1,545	0	1,905	390	1	492	883
9:00	0	586	510	1,096	0	0	0	0	407	1,751	0	2,158	444	1	552	997

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	0	269	251	520	0	0	0	0	223	882	0	1,105	258	1	300	559	2,184
7:15 - 8:15	0	285	264	549	0	0	0	0	233	922	0	1,155	226	1	294	521	2,225
7:30 - 8:30	0	312	298	610	0	0	0	0	216	951	0	1,167	209	0	295	504	2,281
7:45 - 8:45	0	311	299	610	0	0	0	0	192	909	0	1,101	188	0	281	469	2,180
8:00 - 9:00	0	317	259	576	0	0	0	0	184	869	0	1,053	186	0	252	438	2,067
Peak Volumes:	**0**	**312**	**298**	**610**	**0**	**0**	**0**	**0**	**216**	**951**	**0**	**1,167**	**209**	**0**	**295**	**504**	**2,281**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	0	951	216	298	312	0	295	0	209	0	0	0



AM Peak-Hour Volume Count Worksheet

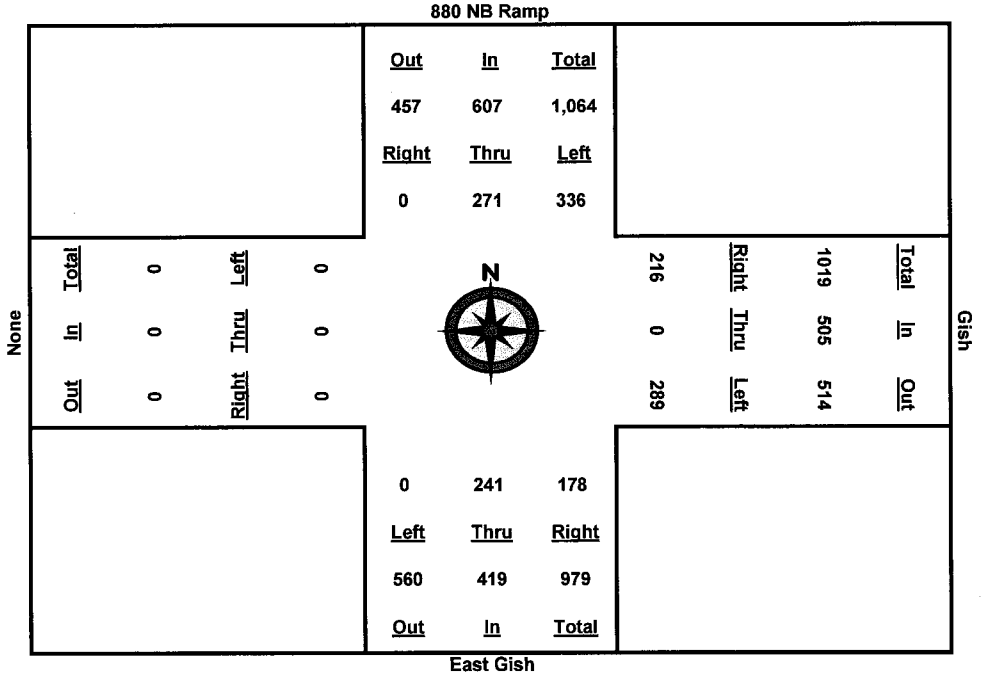
Date: 1/10/12
Counter: Stuart and Logan
Intersection Name: 880 North Ramp and Gish
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	880 NB Ramp				Gish				East Gish				None			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	55	70	125	15	0	33	48	36	59	0	95	0	0	0	0
7:30	0	119	136	255	40	0	82	122	75	101	0	176	0	0	0	0
7:45	0	204	234	438	71	0	140	211	109	156	0	265	0	0	0	0
8:00	0	261	324	585	145	0	204	349	166	223	0	389	0	0	0	0
8:15	0	332	404	736	205	0	284	489	205	276	0	481	0	0	0	0
8:30	0	390	472	862	256	0	371	627	253	342	0	595	0	0	0	0
8:45	0	439	530	969	288	0	447	735	290	414	0	704	0	0	0	0
9:00	0	492	568	1,060	310	0	510	820	316	462	0	778	0	0	0	0

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	0	261	324	585	145	0	204	349	166	223	0	389	0	0	0	0	1,323
7:15 - 8:15	0	277	334	611	190	0	251	441	169	217	0	386	0	0	0	0	1,438
7:30 - 8:30	0	271	336	607	216	0	289	505	178	241	0	419	0	0	0	0	1,531
7:45 - 8:45	0	235	296	531	217	0	307	524	181	258	0	439	0	0	0	0	1,494
8:00 - 9:00	0	231	244	475	165	0	306	471	150	239	0	389	0	0	0	0	1,335
Peak Volumes:	**0**	**271**	**336**	**607**	**216**	**0**	**289**	**505**	**178**	**241**	**0**	**419**	**0**	**0**	**0**	**0**	**1,531**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	0	241	178	336	271	0	0	0	0	289	0	216



PM Peak-Hour Volume Count Worksheet

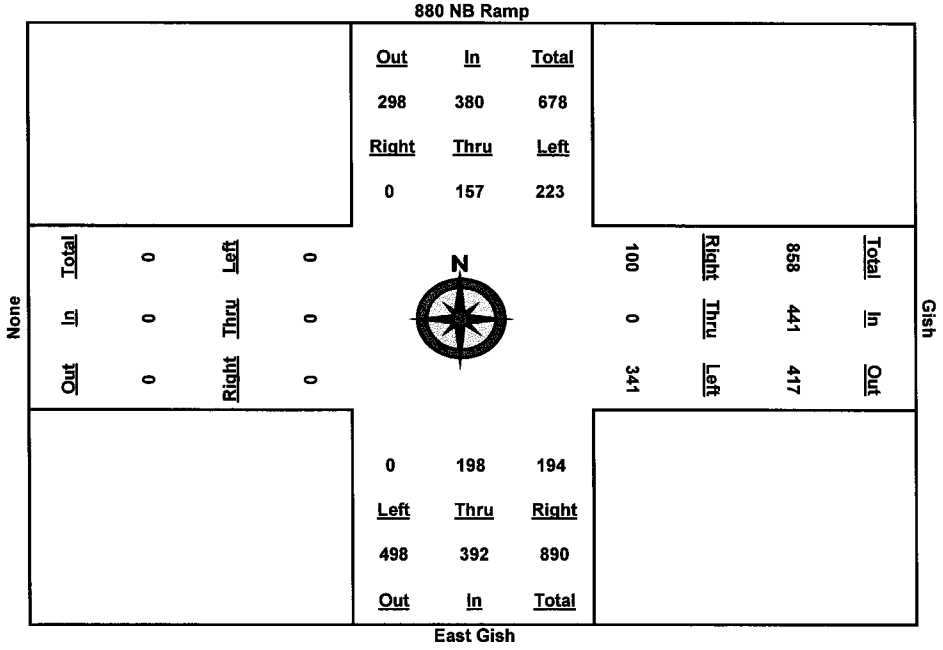
Date: 1/10/12
Counter: Stuart and Logan
Intersection Name: 880 North Ramp and Gish
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	880 NB Ramp				Gish				East Gish				None			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	43	71	114	32	0	78	110	49	51	0	100	0	0	0	0
4:30	0	88	138	226	55	0	166	221	93	77	0	170	0	0	0	0
4:45	0	118	191	309	78	0	244	322	140	128	0	268	0	0	0	0
5:00	0	167	248	415	102	0	320	422	189	185	0	374	0	0	0	0
5:15	0	200	294	494	132	0	419	551	243	249	0	492	0	0	0	0
5:30	0	228	355	583	149	0	502	651	283	302	0	585	0	0	0	0
5:45	0	245	409	654	175	0	584	759	327	333	0	660	0	0	0	0
6:00	0	265	451	716	205	0	654	859	357	356	0	713	0	0	0	0

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	0	167	248	415	102	0	320	422	189	185	0	374	0	0	0	0	1,211
4:15 - 5:15	0	157	223	380	100	0	341	441	194	198	0	392	0	0	0	0	1,213
4:30 - 5:30	0	140	217	357	94	0	336	430	190	225	0	415	0	0	0	0	1,202
4:45 - 5:45	0	127	218	345	97	0	340	437	187	205	0	392	0	0	0	0	1,174
5:00 - 6:00	0	98	203	301	103	0	334	437	168	171	0	339	0	0	0	0	1,077
Peak Volumes:	**0**	**157**	**223**	**380**	**100**	**0**	**341**	**441**	**194**	**198**	**0**	**392**	**0**	**0**	**0**	**0**	**1,213**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	0	198	194	223	157	0	0	0	0	341	0	100



AM Peak-Hour Volume Count Worksheet

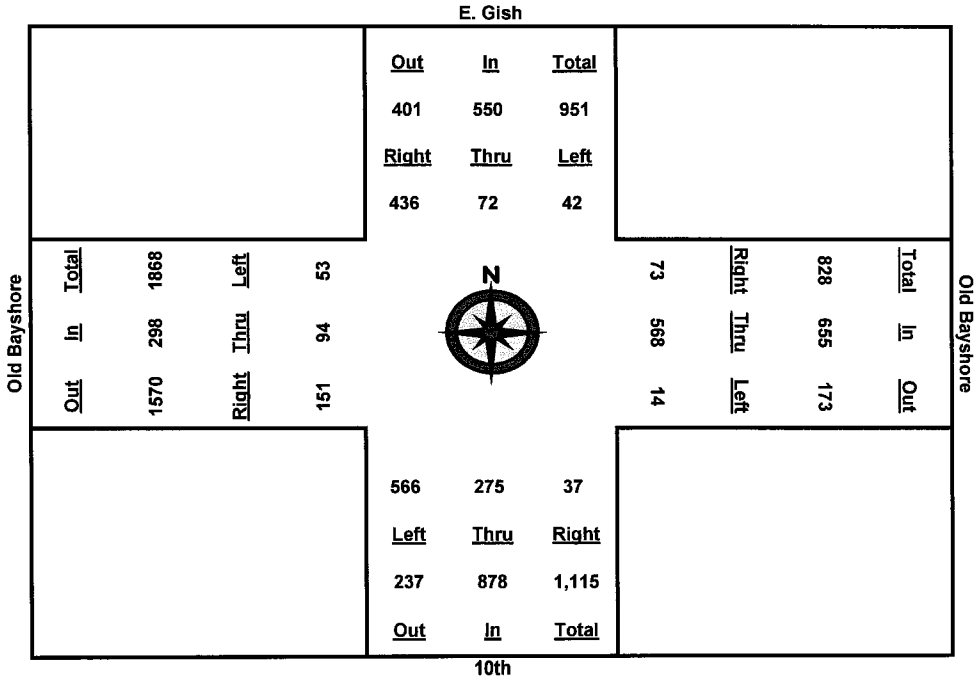
Date: 1/10/12
Counter: Patti and Ron
Intersection Name: 880 NB Ramps/10th and Old Bayshore (East)
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	E. Gish				Old Bayshore				10th				Old Bayshore			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	69	16	11	96	16	116	9	141	8	63	67	138	53	27	12	92
7:30	149	36	19	204	26	227	15	268	16	107	164	287	88	56	32	176
7:45	236	70	38	344	44	369	19	432	28	176	301	505	121	73	42	236
8:00	346	83	43	472	61	520	20	601	38	264	470	772	168	97	57	322
8:15	473	97	53	623	79	635	23	737	49	320	593	962	210	121	69	400
8:30	585	108	61	754	99	795	29	923	53	382	730	1,165	239	150	85	474
8:45	677	125	71	873	123	934	38	1,095	57	448	864	1,369	284	170	101	555
9:00	760	145	88	993	145	1,063	40	1,248	76	501	988	1,565	324	205	117	646

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	346	83	43	472	61	520	20	601	38	264	470	772	168	97	57	322	2,167
7:15 - 8:15	404	81	42	527	63	519	14	596	41	257	526	824	157	94	57	308	2,255
7:30 - 8:30	436	72	42	550	73	568	14	655	37	275	566	878	151	94	53	298	2,381
7:45 - 8:45	441	55	33	529	79	565	19	663	29	272	563	864	163	97	59	319	2,375
8:00 - 9:00	414	62	45	521	84	543	20	647	38	237	518	793	156	108	60	324	2,285
Peak Volumes:	**436**	**72**	**42**	**550**	**73**	**568**	**14**	**655**	**37**	**275**	**566**	**878**	**151**	**94**	**53**	**298**	**2,381**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	566	275	37	42	72	436	53	94	151	14	568	73



PM Peak-Hour Volume Count Worksheet

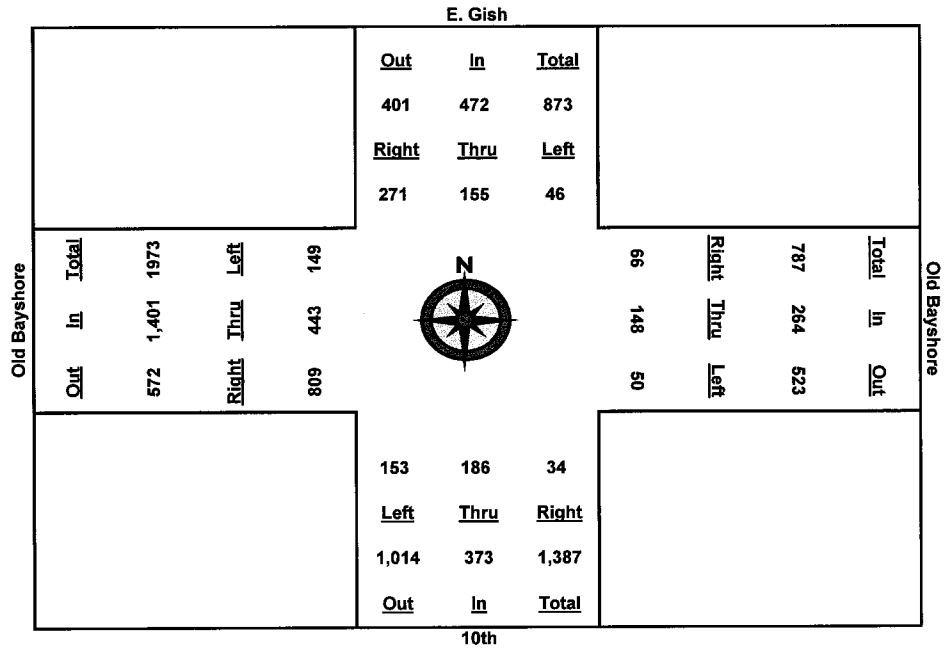
Date: 1/10/12
Counter: Patti and Ron
Intersection Name: 880 NB Ramps/10th and Old Bayshore (East)
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	E. Gish				Old Bayshore				10th				Old Bayshore			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	76	34	13	123	17	42	14	73	10	61	35	106	158	82	29	269
4:30	162	75	30	267	30	81	31	142	21	97	62	180	289	165	52	506
4:45	239	113	37	389	46	125	51	222	27	139	107	273	462	264	86	812
5:00	300	155	54	509	63	157	62	282	33	186	154	373	648	361	123	1,132
5:15	379	198	66	643	88	195	70	353	46	239	182	467	869	478	155	1,502
5:30	433	230	76	739	96	229	81	406	55	283	215	553	1,098	608	201	1,907
5:45	496	254	83	833	113	260	86	459	65	304	229	598	1,327	745	240	2,312
6:00	540	283	92	915	120	283	92	495	67	335	248	650	1,504	840	260	2,604

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	300	155	54	509	63	157	62	282	33	186	154	373	648	361	123	1,132	2,296
4:15 - 5:15	303	164	53	520	71	153	56	280	36	178	147	361	711	396	126	1,233	2,394
4:30 - 5:30	271	155	46	472	66	148	50	264	34	186	153	373	809	443	149	1,401	2,510
4:45 - 5:45	257	141	46	444	67	135	35	237	38	165	122	325	865	481	154	1,500	2,506
5:00 - 6:00	240	128	38	406	57	126	30	213	34	149	94	277	856	479	137	1,472	2,368
Peak Volumes:	**271**	**155**	**46**	**472**	**66**	**148**	**50**	**264**	**34**	**186**	**153**	**373**	**809**	**443**	**149**	**1,401**	**2,510**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	153	186	34	46	155	271	149	443	809	50	148	66



AM Peak-Hour Volume Count Worksheet

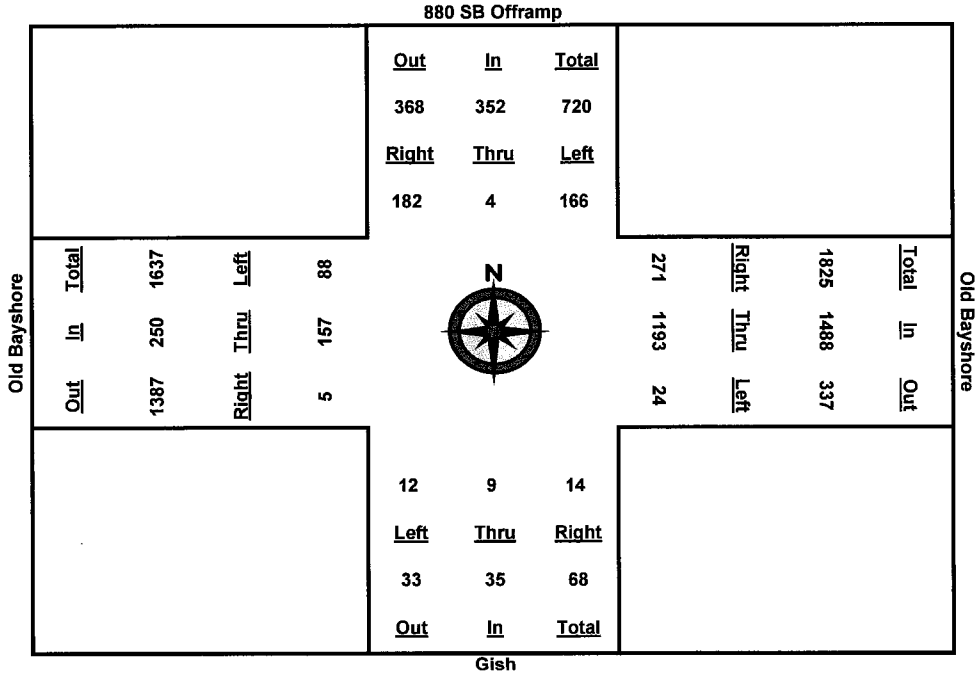
Date: 1/11/12
Counter: Patti and Ron
Intersection Name: 880 SB Ramps and Old Bayshore West
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	880 SB Offramp				Old Bayshore				Gish				Old Bayshore			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	26	2	35	63	48	183	2	233	5	0	1	6	4	36	28	68
7:30	76	3	80	159	123	436	4	563	7	3	1	11	6	63	47	116
7:45	112	6	128	246	194	693	6	893	12	5	1	18	8	96	76	180
8:00	151	8	180	339	279	1,032	10	1,321	19	6	3	28	9	131	95	235
8:15	188	8	218	414	344	1,342	18	1,704	22	6	5	33	9	170	115	294
8:30	238	10	260	508	406	1,604	21	2,031	22	7	6	35	10	202	136	348
8:45	294	10	294	598	465	1,886	30	2,381	26	14	13	53	13	253	164	430
9:00	324	13	320	657	525	2,140	37	2,702	31	16	15	62	18	285	199	502

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
7:00 - 8:00	151	8	180	339	279	1,032	10	1,321	19	6	3	28	9	131	95	235	1,923
7:15 - 8:15	162	6	183	351	296	1,159	16	1,471	17	6	4	27	5	134	87	226	2,075
7:30 - 8:30	162	7	180	349	283	1,168	17	1,468	15	4	5	24	4	139	89	232	2,073
7:45 - 8:45	182	4	166	352	271	1,193	24	1,488	14	9	12	35	5	157	88	250	2,125
8:00 - 9:00	173	5	140	318	246	1,108	27	1,381	12	10	12	34	9	154	104	267	2,000
Peak Volumes:	**182**	**4**	**166**	**352**	**271**	**1,193**	**24**	**1,488**	**14**	**9**	**12**	**35**	**5**	**157**	**88**	**250**	**2,125**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	12	9	14	166	4	182	88	157	5	24	1,193	271



PM Peak-Hour Volume Count Worksheet

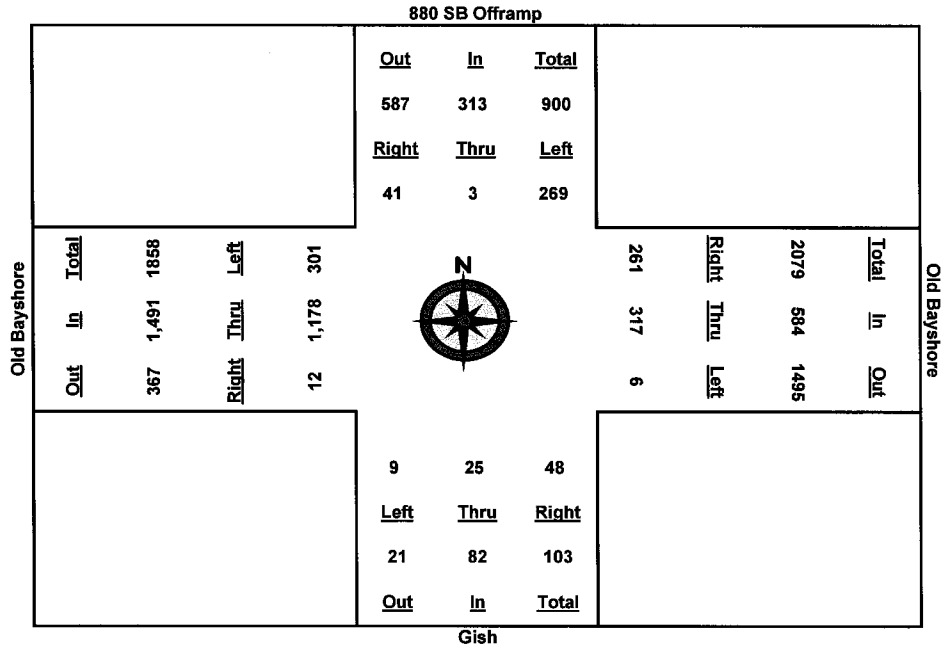
Date: 1/11/12
Counter: Patti and Ron
Intersection Name: 880 SB Ramps and Old Bayshore West
Weather: Clear San Jose 11RD21

AUTO-CENSUS
Traffic Monitoring and Analysis
870 Castlewood Dr. #1
Los Gatos, CA 95032
Phone 408-826-9673 Fax 408-877-1625

	880 SB Offramp				Old Bayshore				Gish				Old Bayshore			
	North Approach				East Approach				South Approach				West Approach			
Start Time	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	18	4	68	90	71	105	1	177	16	3	1	20	4	213	50	267
4:30	39	4	142	185	129	192	12	333	23	8	4	35	7	376	102	485
4:45	46	4	217	267	208	271	14	493	36	17	6	59	10	661	184	855
5:00	60	4	287	351	263	344	17	624	44	22	7	73	11	884	265	1,160
5:15	70	6	356	432	342	424	17	783	63	29	11	103	14	1,239	337	1,590
5:30	80	7	411	498	390	509	18	917	71	33	13	117	19	1,554	403	1,976
5:45	87	7	451	545	431	580	18	1,029	79	37	14	130	21	1,849	469	2,339
6:00	90	7	476	573	459	637	20	1,116	84	37	14	135	23	2,065	520	2,608

Peak Hour	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	PK Hour
4:00 - 5:00	60	4	287	351	263	344	17	624	44	22	7	73	11	884	265	1,160	2,208
4:15 - 5:15	52	2	288	342	271	319	16	606	47	26	10	83	10	1,026	287	1,323	2,354
4:30 - 5:30	41	3	269	313	261	317	6	584	48	25	9	82	12	1,178	301	1,491	2,470
4:45 - 5:45	41	3	234	278	223	309	4	536	43	20	8	71	11	1,188	285	1,484	2,369
5:00 - 6:00	30	3	189	222	196	293	3	492	40	15	7	62	12	1,181	255	1,448	2,224
Peak Volumes:	**41**	**3**	**269**	**313**	**261**	**317**	**6**	**584**	**48**	**25**	**9**	**82**	**12**	**1,178**	**301**	**1,491**	**2,470**

Cut and Paste	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	9	25	48	269	3	41	301	1,178	12	6	317	261



	Counter A						Counter B									
	Driveway 1		On-Street North Side		On-Street South Side		Driveway 2			Driveway 3		Total		Peak Hour	
Person A	Right-In	Left-In	In	Out	In	Out	Left Out	Right-out going straight WB toward 101/880	Right-out, then making u-turn to go EB toward Oakland Rd	In	Out	In	Out	In	Out
7:00	0	--	0	0	0	0	0	0	0	0	0	0	0	--	--
7:15	3	--	1	1	0	0	0	2	0	5	0	9	3	--	--
7:30	6	--	1	1	0	0	1	2	0	12	0	19	4	--	--
7:45	97	--	1	1	0	0	1	44	17	28	3	126	66	--	--
8:00	280	--	3	2	1	1	3	166	41	39	3	323	216	323	216
8:15	391	--	3	2	2	2	6	307	56	45	4	441	377	432	374
8:30	489	--	6	5	2	2	10	386	75	48	4	545	482	526	478
8:45	519	--	6	5	2	2	11	421	79	49	4	576	522	450	456
9:00	541	--	7	5	2	2	12	440	79	50	4	600	542	277	326
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--
2:15	5	2	0	0	0	0	1	3	0	4	1	11	5	--	--
2:30	24	3	0	0	0	0	2	13	0	8	2	35	17	--	--
2:45	69	4	0	0	1	1	2	13	0	9	3	83	19	--	--
3:00	129	5	1	0	1	1	4	45	12	13	3	149	65	149	65
3:15	203	5	1	0	1	1	9	103	35	17	5	227	153	216	148
3:30	257	7	2	1	3	2	11	163	60	20	13	289	250	254	233
3:45	268	13	2	1	3	3	13	185	66	21	14	307	282	224	263
4:00	272	13	2	1	3	4	16	198	71	22	25	312	315	163	250
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--
4:15	8	4	0	0	0	0	2	5	0	1	3	13	10	--	--
4:30	26	13	0	1	0	0	7	18	2	2	7	41	35	--	--
4:45	42	18	0	1	0	0	13	37	6	2	11	62	68	--	--
5:00	59	27	0	1	0	0	16	49	6	5	20	91	92	91	92
5:15	86	34	0	3	0	0	26	70	10	9	29	129	138	116	128
5:30	120	49	0	3	0	0	37	106	18	12	34	181	198	140	163
5:45	159	64	3	4	0	0	54	134	27	15	44	241	263	179	195
6:00	187	72	4	6	0	0	60	176	34	17	55	280	331	189	239

= peak-hour volumes

Appendix B

City of San Jose Approved Trips Inventory

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ NORTH SAN JOSE	0	0	0	6	1	11	13	16	1	0	60	5
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	0	0	6	0	0	0	1	0	0	1	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	24	0	0	0	5	0	0	43	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	0	0	8	0	0	0	0	0	0	6	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	0	0	1	0	0	0	0	0	0	1	0
TOTAL:	**0**	**0**	**0**	**45**	**1**	**11**	**13**	**22**	**1**	**0**	**111**	**5**

	LEFT	THRU	RIGHT
NORTH	45	1	11
EAST	0	111	5
SOUTH	0	0	0
WEST	13	22	1

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ NORTH SAN JOSE	0	0	0	39	0	13	35	99	1	0	13	23
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	0	0	1	0	0	0	0	0	0	5	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	44	0	0	0	9	0	0	22	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	0	0	14	0	0	0	0	0	0	3	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	0	0	2	0	0	0	0	0	0	0	0
TOTAL:	**0**	**0**	**0**	**100**	**0**	**13**	**35**	**108**	**1**	**0**	**43**	**23**

	LEFT	THRU	RIGHT
NORTH	100	0	13
EAST	0	43	23
SOUTH	0	0	0
WEST	35	108	1

Intersection of: GISH/OAKLAND

Traffix Node Number: 3554

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	5	0	0	5	0	0	0	0	0	0	0
H08-044 ASKARI SELF-STORAGE EAST SIDE OF OAKLAND ROAD, 350 FEET SOUTHERLY OF	0	1	0	0	1	0	0	0	0	0	0	0
NSJ NORTH SAN JOSE	22	75	0	0	4	2	12	0	2	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	1	0	0	6	0	0	0	0	0	0	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	48	0	0	25	0	0	0	0	0	0	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**22**	**130**	**0**	**0**	**41**	**2**	**12**	**0**	**2**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	41	2
EAST	0	0	0
SOUTH	22	130	0
WEST	12	0	2

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	5	0	0	5	0	0	0	0	0	0	0
H08-044 ASKARI SELF-STORAGE EAST SIDE OF OAKLAND ROAD, 350 FEET SOUTHERLY OF	0	2	0	0	2	0	0	0	1	0	0	0
NSJ NORTH SAN JOSE	0	6	0	0	120	27	7	0	1	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	5	0	0	1	0	0	0	0	0	0	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	25	0	0	46	0	0	0	0	0	0	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	**0**	**43**	**0**	**0**	**174**	**27**	**7**	**0**	**2**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	174	27
EAST	0	0	0
SOUTH	0	43	0
WEST	7	0	2

Intersection of: COMMERCIAL/OAKLAND

Traffix Node Number: 3421

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	73	0	0	17	0	0	0	0	0	0	0
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	20	0	5	0	0	2	0	0	24	2	0
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	46	179	42	6	71	18	4	17	19	108	68	22
H00-06-048 OAKLAND RD (W/S), 410 N/O BROKAW RD	0	14	0	0	2	0	0	0	0	0	0	0
H08-044 ASKARI SELF-STORAGE EAST SIDE OF OAKLAND ROAD, 350 FEET SOUTHERLY OF	0	1	0	0	1	0	0	0	0	0	0	0
NSJ NORTH SAN JOSE	21	77	13	0	0	0	0	0	0	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	1	0	36	3	3	0	0	3	2	6	1	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	33	27	92	12	13	0	0	12	8	201	35	20
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	0	28	0	15	15	0	0	0	0	32	0	28

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	6	0	0	3	0	0	0	0	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	1	0	0	0	0	0	0	0	0	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	0	24	2	0	0	0	0	0	46	0	4
TOTAL:	**101**	**426**	**207**	**43**	**125**	**18**	**6**	**32**	**29**	**417**	**106**	**74**

	LEFT	THRU	RIGHT
NORTH	43	125	18
EAST	417	106	74
SOUTH	101	426	207
WEST	6	32	29

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	9	0	0	72	0	0	0	0	0	0	0
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	24	0	5	0	0	2	0	0	27	2	0
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	14	43	35	1	80	11	3	25	34	38	11	6
H00-06-048 OAKLAND RD (W/S), 410 N/O BROKAW RD	0	3	0	0	13	0	0	0	0	0	0	0
H08-044 ASKARI SELF-STORAGE EAST SIDE OF OAKLAND ROAD, 350 FEET SOUTHERLY OF	0	2	0	0	2	1	1	0	0	0	0	0
NSJ NORTH SAN JOSE	0	5	4	11	92	1	0	8	13	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	4	3	6	1	1	0	0	0	0	35	4	2
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	17	14	167	22	23	0	0	21	15	104	18	11
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	0	15	0	27	27	0	0	0	0	17	0	15

Intersection of: COMMERCIAL/OAKLAND

Traffix Node Number: 3421

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	3	0	0	6	0	0	0	0	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	0	0	0	1	0	0	0	0	0	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	0	44	4	0	0	0	0	0	24	0	2
TOTAL:	**35**	**121**	**256**	**71**	**317**	**13**	**6**	**54**	**62**	**245**	**35**	**36**

	LEFT	THRU	RIGHT
NORTH	71	317	13
EAST	245	35	36
SOUTH	35	121	256
WEST	6	54	62

Intersection of: 101/OAKLAND (N)

Traffix Node Number: 3021

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	39	0	0	11	7	0	0	0	0	0	34
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	13	0	0	17	5	0	0	0	0	0	5
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	74	178	0	0	77	124	0	0	0	14	0	74
H00-06-048 OAKLAND RD (W/S), 410 N/O BROKAW RD	0	0	0	0	2	0	0	0	0	0	0	14
NSJ NORTH SAN JOSE	28	66	0	0	1	3	0	0	0	2	0	13
PDC03-056 MIXED-USE DEVELOPMENT N 7TH ST, E/O TAYLOR ST SPRR	11	1	0	0	2	0	0	0	0	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	3	28	0	0	7	3	0	0	0	16	0	29
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	135	120	0	0	87	135	0	0	0	32	0	56
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	111	28	0	0	15	32	0	0	0	0	0	0

Intersection of: 101/OAKLAND (N)

Traffix Node Number: 3021

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	10	6	0	0	3	0	0	0	0	4	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	1	1	0	0	0	0	0	0	0	1	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	24	0	0	0	46	0	0	0	0	0	0
TOTAL:	**373**	**504**	**0**	**0**	**222**	**355**	**0**	**0**	**0**	**69**	**0**	**225**

	LEFT	THRU	RIGHT
NORTH	0	222	355
EAST	69	0	225
SOUTH	373	504	0
WEST	0	0	0

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	5	0	0	44	28	0	0	0	0	0	4
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	17	0	0	19	6	0	0	0	0	0	5
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	20	65	0	0	93	42	0	0	0	11	0	27
H00-06-048 OAKLAND RD (W/S), 410 N/O BROKAW RD	0	0	0	0	13	0	0	0	0	0	0	3
NSJ NORTH SAN JOSE	4	12	0	0	88	40	0	0	0	3	0	7
PDC03-056 MIXED-USE DEVELOPMENT N 7TH ST, E/O TAYLOR ST SPRR	8	2	0	0	1	0	0	0	0	10	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	19	8	0	0	17	19	0	0	0	3	0	5
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	70	181	0	0	72	70	0	0	0	58	0	102
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	59	15	0	0	27	17	0	0	0	0	0	0

Intersection of: 101/OAKLAND (N)

Traffix Node Number: 3021

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	6	3	0	0	6	0	0	0	0	8	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	1	0	0	0	1	0	0	0	0	1	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	44	0	0	0	24	0	0	0	0	0	0
TOTAL:	**187**	**352**	**0**	**0**	**381**	**246**	**0**	**0**	**0**	**94**	**0**	**153**

	LEFT	THRU	RIGHT
NORTH	0	381	246
EAST	94	0	153
SOUTH	187	352	0
WEST	0	0	0

AM APPROVED TRIPS

01/17/2012

Intersection of: 101/OAKLAND (S)

Traffix Node Number: 3022

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	11	0	8	3	0	28	0	0	0	0	0
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	8	0	5	12	0	0	5	0	0	0	0
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	0	40	5	8	7	0	14	0	9	0	0	0
NSJ NORTH SAN JOSE	0	84	12	2	1	0	11	0	8	0	0	0
PDC03-056 MIXED-USE DEVELOPMENT N 7TH ST, E/O TAYLOR ST SPRR	0	12	12	0	12	0	0	12	9	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	3	4	3	21	0	28	0	16	0	0	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	163	97	65	53	0	92	0	55	0	0	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	0	139	0	0	15	0	0	0	61	0	0	0
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	17	8	0	8	0	0	0	9	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	2	1	0	1	0	0	0	1	0	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	0	0	0	0	0	24	0	0	0	0	0
TOTAL:	**0**	**479**	**139**	**91**	**133**	**0**	**197**	**17**	**168**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	91	133	0
EAST	0	0	0
SOUTH	0	479	139
WEST	197	17	168

Intersection of: 101/OAKLAND (S)

Traffix Node Number: 3022

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
C01-04-050 MARKOVITZ & FOX OAKLAND RD (W/S), S/O BROKAW RD	0	1	0	33	11	0	3	0	0	0	0	0
CP99-057 NELLA OIL COMMERCIAL ST & OLD OAKLAND RD (SE/C)	0	11	0	5	14	0	0	6	0	0	0	0
DOWNTOWN DOWNTOWN STRATEGY PLAN 2000 DOWNTOWN CORE	0	65	49	84	82	0	73	1	71	0	0	0
NSJ NORTH SAN JOSE	0	8	6	65	64	0	21	0	20	0	0	0
PDC03-056 MIXED-USE DEVELOPMENT N 7TH ST, E/O TAYLOR ST SPRR	0	8	10	0	11	0	0	0	10	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	22	24	16	4	0	5	0	3	0	0	0
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	85	50	34	96	0	166	0	99	0	0	0
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC07-015 RES KING AND DOBBIN NE/C OF KING AND DOBBIN	0	73	0	0	27	0	0	0	113	0	0	0
PDC07-015 RET KING AND DOBBIN NE/C OF KING AND DOBBIN	0	0	0	0	0	0	0	0	0	0	0	0

Intersection of: 101/OAKLAND (S)

Traffix Node Number: 3022

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	0	9	4	0	14	0	0	0	16	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	0	1	1	0	2	0	0	0	2	0	0	0
PRE05-430 COMM PEPPER LANE S/W CORNER BERRYESSA RD & JACKSON AVE	0	0	0	0	0	0	0	0	0	0	0	0
PRE05-430 RES PEPPER LANE SW/C OF BERRYESSA AND JACKSON	0	0	0	0	0	0	44	0	0	0	0	0
TOTAL:	**0**	**283**	**144**	**237**	**325**	**0**	**312**	**7**	**334**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	237	325	0
EAST	0	0	0
SOUTH	0	283	144
WEST	312	7	334

AM APPROVED TRIPS

01/17/2012

Intersection of: BAYSHORE/TENTH

Traffix Node Number: 3289

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ NORTH SAN JOSE	161	53	2	0	0	0	0	0	0	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	0	0	0	0	0	0	0	4	2	0	1	1
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	4	15	0	0	0	0	0	20	9	0	39	30
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	12	14	0	0	3	0	0	0	8	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	1	2	0	0	0	0	0	0	1	0	0	0
TOTAL:	**178**	**84**	**2**	**0**	**3**	**0**	**0**	**24**	**20**	**0**	**40**	**31**

	LEFT	THRU	RIGHT
NORTH	0	3	0
EAST	0	40	31
SOUTH	178	84	2
WEST	0	24	20

Permit No. / Description / Location	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
NSJ NORTH SAN JOSE	51	43	11	0	0	0	0	0	0	0	0	0
PDC03-108 OFF BERRYESSA FLEA MKT (OFFICE) BOTH SIDES OF BERRYESSA RD WEST OF UNION PACIFIC	1	2	0	0	0	0	0	1	0	0	5	3
PDC03-108 RES BERRYESSA FLEA MKT (RESIDENTIAL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	2	8	0	0	0	0	0	36	17	0	20	15
PDC03-108 RET BERRYESSA FLEA MKT (RETAIL) BOTH SIDES OF BERRYESSA, WEST OF UNION PACIFIC RR	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036LW CANNARY PARK NW CORNER E. TENTH ST.	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036RES CANNERY PARK NW CORNER E. TENTH	6	7	0	0	6	0	0	0	8	0	0	0
PDC08-036REST CANNERY PARK NW CORNER OF E. TENTH	0	0	0	0	0	0	0	0	0	0	0	0
PDC08-036SEN CANNERY PARK NW CORNER E. 10TH ST.	1	1	0	0	1	0	0	0	2	0	0	0
TOTAL:	**61**	**61**	**11**	**0**	**7**	**0**	**0**	**37**	**27**	**0**	**25**	**18**

	LEFT	THRU	RIGHT
NORTH	0	7	0
EAST	0	25	18
SOUTH	61	61	11
WEST	0	37	27

Appendix C

Volume Summary Tables

Challenger School Expansion
Gish Road

Intersection Number: 1
Traffix Node Number: 3866
Intersection Name: Oakland Rd & Berger Dr
Peak Hour: AM
Count Date: 01/10/12
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	96	677	17	49	27	57	23	644	168	139	2	177	2076
Approved Project Trips													
CSJ ATI	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-26	0	0	0	0	0	-13	0	-11	0	-14	-64
Total Approved Trips	0	-26	0	0	0	0	0	-13	0	-11	0	-14	-64
Background Conditions	96	651	17	49	27	57	23	631	168	128	2	163	2012
check	96	651	17	49	27	57	23	631	168	128	2	163	
Proposed Project Trips													
Project Option 1	0	49	0	0	0	0	0	25	0	22	0	26	122
Exist + Project Conditions	96	700	17	49	27	57	23	656	168	150	2	189	2134
check	96	700	17	49	27	57	23	656	168	150	2	189	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	96	700	17	49	27	57	23	656	168	150	2	189	2134
check	96	700	17	49	27	57	23	656	168	150	2	189	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Conditions - No Project	96	651	17	49	27	57	23	631	168	128	2	163	2012
check	96	651	17	49	27	57	23	631	168	128	2	163	
Cumulative Conditions - With Project	96	700	17	49	27	57	23	656	168	150	2	189	2134
check	96	700	17	49	27	57	23	656	168	150	2	189	

Challenger School Expansion
Gish Road

Intersection Number: 2
Traffix Node Number: 3554
Intersection Name: Oakland Rd & Gish Rd
Peak Hour: AM
Count Date: 01/10/12
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	365	471	0	0	0	0	0	683	292	79	0	86	1976
Approved Project Trips													
CSJ ATI	2	41	0	0	0	0	0	130	22	2	0	12	209
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	-37	0	0	0	0	0	0	0	-14	-5	0	-13	-69
Total Approved Trips	-35	41	0	0	0	0	0	130	8	-3	0	-1	140
Background Conditions	330	512	0	0	0	0	0	813	300	76	0	85	2116
check	330	512	0	0	0	0	0	813	300	76	0	85	
Proposed Project Trips													
Project Option 1	71	0	0	0	0	0	0	0	27	9	0	25	132
Exist + Project Conditions	399	471	0	0	0	0	0	683	305	83	0	98	2039
check	399	471	0	0	0	0	0	683	305	83	0	98	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	401	512	0	0	0	0	0	813	327	85	0	110	2248
check	401	512	0	0	0	0	0	813	327	85	0	110	
Cumlative Project Trips													
NSJ Phase 2	2	4	0	0	0	0	0	75	22	2	0	12	117
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	2	4	0	0	0	0	0	75	22	2	0	12	117
Cumulative Conditions - No Project	332	516	0	0	0	0	0	888	322	78	0	97	2233
check	332	516	0	0	0	0	0	888	322	78	0	97	
Cumulative Conditions - With Project	403	516	0	0	0	0	0	888	349	87	0	122	2365
check	403	516	0	0	0	0	0	888	349	87	0	122	

Challenger School Expansion
Gish Road

Intersection Number:	3		
Traffix Node Number:	3421		
Intersection Name:	Oakland Rd	& Commercial St	
Peak Hour:	AM		Date of Analysis: 01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000		Future Growth % Per Year: 0.000
(SJ) Number of Months:	0.0		Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	189	451	689	32	655	93	130	790	198	89	39	22	3377
Approved Project Trips													
CSJ ATI	18	125	43	74	106	417	207	426	101	29	32	6	1584
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-3	-2	-5	0	0	0	-9	0	-2	-1	0	-22
Total Approved Trips	18	122	41	69	106	417	207	417	101	27	31	6	1562
Background Conditions	207	573	730	101	761	510	337	1207	299	116	70	28	4939
check	207	573	730	101	761	510	337	1207	299	116	70	28	
Proposed Project Trips													
Project Option 1	0	6	3	10	0	0	0	17	0	4	3	0	43
Exist + Project Conditions	189	454	690	37	655	93	130	798	198	91	41	22	3398
check	189	454	690	37	655	93	130	798	198	91	41	22	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	207	579	733	111	761	510	337	1224	299	120	73	28	4982
check	207	579	733	111	761	510	337	1224	299	120	73	28	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	13	77	21	0	0	0	111
Downtown Strategic Plan Phase 2	18	71	6	22	68	108	42	179	46	19	17	4	600
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	18	71	6	22	68	108	55	256	67	19	17	4	711
Cumulative Conditions - No Project	225	644	736	123	829	618	392	1463	366	135	87	32	5650
check	225	644	736	123	829	618	392	1463	366	135	87	32	
Cumulative Conditions - With Project	225	650	739	133	829	618	392	1480	366	139	90	32	5693
check	225	650	739	133	829	618	392	1480	366	139	90	32	

Challenger School Expansion
Gish Road

Intersection Number: 4
Traffix Node Number: 3021
Intersection Name: Oakland Rd & US 101 NB Ramps
Peak Hour: AM
Count Date: 10/07/10
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	813	552	0	435	0	117	0	802	522	0	0	0	3241
Approved Project Trips													
CSJ ATI	355	222	0	225	0	69	0	504	373	0	0	0	1748
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	-1	-4	0	-7	0	0	0	-2	0	0	0	0	-14
Total Approved Trips	354	218	0	218	0	69	0	502	373	0	0	0	1734
Background Conditions	1167	770	0	653	0	186	0	1304	895	0	0	0	4975
check	1167	770	0	653	0	186	0	1304	895	0	0	0	
Proposed Project Trips													
Project Option 1	2	8	0	14	0	0	0	3	0	0	0	0	27
Exist + Project Conditions	814	556	0	442	0	117	0	803	522	0	0	0	3254
check	814	556	0	442	0	117	0	803	522	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	1169	778	0	667	0	186	0	1307	895	0	0	0	5002
check	1169	778	0	667	0	186	0	1307	895	0	0	0	
Cumlative Project Trips													
NSJ Phase 2	3	1	0	13	0	2	0	66	28	0	0	0	113
Downtown Strategic Plan Phase 2	124	77	0	74	0	14	0	178	74	0	0	0	541
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	127	78	0	87	0	16	0	244	102	0	0	0	654
Cumulative Conditions - No Project	1294	848	0	740	0	202	0	1548	997	0	0	0	5629
check	1294	848	0	740	0	202	0	1548	997	0	0	0	
Cumulative Conditions - With Project	1296	856	0	754	0	202	0	1551	997	0	0	0	5656
check	1296	856	0	754	0	202	0	1551	997	0	0	0	

Challenger School Expansion
Gish Road

Intersection Number:	5		
Traffix Node Number:	3022		
Intersection Name:	Oakland Rd	& US 101 SB Ramps	
Peak Hour:	AM		Date of Analysis: 01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000		Future Growth % Per Year: 0.000
(SJ) Number of Months:	0.0		Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	312	298	0	0	0	216	951	0	209	0	295	2281
Approved Project Trips													
CSJ ATI	0	133	91	0	0	0	139	479	0	168	17	197	1224
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-1	-3	0	0	0	0	-1	0	0	0	-1	-6
Total Approved Trips	0	132	88	0	0	0	139	478	0	168	17	196	1218
Background Conditions	0	444	386	0	0	0	355	1429	0	377	17	491	3499
check	0	444	386	0	0	0	355	1429	0	377	17	491	
Proposed Project Trips													
Project Option 1	0	2	6	0	0	0	0	1	0	0	0	2	11
Exist + Project Conditions	0	313	301	0	0	0	216	951	0	209	0	296	2286
check	0	313	301	0	0	0	216	951	0	209	0	296	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	0	446	392	0	0	0	355	1430	0	377	17	493	3510
check	0	446	392	0	0	0	355	1430	0	377	17	493	
Cumlative Project Trips													
NSJ Phase 2	0	1	2	0	0	0	12	84	0	8	0	11	118
Downtown Strategic Plan Phase 2	0	7	8	0	0	0	5	40	0	9	0	14	83
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	8	10	0	0	0	17	124	0	17	0	25	201
Cumulative Conditions - No Project	0	452	396	0	0	0	372	1553	0	394	17	516	3700
check	0	452	396	0	0	0	372	1553	0	394	17	516	
Cumulative Conditions - With Project	0	454	402	0	0	0	372	1554	0	394	17	518	3711
check	0	454	402	0	0	0	372	1554	0	394	17	518	

Challenger School Expansion
Gish Road

Intersection Number: 6
Traffix Node Number: 3867
Intersection Name: I-880 NB Ramps & Gish Rd
Peak Hour: AM
Count Date: 01/10/12
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	271	336	216	0	289	178	241	0	0	0	0	1531
Approved Project Trips													
CSJ ATI	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	0	-2	-3	0	-12	-9	0	0	0	0	0	-26
Total Approved Trips	0	0	-2	-3	0	-12	-9	0	0	0	0	0	-26
Background Conditions	0	271	334	213	0	277	169	241	0	0	0	0	1505
check	0	271	334	213	0	277	169	241	0	0	0	0	
Proposed Project Trips													
Project Option 1	0	0	3	6	0	23	19	0	0	0	0	0	51
Exist + Project Conditions	0	271	337	219	0	300	188	241	0	0	0	0	1556
check	0	271	337	219	0	300	188	241	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	0	271	337	219	0	300	188	241	0	0	0	0	1556
check	0	271	337	219	0	300	188	241	0	0	0	0	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Conditions - No Project	0	271	334	213	0	277	169	241	0	0	0	0	1505
check	0	271	334	213	0	277	169	241	0	0	0	0	
Cumulative Conditions - With Project	0	271	337	219	0	300	188	241	0	0	0	0	1556
check	0	271	337	219	0	300	188	241	0	0	0	0	

Challenger School Expansion
Gish Road

Intersection Number:	7		
Traffix Node Number:	3289		
Intersection Name:	I-880 NB Ramps	& Old Bayshore (East)	
Peak Hour:	AM		Date of Analysis: 01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000		Future Growth % Per Year: 0.000
(SJ) Number of Months:	0.0		Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	436	72	42	73	568	14	37	275	566	151	94	53	2381
Approved Project Trips													
CSJ ATI	0	3	0	31	40	0	2	84	178	20	24	0	382
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	-9	0	-3	0	0	0	0	0	0	0	0	-9	-21
Total Approved Trips	-9	3	-3	31	40	0	2	84	178	20	24	-9	361
Background Conditions	427	75	39	104	608	14	39	359	744	171	118	44	2742
check	427	75	39	104	608	14	39	359	744	171	118	44	
Proposed Project Trips													
Project Option 1	15	1	7	0	0	0	0	1	0	0	0	18	42
Exist + Project Conditions	442	73	46	73	568	14	37	276	566	151	94	62	2402
check	442	73	46	73	568	14	37	276	566	151	94	62	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	442	76	46	104	608	14	39	360	744	171	118	62	2784
check	442	76	46	104	608	14	39	360	744	171	118	62	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	2	53	161	0	0	0	216
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	2	53	161	0	0	0	216
Cumulative Conditions - No Project	427	75	39	104	608	14	41	412	905	171	118	44	2958
check	427	75	39	104	608	14	41	412	905	171	118	44	
Cumulative Conditions - With Project	442	76	46	104	608	14	41	413	905	171	118	62	3000
check	442	76	46	104	608	14	41	413	905	171	118	62	

Challenger School Expansion
Gish Road

Intersection Number: 8
Traffix Node Number: 3288
Intersection Name: I-880 SB Ramps & Old Bayshore (West)
Peak Hour: AM
Count Date: 01/11/12
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	182	4	166	271	1193	24	14	9	12	5	157	88	2125
Approved Project Trips													
CSJ ATI	11	1	45	5	111	0	0	0	0	1	22	13	209
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	0	-9	-5	-4	0	0	0	0	0	0	0	-18
Total Approved Trips	11	1	36	0	107	0	0	0	0	1	22	13	191
Background Conditions	193	5	202	271	1300	24	14	9	12	6	179	101	2316
check	193	5	202	271	1300	24	14	9	12	6	179	101	
Proposed Project Trips													
Project Option 1	0	0	17	9	6	0	0	0	0	0	1	0	33
Exist + Project Conditions	182	4	174	275	1195	24	14	9	12	5	158	88	2140
check	182	4	174	275	1195	24	14	9	12	5	158	88	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	193	5	219	280	1306	24	14	9	12	6	180	101	2349
check	193	5	219	280	1306	24	14	9	12	6	180	101	
Cumlative Project Trips													
NSJ Phase 2	11	1	6	5	60	0	0	0	0	1	16	13	113
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	11	1	6	5	60	0	0	0	0	1	16	13	113
Cumulative Conditions - No Project	204	6	208	276	1360	24	14	9	12	7	195	114	2429
check	204	6	208	276	1360	24	14	9	12	7	195	114	
Cumulative Conditions - With Project	204	6	225	285	1366	24	14	9	12	7	196	114	2462
check	204	6	225	285	1366	24	14	9	12	7	196	114	

Challenger School Expansion
Gish Road

Intersection Number:	1		
Traffix Node Number:	3866		
Intersection Name:	Oakland Rd	& Berger Dr	
Peak Hour:	PM		Date of Analysis: 01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000		Future Growth % Per Year: 0.000
(SJ) Number of Months:	0.0		Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	21	893	30	14	11	50	53	477	28	85	9	160	1831
Approved Project Trips													
CSJ ATI	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-10	0	0	0	0	0	-6	0	-3	0	-6	-25
Total Approved Trips	0	-10	0	0	0	0	0	-6	0	-3	0	-6	-25
Background Conditions	21	883	30	14	11	50	53	471	28	82	9	154	1806
check	21	883	30	14	11	50	53	471	28	82	9	154	
Proposed Project Trips													
Project Option 1	0	20	0	0	0	0	0	11	0	8	0	12	51
Exist + Project Conditions	21	903	30	14	11	50	53	482	28	90	9	166	1857
check	21	903	30	14	11	50	53	482	28	90	9	166	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	21	903	30	14	11	50	53	482	28	90	9	166	1857
check	21	903	30	14	11	50	53	482	28	90	9	166	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Conditions - No Project	21	883	30	14	11	50	53	471	28	82	9	154	1806
check	21	883	30	14	11	50	53	471	28	82	9	154	
Cumulative Conditions - With Project	21	903	30	14	11	50	53	482	28	90	9	166	1857
check	21	903	30	14	11	50	53	482	28	90	9	166	

Challenger School Expansion
Gish Road

Intersection Number:	2		
Traffix Node Number:	3554		
Intersection Name:	Oakland Rd	& Gish Rd	
Peak Hour:	PM	Date of Analysis:	01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000	Future Growth % Per Year:	0.000
(SJ) Number of Months:	0.0	Number of Years to Buildout:	0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	174	934	0	0	0	0	0	398	68	176	0	183	1933
Approved Project Trips													
CSJ ATI	27	174	0	0	0	0	0	43	0	2	0	7	253
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	-13	0	0	0	0	0	0	0	-5	-3	0	-6	-27
Total Approved Trips	14	174	0	0	0	0	0	43	-5	-1	0	1	226
Background Conditions	188	1108	0	0	0	0	0	441	63	175	0	184	2159
check	188	1108	0	0	0	0	0	441	63	175	0	184	
Proposed Project Trips													
Project Option 1	28	0	0	0	0	0	0	0	7	6	0	11	52
Exist + Project Conditions	189	934	0	0	0	0	0	398	70	179	0	188	1958
check	189	934	0	0	0	0	0	398	70	179	0	188	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	216	1108	0	0	0	0	0	441	70	181	0	195	2211
check	216	1108	0	0	0	0	0	441	70	181	0	195	
Cumlative Project Trips													
NSJ Phase 2	27	120	0	0	0	0	0	6	0	1	0	7	161
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	27	120	0	0	0	0	0	6	0	1	0	7	161
Cumulative Conditions - No Project	215	1228	0	0	0	0	0	447	63	176	0	191	2320
check	215	1228	0	0	0	0	0	447	63	176	0	191	
Cumulative Conditions - With Project	243	1228	0	0	0	0	0	447	70	182	0	202	2372
check	243	1228	0	0	0	0	0	447	70	182	0	202	

Challenger School Expansion
Gish Road

Intersection Number:	3		
Traffix Node Number:	3421		
Intersection Name:	Oakland Rd	& Commercial St	
Peak Hour:	PM	Date of Analysis:	01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000	Future Growth % Per Year:	0.000
(SJ) Number of Months:	0.0	Number of Years to Buildout:	0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	171	1071	34	221	118	61	366	439	131	344	240	20	3216
Approved Project Trips													
CSJ ATI	13	317	71	36	35	245	256	121	35	62	54	6	1251
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-2	-1	-1	0	0	0	-4	0	-1	-1	0	-10
Total Approved Trips	13	315	70	35	35	245	256	117	35	61	53	6	1241
Background Conditions	184	1386	104	256	153	306	622	556	166	405	293	26	4457
check	184	1386	104	256	153	306	622	556	166	405	293	26	
Proposed Project Trips													
Project Option 1	0	3	3	2	0	0	0	5	0	4	2	0	19
Exist + Project Conditions	171	1072	36	222	118	61	366	440	131	347	241	20	3225
check	171	1072	36	222	118	61	366	440	131	347	241	20	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	184	1389	107	258	153	306	622	561	166	409	295	26	4476
check	184	1389	107	258	153	306	622	561	166	409	295	26	
Cumlative Project Trips													
NSJ Phase 2	1	92	11	0	0	0	4	5	0	13	8	0	134
Downtown Strategic Plan Phase 2	11	80	1	6	11	38	35	43	14	34	25	3	301
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	12	172	12	6	11	38	39	48	14	47	33	3	435
Cumulative Conditions - No Project	196	1558	116	262	164	344	661	604	180	452	326	29	4892
check	196	1558	116	262	164	344	661	604	180	452	326	29	
Cumulative Conditions - With Project	196	1561	119	264	164	344	661	609	180	456	328	29	4911
check	196	1561	119	264	164	344	661	609	180	456	328	29	

Challenger School Expansion
Gish Road

Intersection Number:	4		
Traffix Node Number:	3021		
Intersection Name:	Oakland Rd	& US 101 NB Ramps	
Peak Hour:	PM		Date of Analysis: 01/20/12
Count Date:	10/07/10		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000		Future Growth % Per Year: 0.000
(SJ) Number of Months:	0.0		Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	397	1434	0	314	0	205	0	778	300	0	0	0	3428
Approved Project Trips													
CSJ ATI	246	381	0	153	0	94	0	352	187	0	0	0	1413
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	-3	0	-1	0	0	0	-3	0	0	0	0	-7
Total Approved Trips	246	378	0	152	0	94	0	349	187	0	0	0	1406
Background Conditions	643	1812	0	466	0	299	0	1127	487	0	0	0	4834
check	643	1812	0	466	0	299	0	1127	487	0	0	0	
Proposed Project Trips													
Project Option 1	0	7	0	2	0	0	0	3	0	0	0	0	12
Exist + Project Conditions	397	1438	0	315	0	205	0	778	300	0	0	0	3433
check	397	1438	0	315	0	205	0	778	300	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	643	1819	0	468	0	299	0	1130	487	0	0	0	4846
check	643	1819	0	468	0	299	0	1130	487	0	0	0	
Cumlative Project Trips													
NSJ Phase 2	40	88	0	7	0	3	0	12	4	0	0	0	154
Downtown Strategic Plan Phase 2	42	93	0	27	0	11	0	65	20	0	0	0	258
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	82	181	0	34	0	14	0	77	24	0	0	0	412
Cumulative Conditions - No Project	725	1993	0	500	0	313	0	1204	511	0	0	0	5246
check	725	1993	0	500	0	313	0	1204	511	0	0	0	
Cumulative Conditions - With Project	725	2000	0	502	0	313	0	1207	511	0	0	0	5258
check	725	2000	0	502	0	313	0	1207	511	0	0	0	

Challenger School Expansion
Gish Road

Intersection Number:	5		
Traffix Node Number:	3022		
Intersection Name:	Oakland Rd	& US 101 SB Ramps	
Peak Hour:	PM	Date of Analysis:	01/20/12
Count Date:	10/07/10		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000	Future Growth % Per Year:	0.000
(SJ) Number of Months:	0.0	Number of Years to Buildout:	0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	737	877	0	0	0	346	516	0	566	14	573	3629
Approved Project Trips													
CSJ ATI	0	325	237	0	0	0	144	283	0	334	7	312	1642
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	0	-3	0	0	0	0	-1	0	0	0	-2	-6
Total Approved Trips	0	325	234	0	0	0	144	282	0	334	7	310	1636
Background Conditions	0	1062	1111	0	0	0	490	798	0	900	21	883	5265
check	0	1062	1111	0	0	0	490	798	0	900	21	883	
Proposed Project Trips													
Project Option 1	0	1	6	0	0	0	0	1	0	0	0	2	10
Exist + Project Conditions	0	738	880	0	0	0	346	516	0	566	14	573	3633
check	0	738	880	0	0	0	346	516	0	566	14	573	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	0	1063	1117	0	0	0	490	799	0	900	21	885	5275
check	0	1063	1117	0	0	0	490	799	0	900	21	885	
Cumlative Project Trips													
NSJ Phase 2	0	64	65	0	0	0	6	8	0	20	0	21	184
Downtown Strategic Plan Phase 2	0	82	84	0	0	0	49	65	0	71	1	73	425
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	146	149	0	0	0	55	73	0	91	1	94	609
Cumulative Conditions - No Project	0	1208	1260	0	0	0	545	871	0	991	22	977	5874
check	0	1208	1260	0	0	0	545	871	0	991	22	977	
Cumulative Conditions - With Project	0	1209	1266	0	0	0	545	872	0	991	22	979	5884
check	0	1209	1266	0	0	0	545	872	0	991	22	979	

Challenger School Expansion
Gish Road

Intersection Number:	6		
Traffix Node Number:	3867		
Intersection Name:	I-880 NB Ramps	& Gish Rd	
Peak Hour:	PM	Date of Analysis:	01/20/12
Count Date:	01/10/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000	Future Growth % Per Year:	0.000
(SJ) Number of Months:	0.0	Number of Years to Buildout:	0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	0	157	223	100	0	341	194	198	0	0	0	0	1213
Approved Project Trips													
CSJ ATI	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	0	-1	-4	0	-4	-2	0	0	0	0	0	-11
Total Approved Trips	0	0	-1	-4	0	-4	-2	0	0	0	0	0	-11
Background Conditions	0	157	222	96	0	337	192	198	0	0	0	0	1202
check	0	157	222	96	0	337	192	198	0	0	0	0	
Proposed Project Trips													
Project Option 1	0	0	4	8	0	8	4	0	0	0	0	0	24
Exist + Project Conditions	0	157	226	104	0	345	196	198	0	0	0	0	1226
check	0	157	226	104	0	345	196	198	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	0	157	226	104	0	345	196	198	0	0	0	0	1226
check	0	157	226	104	0	345	196	198	0	0	0	0	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Conditions - No Project	0	157	222	96	0	337	192	198	0	0	0	0	1202
check	0	157	222	96	0	337	192	198	0	0	0	0	
Cumulative Conditions - With Project	0	157	226	104	0	345	196	198	0	0	0	0	1226
check	0	157	226	104	0	345	196	198	0	0	0	0	

Challenger School Expansion
Gish Road

Intersection Number: 7
Traffix Node Number: 3289
Intersection Name: I-880 NB Ramps & Old Bayshore (East)
Peak Hour: PM
Count Date: 01/10/12
Scenario: Challenger School TIA
(SJ) Growth Factor: 0.000
(SJ) Number of Months: 0.0

Date of Analysis: 01/20/12
Future Growth % Per Year: 0.000
Number of Years to Buildout: 0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	271	155	46	66	148	50	34	186	153	809	443	149	2510
Approved Project Trips													
CSJ ATI	0	7	0	18	25	0	11	61	61	27	37	0	247
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	-2	0	-2	0	0	0	0	0	0	0	0	-2	-6
Total Approved Trips	-2	7	-2	18	25	0	11	61	61	27	37	-2	241
Background Conditions	269	162	44	84	173	50	45	247	214	836	480	147	2751
check	269	162	44	84	173	50	45	247	214	836	480	147	
Proposed Project Trips													
Project Option 1	2	0	6	0	0	0	0	0	0	0	0	4	12
Exist + Project Conditions	271	155	50	66	148	50	34	186	153	809	443	151	2516
check	271	155	50	66	148	50	34	186	153	809	443	151	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	271	162	50	84	173	50	45	247	214	836	480	151	2763
check	271	162	50	84	173	50	45	247	214	836	480	151	
Cumlative Project Trips													
NSJ Phase 2	0	0	0	0	0	0	11	43	51	0	0	0	105
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	0	0	0	0	0	0	11	43	51	0	0	0	105
Cumulative Conditions - No Project	269	162	44	84	173	50	56	290	265	836	480	147	2856
check	269	162	44	84	173	50	56	290	265	836	480	147	
Cumulative Conditions - With Project	271	162	50	84	173	50	56	290	265	836	480	151	2868
check	271	162	50	84	173	50	56	290	265	836	480	151	

Challenger School Expansion
Gish Road

Intersection Number:	8		
Traffix Node Number:	3288		
Intersection Name:	I-880 SB Ramps	& Old Bayshore (West)	
Peak Hour:	PM	Date of Analysis:	01/20/12
Count Date:	01/11/12		
Scenario:	Challenger School TIA		
(SJ) Growth Factor:	0.000	Future Growth % Per Year:	0.000
(SJ) Number of Months:	0.0	Number of Years to Buildout:	0

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	41	3	269	261	317	6	48	25	9	12	1178	301	2470
Approved Project Trips													
CSJ ATI	13	0	100	23	43	0	0	0	0	1	108	35	323
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Trips Generated by 84 Students	0	0	-1	-1	-1	0	0	0	0	0	-1	0	-4
Total Approved Trips	13	0	99	22	42	0	0	0	0	1	107	35	319
Background Conditions	54	3	368	283	359	6	48	25	9	13	1285	336	2789
check	54	3	368	283	359	6	48	25	9	13	1285	336	
Proposed Project Trips													
Project Option 1	0	0	3	1	1	0	0	0	0	0	1	0	6
Exist + Project Conditions	41	3	271	261	317	6	48	25	9	12	1178	301	2472
check	41	3	271	261	317	6	48	25	9	12	1178	301	
	0	0	0	0	0	0	0	0	0	0	0	0	0
Back + Project Conditions	54	3	371	284	360	6	48	25	9	13	1286	336	2795
check	54	3	371	284	360	6	48	25	9	13	1286	336	
Cumlative Project Trips													
NSJ Phase 2	13	0	39	23	13	0	0	0	0	1	99	35	223
Downtown Strategic Plan Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Trips	13	0	39	23	13	0	0	0	0	1	99	35	223
Cumulative Conditions - No Project	67	3	407	306	372	6	48	25	9	14	1384	371	3012
check	67	3	407	306	372	6	48	25	9	14	1384	371	
Cumulative Conditions - With Project	67	3	410	307	373	6	48	25	9	14	1385	371	3018
check	67	3	410	307	373	6	48	25	9	14	1385	371	

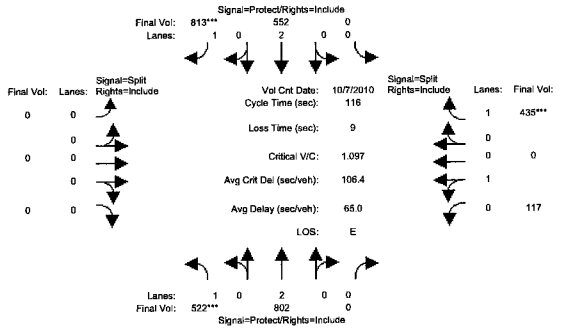
Appendix D

Intersection Level of Service Calculations

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 7:30-8:30AMAM												
Base Vol:	522	802	0	0	552	813	0	0	0	117	0	435
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	522	802	0	0	552	813	0	0	0	117	0	435
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	522	802	0	0	552	813	0	0	0	117	0	435
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	522	802	0	0	552	813	0	0	0	117	0	435
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	522	802	0	0	552	813	0	0	0	117	0	435
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	522	802	0	0	552	813	0	0	0	117	0	435
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.30	0.21	0.00	0.00	0.15	0.46	0.00	0.00	0.00	0.07	0.00	0.25
Crit Moves:	****					****						****
Green Time:	31.6	80.7	0.0	0.0	49.1	49.1	0.0	0.0	0.0	26.3	0.0	26.3
Volume/Cap:	1.10	0.30	0.00	0.00	0.34	1.10	0.00	0.00	0.00	0.29	0.00	1.10
Delay/Veh:	112.3	6.9	0.0	0.0	22.7	96.0	0.0	0.0	0.0	37.5	0.0	118.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	112.3	6.9	0.0	0.0	22.7	96.0	0.0	0.0	0.0	37.5	0.0	118.6
LOS by Move:	F	A	A	A	C	F	A	A	A	D	A	F
HCM2kAvgQ:	28	5	0	0	6	43	0	0	0	4	0	26

Note: Queue reported is the number of cars per lane.

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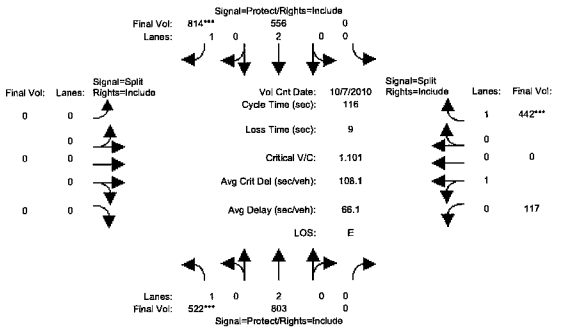
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 7:30-8:30AMAM												
Base Vol:	522	802	0	0	552	813	0	0	0	117	0	435
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	522	802	0	0	552	813	0	0	0	117	0	435
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	0	4	1	0	0	0	0	0	7
Initial Fut:	522	803	0	0	556	814	0	0	0	117	0	442
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	522	803	0	0	556	814	0	0	0	117	0	442
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	522	803	0	0	556	814	0	0	0	117	0	442
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	522	803	0	0	556	814	0	0	0	117	0	442
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.30	0.21	0.00	0.00	0.15	0.47	0.00	0.00	0.00	0.07	0.00	0.25
Crit Moves:	****					****						****
Green Time:	31.4	80.4	0.0	0.0	49.0	49.0	0.0	0.0	0.0	26.6	0.0	26.6
Volume/Cap:	1.10	0.30	0.00	0.00	0.35	1.10	0.00	0.00	0.00	0.28	0.00	1.10
Delay/Veh:	114.1	7.0	0.0	0.0	22.8	97.9	0.0	0.0	0.0	37.2	0.0	119.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.1	7.0	0.0	0.0	22.8	97.9	0.0	0.0	0.0	37.2	0.0	119.9
LOS by Move:	F	A	A	A	C	F	A	A	A	D	A	F
HCM2kAvgQ:	28	5	0	0	6	43	0	0	0	4	0	26

Note: Queue reported is the number of cars per lane.

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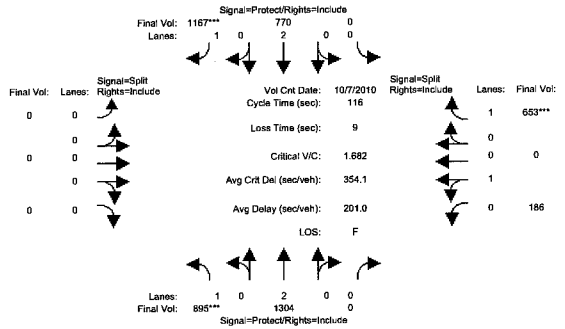
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 7:30-8:30AMAM												
Base Vol:	895	1306	0	0	774	1168	0	0	0	186	0	660
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	895	1306	0	0	774	1168	0	0	0	186	0	660
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-2	0	0	-4	-1	0	0	0	0	0	-7
Initial Fut:	895	1304	0	0	770	1167	0	0	0	186	0	653
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	895	1304	0	0	770	1167	0	0	0	186	0	653
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	895	1304	0	0	770	1167	0	0	0	186	0	653
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	895	1304	0	0	770	1167	0	0	0	186	0	653
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.51	0.34	0.00	0.00	0.20	0.67	0.00	0.00	0.00	0.10	0.00	0.37
Crit Moves:	****					****						****
Green Time:	35.3	81.3	0.0	0.0	46.0	46.0	0.0	0.0	0.0	25.7	0.0	25.7
Volume/Cap:	1.68	0.49	0.00	0.00	0.51	1.68	0.00	0.00	0.00	0.47	0.00	1.68
Delay/Veh:	355.4	8.1	0.0	0.0	26.8	348.1	0.0	0.0	0.0	40.0	0.0	363.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	355.4	8.1	0.0	0.0	26.8	348.1	0.0	0.0	0.0	40.0	0.0	363.0
LOS by Move:	F	A	A	A	C	F	A	A	A	D	A	F
HCM2kAvgQ:	81	10	0	0	10	106	0	0	0	6	0	61

Note: Queue reported is the number of cars per lane.

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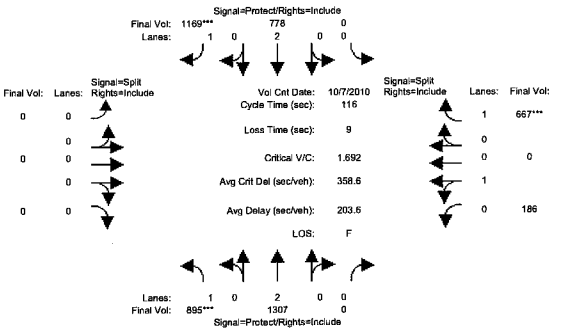
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 7:30-8:30AMAM												
Base Vol:	895	1304	0	0	770	1167	0	0	0	186	0	653
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	895	1304	0	0	770	1167	0	0	0	186	0	653
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	3	0	0	8	2	0	0	0	0	0	14
Initial Fut:	895	1307	0	0	778	1169	0	0	0	186	0	667
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	895	1307	0	0	778	1169	0	0	0	186	0	667
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	895	1307	0	0	778	1169	0	0	0	186	0	667
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	895	1307	0	0	778	1169	0	0	0	186	0	667
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.51	0.34	0.00	0.00	0.20	0.67	0.00	0.00	0.00	0.10	0.00	0.38
Crit Moves:	****					****						****
Green Time:	35.1	80.9	0.0	0.0	45.8	45.8	0.0	0.0	0.0	26.1	0.0	26.1
Volume/Cap:	1.69	0.49	0.00	0.00	0.52	1.69	0.00	0.00	0.00	0.46	0.00	1.69
Delay/Veh:	359.9	8.3	0.0	0.0	27.0	352.7	0.0	0.0	0.0	39.6	0.0	367.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	359.9	8.3	0.0	0.0	27.0	352.7	0.0	0.0	0.0	39.6	0.0	367.0
LOS by Move:	F	A	A	A	C	F	A	A	A	D	A	F
HCM2kAvgQ:	82	10	0	0	10	107	0	0	0	6	0	63

Note: Queue reported is the number of cars per lane.

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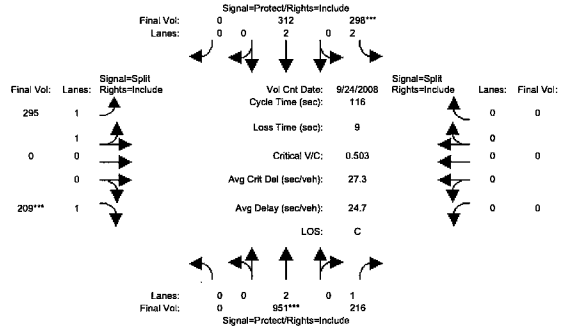
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Sep 2008 << 7:30-8:30AM												
Base Vol:	0	951	216	298	312	0	295	0	209	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	951	216	298	312	0	295	0	209	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	951	216	298	312	0	295	0	209	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	951	216	298	312	0	295	0	209	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	951	216	298	312	0	295	0	209	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	951	216	298	312	0	295	0	209	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3550	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.12	0.09	0.08	0.00	0.08	0.00	0.12	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	57.7	57.7	21.8	79.5	0.0	27.5	0.0	27.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.50	0.25	0.50	0.12	0.00	0.35	0.00	0.50	0.00	0.00	0.00
Delay/Veh:	0.0	19.8	16.9	42.9	6.3	0.0	37.1	0.0	39.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.8	16.9	42.9	6.3	0.0	37.1	0.0	39.3	0.0	0.0	0.0
LOS by Move:	A	B	B	D	A	A	D	A	D	A	A	A
HCM2kAvgQ:	0	11	5	6	2	0	5	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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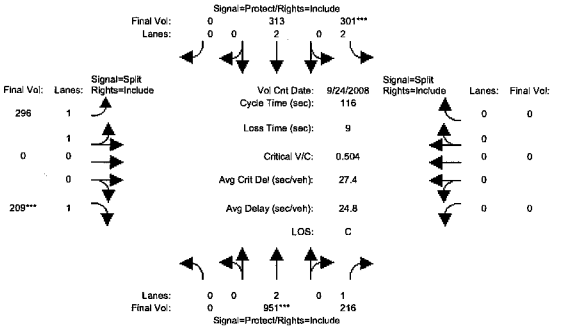
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Sep 2008 << 7:30-8:30AM												
Base Vol:	0	951	216	298	312	0	295	0	209	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	951	216	298	312	0	295	0	209	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	3	1	0	1	0	0	0	0	0
Initial Fut:	0	951	216	301	313	0	296	0	209	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	951	216	301	313	0	296	0	209	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	951	216	301	313	0	296	0	209	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	951	216	301	313	0	296	0	209	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3550	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.12	0.10	0.08	0.00	0.08	0.00	0.12	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	57.6	57.6	22.0	79.5	0.0	27.5	0.0	27.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.50	0.25	0.50	0.12	0.00	0.35	0.00	0.50	0.00	0.00	0.00
Delay/Veh:	0.0	19.9	16.9	42.8	6.3	0.0	37.1	0.0	39.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.9	16.9	42.8	6.3	0.0	37.1	0.0	39.4	0.0	0.0	0.0
LOS by Move:	A	B	B	D	A	A	D	A	D	A	A	A
HCM2kAvgQ:	0	11	5	6	2	0	5	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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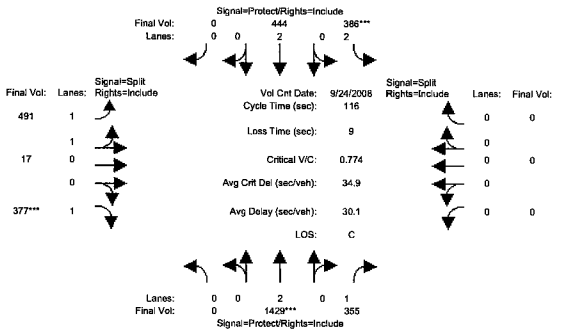
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Sep 2008 << 7:30-8:30AM												
Base Vol:	0	1430	355	389	445	0	492	17	377	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1430	355	389	445	0	492	17	377	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-1	0	-3	-1	0	-1	0	0	0	0	0
Initial Fut:	0	1429	355	386	444	0	491	17	377	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1429	355	386	444	0	491	17	377	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1429	355	386	444	0	491	17	377	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1429	355	386	444	0	491	17	377	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3431	119	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.20	0.12	0.12	0.00	0.14	0.14	0.22	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	56.4	56.4	18.4	74.7	0.0	32.3	32.3	32.3	0.0	0.0	0.0
Volume/Cap:	0.00	0.77	0.42	0.77	0.18	0.00	0.51	0.51	0.77	0.00	0.00	0.00
Delay/Veh:	0.0	26.7	19.6	54.2	8.4	0.0	35.7	35.7	46.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.7	19.6	54.2	8.4	0.0	35.7	35.7	46.1	0.0	0.0	0.0
LOS by Move:	A	C	B	D	A	A	D	D	D	A	A	A
HCM2kAvgQ:	0	22	9	8	3	0	8	8	15	0	0	0

Note: Queue reported is the number of cars per lane.

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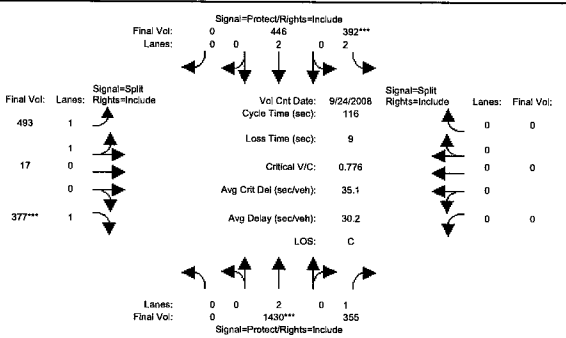
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Sep 2008 << 7:30-8:30AM												
Base Vol:	0	1429	355	386	444	0	491	17	377	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1429	355	386	444	0	491	17	377	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	6	2	0	2	0	0	0	0	0
Initial Fut:	0	1430	355	392	446	0	493	17	377	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1430	355	392	446	0	493	17	377	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1430	355	392	446	0	493	17	377	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1430	355	392	446	0	493	17	377	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3432	118	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.20	0.12	0.12	0.00	0.14	0.14	0.22	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	56.2	56.2	18.6	74.8	0.0	32.2	32.2	32.2	0.0	0.0	0.0
Volume/Cap:	0.00	0.78	0.42	0.78	0.18	0.00	0.52	0.52	0.78	0.00	0.00	0.00
Delay/Veh:	0.0	26.8	19.7	54.2	8.3	0.0	35.8	35.8	46.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.8	19.7	54.2	8.3	0.0	35.8	35.8	46.3	0.0	0.0	0.0
LOS by Move:	A	C	B	D	A	A	D	D	D	A	A	A
HCM2kAvgQ:	0	22	9	8	3	0	8	8	15	0	0	0

Note: Queue reported is the number of cars per lane.

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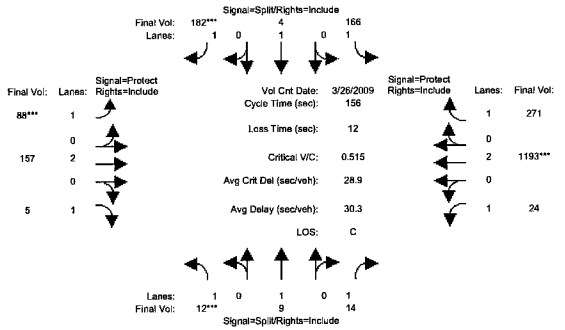
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	12	9	14	166	4	182	88	157	5	24	1193	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	166	4	182	88	157	5	24	1193	271
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	9	14	166	4	182	88	157	5	24	1193	271
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	166	4	182	88	157	5	24	1193	271
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	166	4	182	88	157	5	24	1193	271
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	166	4	182	88	157	5	24	1193	271
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.09	0.00	0.10	0.05	0.04	0.00	0.01	0.31	0.15
Crit Moves:	****					****	****				****	
Green Time:	10.0	10.0	10.0	29.8	29.8	29.8	14.4	61.3	61.3	42.9	89.8	89.8
Volume/Cap:	0.11	0.07	0.12	0.50	0.01	0.55	0.55	0.11	0.01	0.05	0.55	0.27
Delay/Veh:	69.2	68.9	69.4	57.6	51.2	58.9	71.5	30.0	28.8	41.6	20.7	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	57.6	51.2	58.9	71.5	30.0	28.8	41.6	20.7	16.7
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	8	0	9	5	2	0	1	17	7

Note: Queue reported is the number of cars per lane.

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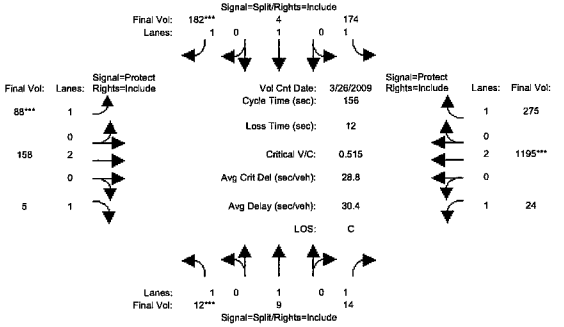
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	12	9	14	166	4	182	88	157	5	24	1193	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	166	4	182	88	157	5	24	1193	271
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	8	0	0	0	1	0	0	2	4
Initial Fut:	12	9	14	174	4	182	88	158	5	24	1195	275
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	174	4	182	88	158	5	24	1195	275
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	174	4	182	88	158	5	24	1195	275
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	174	4	182	88	158	5	24	1195	275
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.10	0.00	0.10	0.05	0.04	0.00	0.01	0.31	0.16
Crit Moves:	****					****	****				****	
Green Time:	10.0	10.0	10.0	29.7	29.7	29.7	14.4	61.3	61.3	42.9	89.9	89.9
Volume/Cap:	0.11	0.07	0.12	0.52	0.01	0.55	0.55	0.11	0.01	0.05	0.55	0.27
Delay/Veh:	69.2	68.9	69.4	58.2	51.2	58.9	71.5	30.0	28.8	41.6	20.7	16.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	58.2	51.2	58.9	71.5	30.0	28.8	41.6	20.7	16.8
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	8	0	9	5	2	0	1	17	7

Note: Queue reported is the number of cars per lane.

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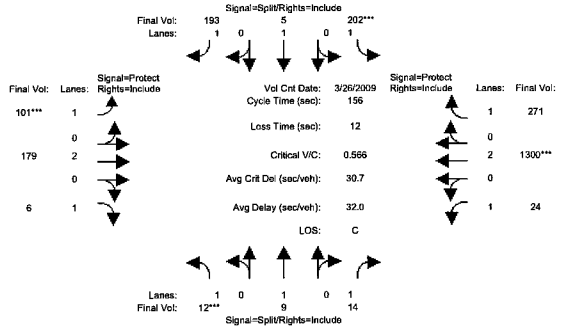
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3288: 880/BAYSHORE (W)



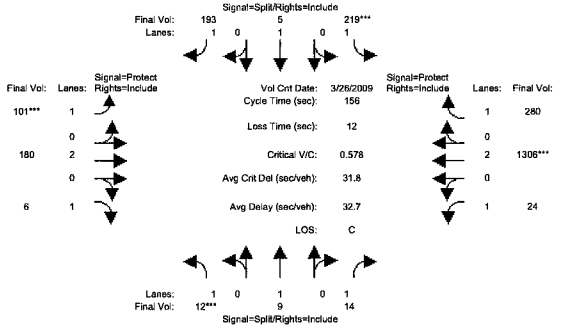
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	12	9	14	211	5	193	101	179	6	24	1304	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	211	5	193	101	179	6	24	1304	276
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	0	0	-9	0	0	0	0	0	0	-4	-5
Initial Fut:	12	9	14	202	5	193	101	179	6	24	1300	271
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	202	5	193	101	179	6	24	1300	271
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	202	5	193	101	179	6	24	1300	271
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	202	5	193	101	179	6	24	1300	271
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.12	0.00	0.11	0.06	0.05	0.00	0.01	0.34	0.15
Crit Moves:	****			****			****				****	
Green Time:	10.0	10.0	10.0	30.0	30.0	30.0	15.0	61.2	61.2	42.8	89.0	89.0
Volume/Cap:	0.11	0.07	0.12	0.60	0.01	0.57	0.60	0.12	0.01	0.05	0.60	0.27
Delay/Veh:	69.2	68.9	69.4	60.5	51.0	59.6	73.5	30.3	28.9	41.7	22.4	17.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	60.5	51.0	59.6	73.5	30.3	28.9	41.7	22.4	17.2
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	10	0	10	6	3	0	1	19	7

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgnd + Proj AM

Intersection #3288: 880/BAYSHORE (W)



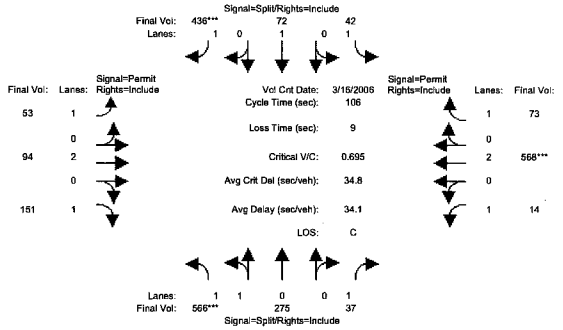
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	12	9	14	202	5	193	101	179	6	24	1300	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	202	5	193	101	179	6	24	1300	271
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	17	0	0	0	1	0	0	6	9
Initial Fut:	12	9	14	219	5	193	101	180	6	24	1306	280
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	219	5	193	101	180	6	24	1306	280
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	219	5	193	101	180	6	24	1306	280
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	219	5	193	101	180	6	24	1306	280
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.13	0.00	0.11	0.06	0.05	0.00	0.01	0.34	0.16
Crit Moves:	****			****			****				****	
Green Time:	10.0	10.0	10.0	31.8	31.8	31.8	14.7	60.1	60.1	42.1	87.5	87.5
Volume/Cap:	0.11	0.07	0.12	0.61	0.01	0.54	0.61	0.12	0.01	0.05	0.61	0.29
Delay/Veh:	69.2	68.9	69.4	59.6	49.5	57.2	74.6	31.0	29.6	42.2	23.5	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	59.6	49.5	57.2	74.6	31.0	29.6	42.2	23.5	18.1
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	11	0	9	6	3	0	1	20	7

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3289: 880/BAYSHORE (E)



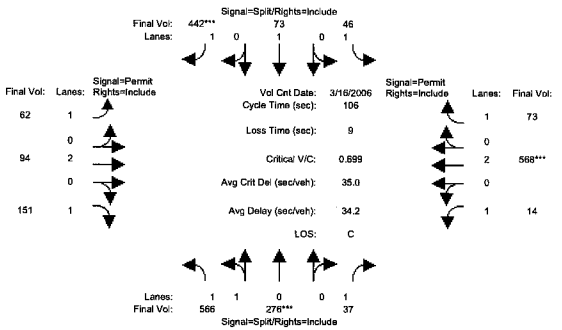
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 7:45-8:45AM												
Base Vol:	566	275	37	42	72	436	53	94	151	14	568	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	566	275	37	42	72	436	53	94	151	14	568	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	566	275	37	42	72	436	53	94	151	14	568	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	566	275	37	42	72	436	53	94	151	14	568	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	275	37	42	72	436	53	94	151	14	568	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	275	37	42	72	436	53	94	151	14	568	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.36	0.64	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2389	1161	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.02	0.02	0.04	0.25	0.03	0.02	0.09	0.01	0.15	0.04
Crit Moves:	****					****					****	
Green Time:	36.2	36.2	36.2	38.0	38.0	38.0	22.8	22.8	22.8	22.8	22.8	22.8
Volume/Cap:	0.69	0.69	0.06	0.07	0.11	0.69	0.14	0.11	0.40	0.04	0.69	0.19
Delay/Veh:	31.9	31.9	23.5	22.4	22.7	32.4	33.8	33.5	36.4	32.9	41.0	34.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.9	31.9	23.5	22.4	22.7	32.4	33.8	33.5	36.4	32.9	41.0	34.3
LOS by Move:	C	C	C	C	C	C	C	C	D	C	D	C
HCM2kAvgQ:	14	14	1	1	2	14	1	1	4	0	10	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3289: 880/BAYSHORE (E)



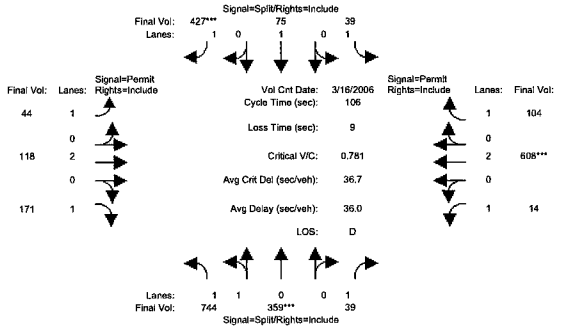
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 7:45-8:45AM												
Base Vol:	566	275	37	42	72	436	53	94	151	14	568	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	566	275	37	42	72	436	53	94	151	14	568	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	4	1	6	9	0	0	0	0	0
Initial Fut:	566	276	37	46	73	442	62	94	151	14	568	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	566	276	37	46	73	442	62	94	151	14	568	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	276	37	46	73	442	62	94	151	14	568	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	566	276	37	46	73	442	62	94	151	14	568	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.35	0.65	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2386	1164	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.02	0.03	0.04	0.25	0.04	0.02	0.09	0.01	0.15	0.04
Crit Moves:		****				****					****	
Green Time:	36.0	36.0	36.0	38.3	38.3	38.3	22.7	22.7	22.7	22.7	22.7	22.7
Volume/Cap:	0.70	0.70	0.06	0.07	0.11	0.70	0.17	0.12	0.40	0.04	0.70	0.19
Delay/Veh:	32.1	32.1	23.7	22.2	22.5	32.4	34.2	33.6	36.6	33.1	41.2	34.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.1	32.1	23.7	22.2	22.5	32.4	34.2	33.6	36.6	33.1	41.2	34.4
LOS by Move:	C	C	C	C	C	C	C	C	D	C	D	C
HCM2kAvgQ:	14	14	1	1	2	14	2	1	4	0	10	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3289: 880/BAYSHORE (E)



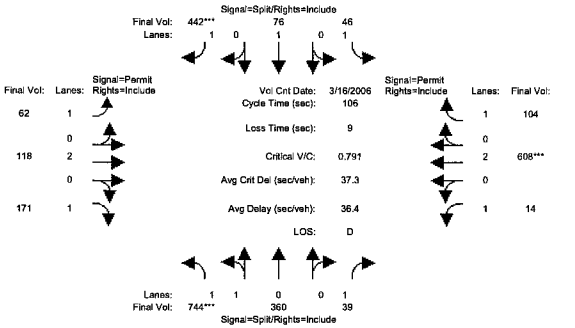
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 7:45-8:45AM												
Base Vol:	744	359	39	42	75	436	53	118	171	14	608	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	744	359	39	42	75	436	53	118	171	14	608	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	0	0	-3	0	-9	-9	0	0	0	0	0
Initial Fut:	744	359	39	39	75	427	44	118	171	14	608	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	744	359	39	39	75	427	44	118	171	14	608	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	744	359	39	39	75	427	44	118	171	14	608	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	744	359	39	39	75	427	44	118	171	14	608	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.36	0.64	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2394	1155	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.02	0.02	0.04	0.24	0.03	0.03	0.10	0.01	0.16	0.06
Crit Moves:		****				****					****	
Green Time:	42.2	42.2	42.2	33.1	33.1	33.1	21.7	21.7	21.7	21.7	21.7	21.7
Volume/Cap:	0.78	0.78	0.06	0.07	0.13	0.78	0.12	0.15	0.48	0.04	0.78	0.29
Delay/Veh:	30.8	30.8	19.7	25.7	26.2	40.3	34.5	34.7	38.1	33.8	45.0	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	30.8	19.7	25.7	26.2	40.3	34.5	34.7	38.1	33.8	45.0	36.1
LOS by Move:	C	C	B	C	C	D	C	C	D	C	D	D
HCM2kAvgQ:	18	18	1	1	2	15	1	2	5	0	11	3

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3289: 880/BAYSHORE (E)



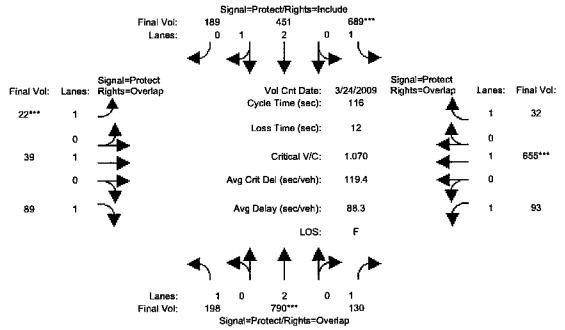
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 7:45-8:45AM												
Base Vol:	744	359	39	39	75	427	44	118	171	14	608	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	744	359	39	39	75	427	44	118	171	14	608	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	7	1	15	18	0	0	0	0	0
Initial Fut:	744	360	39	46	76	442	62	118	171	14	608	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	744	360	39	46	76	442	62	118	171	14	608	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	744	360	39	46	76	442	62	118	171	14	608	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	744	360	39	46	76	442	62	118	171	14	608	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.36	0.64	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2392	1157	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.02	0.03	0.04	0.25	0.04	0.03	0.10	0.01	0.16	0.06
Crit Moves:	****					****					****	
Green Time:	41.7	41.7	41.7	33.9	33.9	33.9	21.4	21.4	21.4	21.4	21.4	21.4
Volume/Cap:	0.79	0.79	0.06	0.08	0.13	0.79	0.18	0.15	0.48	0.04	0.79	0.29
Delay/Veh:	31.5	31.5	20.0	25.3	25.7	40.4	35.2	34.9	38.4	34.0	45.7	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	31.5	20.0	25.3	25.7	40.4	35.2	34.9	38.4	34.0	45.7	36.3
LOS by Move:	C	C	B	C	C	D	D	C	D	C	D	D
HCM2kAvgQ:	19	19	1	1	2	16	2	2	5	0	11	3

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 7:45-8:45AM												
Base Vol:	198	790	130	689	451	189	22	39	89	93	655	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	790	130	689	451	189	22	39	89	93	655	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	790	130	689	451	189	22	39	89	93	655	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	790	130	689	451	189	22	39	89	93	655	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	790	130	689	451	189	22	39	89	93	655	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	198	790	130	689	451	189	22	39	89	93	655	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.08	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3944	1653	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.21	0.07	0.39	0.11	0.11	0.01	0.02	0.05	0.05	0.34	0.02
Crit Moves:		****		****			****				****	
Green Time:	30.7	21.3	38.7	40.4	31.0	31.0	7.0	24.9	55.6	17.4	35.3	75.7
Volume/Cap:	0.43	1.13	0.22	1.13	0.43	0.43	0.21	0.10	0.11	0.35	1.13	0.03
Delay/Veh:	36.0	124	28.0	116.3	35.4	35.4	52.8	36.6	16.6	45.0	120	7.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	124	28.0	116.3	35.4	35.4	52.8	36.6	16.6	45.0	120	7.1
LOS by Move:	D	F	C	F	D	D	D	D	B	D	F	A
HCM2kAvgQ:	6	21	3	39	6	6	1	1	2	3	36	0

Note: Queue reported is the number of cars per lane.

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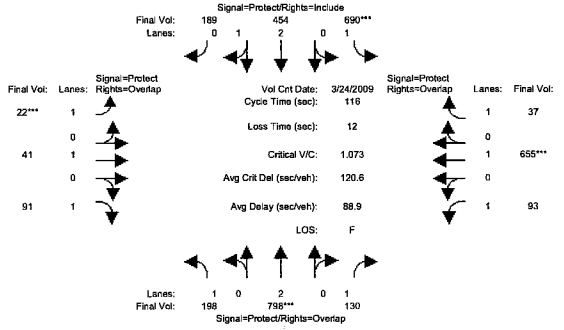
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 7:45-8:45AM												
Base Vol:	198	790	130	689	451	189	22	39	89	93	655	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	790	130	689	451	189	22	39	89	93	655	32
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	8	0	1	3	0	0	2	2	0	0	5
Initial Fut:	198	798	130	690	454	189	22	41	91	93	655	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	798	130	690	454	189	22	41	91	93	655	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	798	130	690	454	189	22	41	91	93	655	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	198	798	130	690	454	189	22	41	91	93	655	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.09	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	3952	1645	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.21	0.07	0.39	0.11	0.11	0.01	0.02	0.05	0.05	0.34	0.02
Crit Moves:		****		****			****				****	
Green Time:	30.6	21.5	38.9	40.3	31.1	31.1	7.0	24.8	55.5	17.4	35.2	75.5
Volume/Cap:	0.43	1.13	0.22	1.13	0.43	0.43	0.21	0.10	0.11	0.35	1.13	0.03
Delay/Veh:	36.0	125	27.9	117.5	35.3	35.3	52.8	36.7	16.7	45.1	121	7.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	125	27.9	117.5	35.3	35.3	52.8	36.7	16.7	45.1	121	7.2
LOS by Move:	D	F	C	F	D	D	D	D	B	D	F	A
HCM2kAvgQ:	6	21	3	39	6	6	1	1	2	3	36	0

Note: Queue reported is the number of cars per lane.

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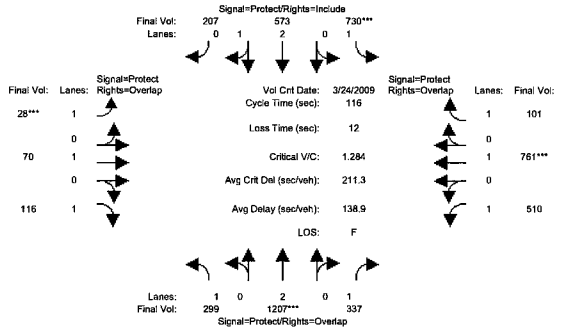
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3421: COMMERCIAL/OAKLAND



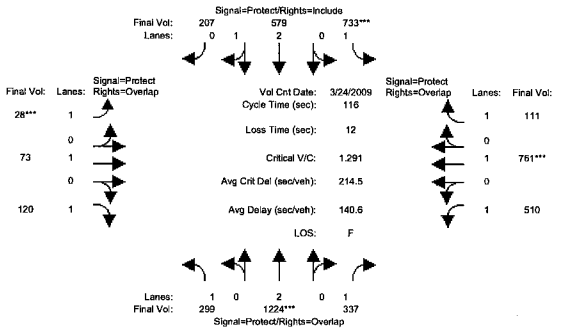
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 7:45-8:45AM												
Base Vol:	299	1216	337	732	576	207	28	71	118	510	761	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	1216	337	732	576	207	28	71	118	510	761	106
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-9	0	-2	-3	0	0	-1	-2	0	0	-5
Initial Fut:	299	1207	337	730	573	207	28	70	116	510	761	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	1207	337	730	573	207	28	70	116	510	761	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	1207	337	730	573	207	28	70	116	510	761	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	1207	337	730	573	207	28	70	116	510	761	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.17	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4112	1485	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.17	0.32	0.19	0.42	0.14	0.14	0.02	0.04	0.07	0.29	0.40	0.06
Crit Moves:		****		****			****				****	
Green Time:	34.6	27.1	58.4	35.6	28.2	28.2	7.0	10.0	44.6	31.2	34.2	69.9
Volume/Cap:	0.57	1.36	0.38	1.36	0.57	0.57	0.27	0.43	0.17	1.08	1.36	0.10
Delay/Veh:	36.0	213	18.0	213.0	39.2	39.2	53.4	52.1	23.7	108.0	213	9.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	213	18.0	213.0	39.2	39.2	53.4	52.1	23.7	108.0	213	9.8
LOS by Move:	D	F	B	F	D	D	D	D	C	F	F	A
HCM2kAvgQ:	10	41	8	54	8	8	1	3	3	29	53	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3421: COMMERCIAL/OAKLAND



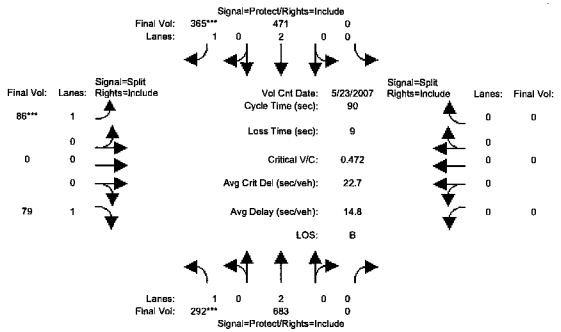
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 7:45-8:45AM												
Base Vol:	299	1207	337	730	573	207	28	70	116	510	761	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	1207	337	730	573	207	28	70	116	510	761	101
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	17	0	3	6	0	0	3	4	0	0	10
Initial Fut:	299	1224	337	733	579	207	28	73	120	510	761	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	1224	337	733	579	207	28	73	120	510	761	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	1224	337	733	579	207	28	73	120	510	761	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	1224	337	733	579	207	28	73	120	510	761	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.18	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4123	1474	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.17	0.32	0.19	0.42	0.14	0.14	0.02	0.04	0.07	0.29	0.40	0.06
Crit Moves:		****		****			****				****	
Green Time:	34.6	27.4	58.4	35.6	28.4	28.4	7.0	10.0	44.6	31.0	34.0	69.6
Volume/Cap:	0.57	1.37	0.38	1.37	0.57	0.57	0.27	0.45	0.18	1.09	1.37	0.11
Delay/Veh:	36.0	216	18.0	216.2	39.1	39.1	53.4	52.3	23.7	110.4	217	9.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	216	18.0	216.2	39.1	39.1	53.4	52.3	23.7	110.4	217	9.9
LOS by Move:	D	F	B	F	D	D	D	D	C	F	F	A
HCM2kAvgQ:	10	42	8	54	8	8	1	3	3	29	53	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 7:45-8:45AM												
Base Vol:	292	683	0	0	471	365	86	0	79	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	292	683	0	0	471	365	86	0	79	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	292	683	0	0	471	365	86	0	79	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	292	683	0	0	471	365	86	0	79	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	292	683	0	0	471	365	86	0	79	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	292	683	0	0	471	365	86	0	79	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.18	0.00	0.00	0.12	0.21	0.05	0.00	0.05	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	31.6	71.0	0.0	0.0	39.4	39.4	10.0	0.0	10.0	0.0	0.0	0.0
Volume/Cap:	0.48	0.23	0.00	0.00	0.28	0.48	0.44	0.00	0.41	0.00	0.00	0.00
Delay/Veh:	23.4	2.5	0.0	0.0	16.3	18.4	39.0	0.0	38.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.4	2.5	0.0	0.0	16.3	18.4	39.0	0.0	38.6	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	B	D	A	D	A	A	A
HCM2kAvgQ:	6	2	0	0	4	8	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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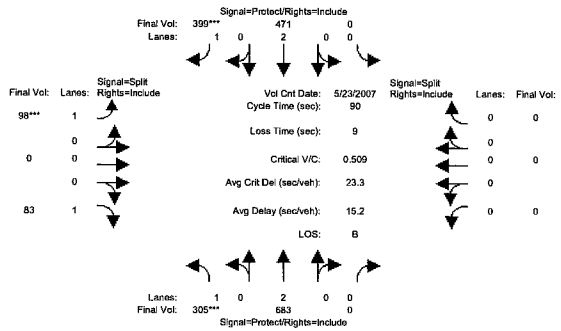
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 7:45-8:45AM												
Base Vol:	292	683	0	0	471	365	86	0	79	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	292	683	0	0	471	365	86	0	79	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	13	0	0	0	0	34	12	0	4	0	0	0
Initial Fut:	305	683	0	0	471	399	98	0	83	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	305	683	0	0	471	399	98	0	83	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	305	683	0	0	471	399	98	0	83	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	305	683	0	0	471	399	98	0	83	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.18	0.00	0.00	0.12	0.23	0.06	0.00	0.05	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	30.8	71.0	0.0	0.0	40.2	40.2	10.0	0.0	10.0	0.0	0.0	0.0
Volume/Cap:	0.51	0.23	0.00	0.00	0.28	0.51	0.50	0.00	0.43	0.00	0.00	0.00
Delay/Veh:	24.3	2.5	0.0	0.0	15.8	18.4	39.8	0.0	38.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.3	2.5	0.0	0.0	15.8	18.4	39.8	0.0	38.8	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	B	D	A	D	A	A	A
HCM2kAvgQ:	7	2	0	0	4	8	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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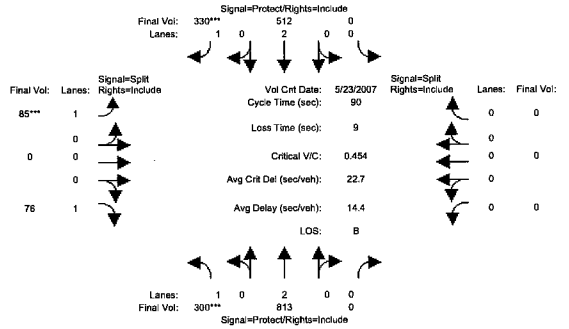
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 7:45-8:45AM												
Base Vol:	314	813	0	0	512	367	98	0	81	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	314	813	0	0	512	367	98	0	81	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	-14	0	0	0	0	-37	-13	0	-5	0	0	0
Initial Fut:	300	813	0	0	512	330	85	0	76	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	300	813	0	0	512	330	85	0	76	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	813	0	0	512	330	85	0	76	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	300	813	0	0	512	330	85	0	76	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.21	0.00	0.00	0.13	0.19	0.05	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	33.8	71.0	0.0	0.0	37.2	37.2	10.0	0.0	10.0	0.0	0.0	0.0
Volume/Cap:	0.46	0.27	0.00	0.00	0.33	0.46	0.44	0.00	0.39	0.00	0.00	0.00
Delay/Veh:	21.7	2.6	0.0	0.0	18.0	19.6	38.9	0.0	38.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.7	2.6	0.0	0.0	18.0	19.6	38.9	0.0	38.5	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	B	D	A	D	A	A	A
HCM2kAvgQ:	6	3	0	0	5	7	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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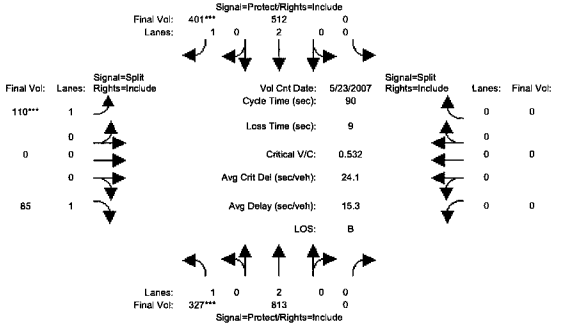
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 7:45-8:45AM												
Base Vol:	300	813	0	0	512	330	85	0	76	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	813	0	0	512	330	85	0	76	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	27	0	0	0	0	71	25	0	9	0	0	0
Initial Fut:	327	813	0	0	512	401	110	0	85	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	813	0	0	512	401	110	0	85	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	813	0	0	512	401	110	0	85	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	813	0	0	512	401	110	0	85	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.19	0.21	0.00	0.00	0.13	0.23	0.06	0.00	0.05	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	31.6	70.4	0.0	0.0	38.8	38.8	10.6	0.0	10.6	0.0	0.0	0.0
Volume/Cap:	0.53	0.27	0.00	0.00	0.31	0.53	0.53	0.00	0.41	0.00	0.00	0.00
Delay/Veh:	24.2	2.8	0.0	0.0	17.0	19.7	40.0	0.0	38.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.2	2.8	0.0	0.0	17.0	19.7	40.0	0.0	38.1	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	B	D	A	D	A	A	A
HCM2kAvgQ:	7	3	0	0	4	9	4	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

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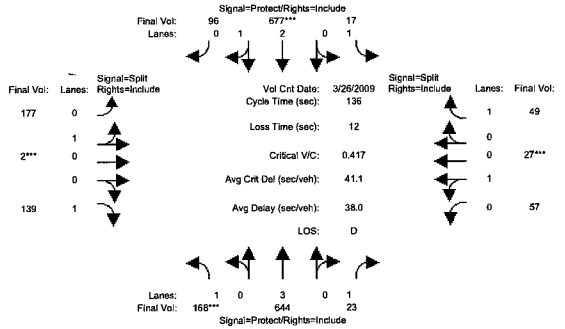
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	168	644	23	17	677	96	177	2	139	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	644	23	17	677	96	177	2	139	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	644	23	17	677	96	177	2	139	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	644	23	17	677	96	177	2	139	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	644	23	17	677	96	177	2	139	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	644	23	17	677	96	177	2	139	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.61	0.39	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4904	695	1780	20	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.01	0.01	0.14	0.14	0.10	0.10	0.08	0.05	0.05	0.03
Crit Moves:	****				****			****			****	
Green Time:	31.3	52.4	52.4	23.9	45.0	45.0	32.4	32.4	32.4	15.2	15.2	15.2
Volume/Cap:	0.42	0.29	0.03	0.06	0.42	0.42	0.42	0.42	0.33	0.42	0.42	0.25
Delay/Veh:	47.7	29.3	26.1	47.0	36.0	36.0	46.8	46.8	45.0	62.5	62.5	58.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.7	29.3	26.1	47.0	36.0	36.0	46.8	46.8	45.0	62.5	62.5	58.2
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	6	6	1	1	8	8	7	7	5	4	4	2

Note: Queue reported is the number of cars per lane.

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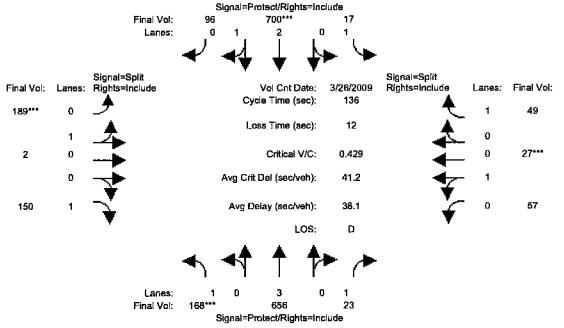
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj AM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	168	644	23	17	677	96	177	2	139	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	644	23	17	677	96	177	2	139	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	12	0	0	23	0	12	0	11	0	0	0
Initial Fut:	168	656	23	17	700	96	189	2	150	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	656	23	17	700	96	189	2	150	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	656	23	17	700	96	189	2	150	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	656	23	17	700	96	189	2	150	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.62	0.38	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4924	675	1781	19	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.01	0.01	0.14	0.14	0.11	0.11	0.09	0.05	0.05	0.03
Crit Moves:	****				****		****				****	
Green Time:	30.4	52.2	52.2	23.3	45.1	45.1	33.7	33.7	33.7	14.8	14.8	14.8
Volume/Cap:	0.43	0.30	0.03	0.06	0.43	0.43	0.43	0.43	0.35	0.43	0.43	0.26
Delay/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	7	6	1	1	9	9	7	7	6	4	4	2

Note: Queue reported is the number of cars per lane.

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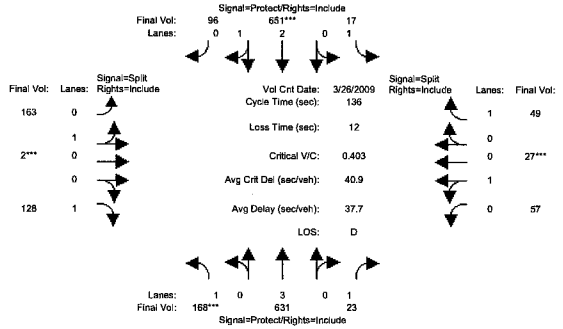
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background AM

Intersection #3866: BERGER/OAKLAND



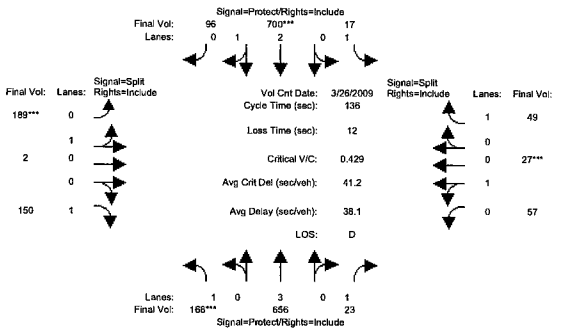
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	168	644	23	17	677	96	177	2	139	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	644	23	17	677	96	177	2	139	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-13	0	0	-26	0	-14	0	-11	0	0	0
Initial Fut:	168	631	23	17	651	96	163	2	128	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	631	23	17	651	96	163	2	128	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	631	23	17	651	96	163	2	128	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	631	23	17	651	96	163	2	128	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.60	0.40	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4879	720	1778	22	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.01	0.01	0.13	0.13	0.09	0.09	0.07	0.05	0.05	0.03
Crit Moves:	****				****			****			****	
Green Time:	32.4	52.8	52.8	24.6	45.0	45.0	30.9	30.9	30.9	15.7	15.7	15.7
Volume/Cap:	0.40	0.29	0.03	0.05	0.40	0.40	0.40	0.40	0.32	0.40	0.40	0.24
Delay/Veh:	46.6	28.9	25.9	46.4	35.8	35.8	47.6	47.6	45.9	61.5	61.5	57.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	28.9	25.9	46.4	35.8	35.8	47.6	47.6	45.9	61.5	61.5	57.5
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	6	6	1	1	8	8	6	6	5	4	4	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj AM

Intersection #3866: BERGER/OAKLAND



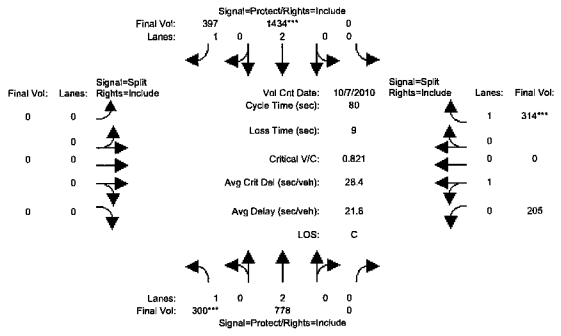
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 7:45-8:45AM												
Base Vol:	168	631	23	17	651	96	163	2	128	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	631	23	17	651	96	163	2	128	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	25	0	0	49	0	26	0	22	0	0	0
Initial Fut:	168	656	23	17	700	96	189	2	150	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	656	23	17	700	96	189	2	150	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	656	23	17	700	96	189	2	150	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	656	23	17	700	96	189	2	150	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.62	0.38	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4924	675	1781	19	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.01	0.01	0.14	0.14	0.11	0.11	0.09	0.05	0.05	0.03
Crit Moves:	****				****		****				****	
Green Time:	30.4	52.2	52.2	23.3	45.1	45.1	33.7	33.7	33.7	14.8	14.8	14.8
Volume/Cap:	0.43	0.30	0.03	0.06	0.43	0.43	0.43	0.43	0.35	0.43	0.43	0.26
Delay/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	7	6	1	1	9	9	7	7	6	4	4	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	0		0	0	10		10	10
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM																
Base Vol:	300		778	0	0		1434	397	0		0	0	205		0	314
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	300		778	0	0		1434	397	0		0	0	205		0	314
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
PasserByVol:	0		0	0	0		0	0	0		0	0	0		0	0
Initial Fut:	300		778	0	0		1434	397	0		0	0	205		0	314
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	300		778	0	0		1434	397	0		0	0	205		0	314
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	300		778	0	0		1434	397	0		0	0	205		0	314
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	300		778	0	0		1434	397	0		0	0	205		0	314
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.95		0.95	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00		0.00	1.00
Final Sat.:	1750		3800	0	0		3800	1750	0		0	0	1800		0	1750
Capacity Analysis Module:																
Vol/Sat:	0.17		0.20	0.00	0.00		0.38	0.23	0.00		0.00	0.00	0.11		0.00	0.18
Crit Moves:	****						****									****
Green Time:	16.7		53.5	0.0	0.0		36.8	36.8	0.0		0.0	0.0	17.5		0.0	17.5
Volume/Cap:	0.82		0.31	0.00	0.00		0.82	0.49	0.00		0.00	0.00	0.52		0.00	0.82
Delay/Veh:	43.9		5.6	0.0	0.0		22.0	15.6	0.0		0.0	0.0	28.8		0.0	42.9
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	43.9		5.6	0.0	0.0		22.0	15.6	0.0		0.0	0.0	28.8		0.0	42.9
LOS by Move:	D		A	A	A		C	B	A		A	A	C		A	D
HCM2kAvgQ:	8		4	0	0		16	7	0		0	0	5		0	11

Note: Queue reported is the number of cars per lane.

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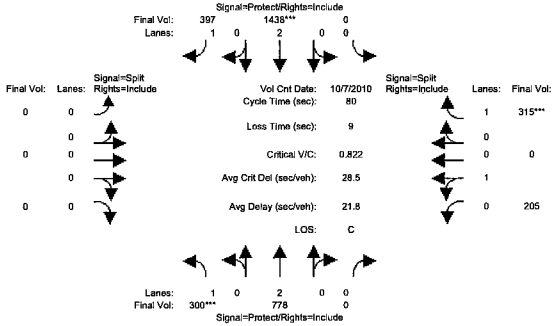
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	0		0	0	10		10	10
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM																
Base Vol:	300		778	0	0		1434	397	0		0	0	205		0	314
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	300		778	0	0		1434	397	0		0	0	205		0	314
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
ProjTrips:	0		0	0	0		4	0	0		0	0	0		0	1
Initial Fut:	300		778	0	0		1438	397	0		0	0	205		0	315
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	300		778	0	0		1438	397	0		0	0	205		0	315
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	300		778	0	0		1438	397	0		0	0	205		0	315
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	300		778	0	0		1438	397	0		0	0	205		0	315
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.95		0.95	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00		0.00	1.00
Final Sat.:	1750		3800	0	0		3800	1750	0		0	0	1800		0	1750
Capacity Analysis Module:																
Vol/Sat:	0.17		0.20	0.00	0.00		0.38	0.23	0.00		0.00	0.00	0.11		0.00	0.18
Crit Moves:	****						****									****
Green Time:	16.7		53.5	0.0	0.0		36.8	36.8	0.0		0.0	0.0	17.5		0.0	17.5
Volume/Cap:	0.82		0.31	0.00	0.00		0.82	0.49	0.00		0.00	0.00	0.52		0.00	0.82
Delay/Veh:	44.2		5.6	0.0	0.0		22.0	15.6	0.0		0.0	0.0	28.8		0.0	43.1
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	44.2		5.6	0.0	0.0		22.0	15.6	0.0		0.0	0.0	28.8		0.0	43.1
LOS by Move:	D		A	A	A		C	B	A		A	A	C		A	D
HCM2kAvgQ:	8		4	0	0		16	7	0		0	0	5		0	11

Note: Queue reported is the number of cars per lane.

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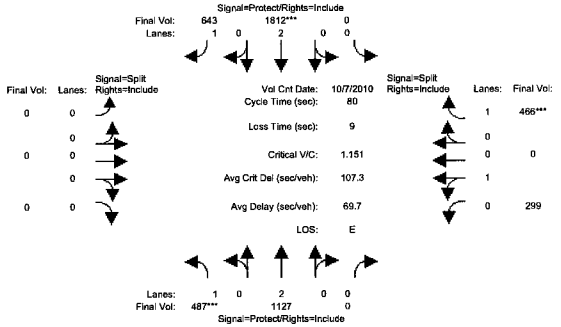
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	487	1130	0	0	1815	643	0	0	0	299	0	467
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	1130	0	0	1815	643	0	0	0	299	0	467
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-3	0	0	-3	0	0	0	0	0	0	-1
Initial Fut:	487	1127	0	0	1812	643	0	0	0	299	0	466
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	487	1127	0	0	1812	643	0	0	0	299	0	466
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	487	1127	0	0	1812	643	0	0	0	299	0	466
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	487	1127	0	0	1812	643	0	0	0	299	0	466
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.30	0.00	0.00	0.48	0.37	0.00	0.00	0.00	0.17	0.00	0.27
Crit Moves:	****				****							****
Green Time:	19.3	52.5	0.0	0.0	33.1	33.1	0.0	0.0	0.0	18.5	0.0	18.5
Volume/Cap:	1.15	0.45	0.00	0.00	1.15	0.89	0.00	0.00	0.00	0.72	0.00	1.15
Delay/Veh:	122.2	6.9	0.0	0.0	99.1	34.4	0.0	0.0	0.0	34.3	0.0	123.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	122.2	6.9	0.0	0.0	99.1	34.4	0.0	0.0	0.0	34.3	0.0	123.5
LOS by Move:	F	A	A	A	F	C	A	A	A	C	A	F
HCM2kAvgQ:	21	6	0	0	37	16	0	0	0	9	0	24

Note: Queue reported is the number of cars per lane.

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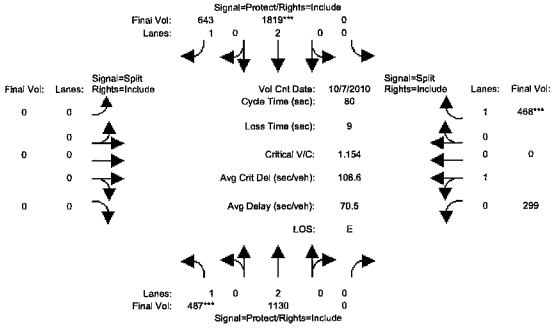
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj PM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	487	1127	0	0	1812	643	0	0	0	299	0	466
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	1127	0	0	1812	643	0	0	0	299	0	466
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	3	0	0	7	0	0	0	0	0	0	2
Initial Fut:	487	1130	0	0	1819	643	0	0	0	299	0	468
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	487	1130	0	0	1819	643	0	0	0	299	0	468
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	487	1130	0	0	1819	643	0	0	0	299	0	468
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	487	1130	0	0	1819	643	0	0	0	299	0	468
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	1750	3800	0	0	3800	1750	0	0	0	1800	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.30	0.00	0.00	0.48	0.37	0.00	0.00	0.00	0.17	0.00	0.27
Crit Moves:	****				****							****
Green Time:	19.3	52.5	0.0	0.0	33.2	33.2	0.0	0.0	0.0	18.5	0.0	18.5
Volume/Cap:	1.15	0.45	0.00	0.00	1.15	0.89	0.00	0.00	0.00	0.72	0.00	1.15
Delay/Veh:	123.5	6.9	0.0	0.0	101	34.3	0.0	0.0	0.0	34.2	0.0	124.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	123.5	6.9	0.0	0.0	101	34.3	0.0	0.0	0.0	34.2	0.0	124.7
LOS by Move:	F	A	A	A	F	C	A	A	A	C	A	F
HCM2kAvgQ:	21	6	0	0	37	16	0	0	0	9	0	25

Note: Queue reported is the number of cars per lane.

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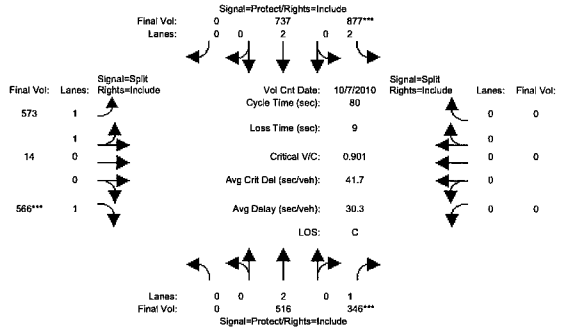
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	0	516	346	877	737	0	573	14	566	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	516	346	877	737	0	573	14	566	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	516	346	877	737	0	573	14	566	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	516	346	877	737	0	573	14	566	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	516	346	877	737	0	573	14	566	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	516	346	877	737	0	573	14	566	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.95	0.05	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3465	85	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.20	0.28	0.19	0.00	0.17	0.17	0.32	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	17.6	17.6	24.7	42.3	0.0	28.7	28.7	28.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.62	0.90	0.90	0.37	0.00	0.46	0.46	0.90	0.00	0.00	0.00
Delay/Veh:	0.0	29.6	53.9	37.8	11.1	0.0	20.0	20.0	40.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	29.6	53.9	37.8	11.1	0.0	20.0	20.0	40.4	0.0	0.0	0.0
LOS by Move:	A	C	D	D	B	A	B	B	D	A	A	A
HCM2kAvgQ:	0	7	13	13	5	0	6	6	18	0	0	0

Note: Queue reported is the number of cars per lane.

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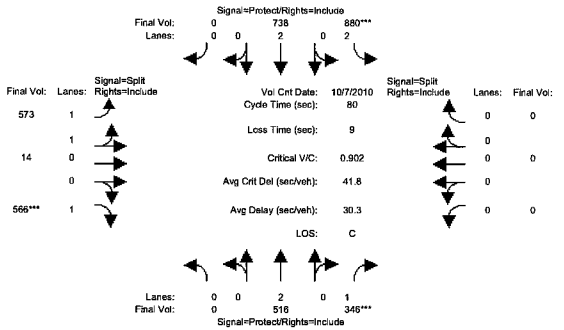
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	0	516	346	877	737	0	573	14	566	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	516	346	877	737	0	573	14	566	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	3	1	0	0	0	0	0	0	0
Initial Fut:	0	516	346	880	738	0	573	14	566	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	516	346	880	738	0	573	14	566	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	516	346	880	738	0	573	14	566	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	516	346	880	738	0	573	14	566	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.95	0.05	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3465	85	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.20	0.28	0.19	0.00	0.17	0.17	0.32	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	17.5	17.5	24.8	42.3	0.0	28.7	28.7	28.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.62	0.90	0.90	0.37	0.00	0.46	0.46	0.90	0.00	0.00	0.00
Delay/Veh:	0.0	29.7	54.1	37.8	11.1	0.0	20.0	20.0	40.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	29.7	54.1	37.8	11.1	0.0	20.0	20.0	40.6	0.0	0.0	0.0
LOS by Move:	A	C	D	D	B	A	B	B	D	A	A	A
HCM2kAvgQ:	0	7	13	13	5	0	6	6	18	0	0	0

Note: Queue reported is the number of cars per lane.

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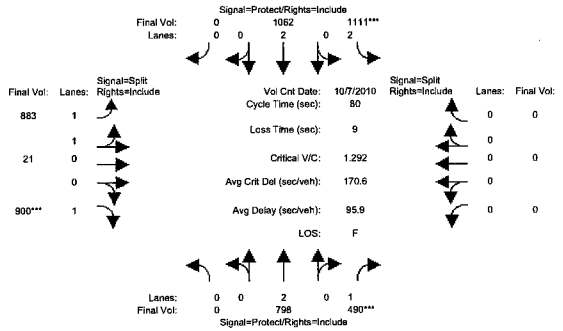
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	0	799	490	1114	1062	0	885	21	900	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	799	490	1114	1062	0	885	21	900	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-1	0	-3	0	0	-2	0	0	0	0	0
Initial Fut:	0	798	490	1111	1062	0	883	21	900	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	798	490	1111	1062	0	883	21	900	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	798	490	1111	1062	0	883	21	900	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	798	490	1111	1062	0	883	21	900	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.95	0.05	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3468	82	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.28	0.35	0.28	0.00	0.25	0.25	0.51	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	17.3	17.3	21.8	39.2	0.0	31.8	31.8	31.8	0.0	0.0	0.0
Volume/Cap:	0.00	0.97	1.29	1.29	0.57	0.00	0.64	0.64	1.29	0.00	0.00	0.00
Delay/Veh:	0.0	55.1	181.3	169.3	14.9	0.0	20.5	20.5	166.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	55.1	181.3	169.3	14.9	0.0	20.5	20.5	166.2	0.0	0.0	0.0
LOS by Move:	A	E	F	F	B	A	C	C	F	A	A	A
HCM2kAvgQ:	0	15	30	34	8	0	10	10	53	0	0	0

Note: Queue reported is the number of cars per lane.

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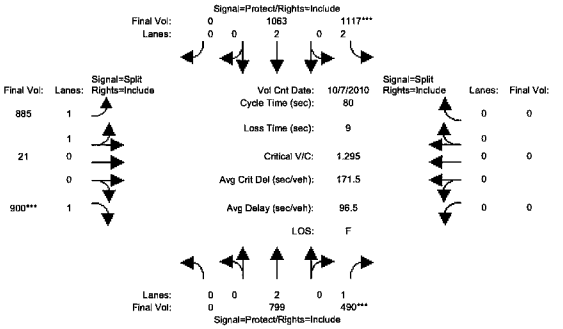
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgnd + Proj PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 7 Oct 2010 << 5:00-6:00PMPM												
Base Vol:	0	798	490	1111	1062	0	883	21	900	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	798	490	1111	1062	0	883	21	900	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	6	1	0	2	0	0	0	0	0
Initial Fut:	0	799	490	1117	1063	0	885	21	900	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	799	490	1117	1063	0	885	21	900	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	799	490	1117	1063	0	885	21	900	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	799	490	1117	1063	0	885	21	900	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.95	0.05	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3468	82	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.28	0.35	0.28	0.00	0.26	0.26	0.51	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	17.3	17.3	21.9	39.2	0.0	31.8	31.8	31.8	0.0	0.0	0.0
Volume/Cap:	0.00	0.97	1.29	1.29	0.57	0.00	0.64	0.64	1.29	0.00	0.00	0.00
Delay/Veh:	0.0	55.7	182.2	170.2	14.9	0.0	20.5	20.5	167.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	55.7	182.2	170.2	14.9	0.0	20.5	20.5	167.2	0.0	0.0	0.0
LOS by Move:	A	E	F	F	B	A	C	C	F	A	A	A
HCM2kAvgQ:	0	15	31	34	8	0	10	10	53	0	0	0

Note: Queue reported is the number of cars per lane.

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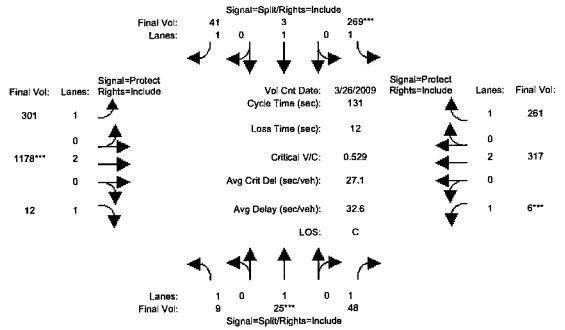
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 4:15-5:15PM												
Base Vol:	9	25	48	269	3	41	301	1178	12	6	317	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	269	3	41	301	1178	12	6	317	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	25	48	269	3	41	301	1178	12	6	317	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	269	3	41	301	1178	12	6	317	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	269	3	41	301	1178	12	6	317	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	269	3	41	301	1178	12	6	317	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.15	0.00	0.02	0.17	0.31	0.01	0.00	0.08	0.15
Crit Moves:		****		****				****			****	
Green Time:	10.0	10.0	10.0	33.8	33.8	33.8	40.3	68.2	68.2	7.0	34.9	34.9
Volume/Cap:	0.07	0.17	0.36	0.60	0.01	0.09	0.56	0.60	0.01	0.06	0.31	0.56
Delay/Veh:	56.4	57.2	59.1	44.8	36.1	37.0	39.3	22.3	15.2	59.2	38.6	42.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	44.8	36.1	37.0	39.3	22.3	15.2	59.2	38.6	42.9
LOS by Move:	E	E	E	D	D	D	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	11	0	1	11	16	0	0	5	10

Note: Queue reported is the number of cars per lane.

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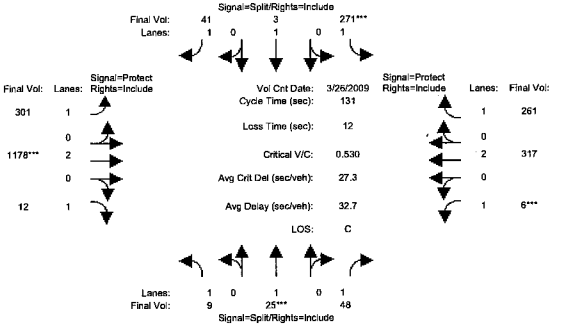
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 4:15-5:15PM												
Base Vol:	9	25	48	269	3	41	301	1178	12	6	317	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	269	3	41	301	1178	12	6	317	261
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	2	0	0	0	0	0	0	0	0
Initial Fut:	9	25	48	271	3	41	301	1178	12	6	317	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	271	3	41	301	1178	12	6	317	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	271	3	41	301	1178	12	6	317	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	271	3	41	301	1178	12	6	317	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.15	0.00	0.02	0.17	0.31	0.01	0.00	0.08	0.15
Crit Moves:		****		****				****			****	
Green Time:	10.0	10.0	10.0	34.0	34.0	34.0	40.2	68.0	68.0	7.0	34.8	34.8
Volume/Cap:	0.07	0.17	0.36	0.60	0.01	0.09	0.56	0.60	0.01	0.06	0.31	0.56
Delay/Veh:	56.4	57.2	59.1	44.7	36.0	36.9	39.4	22.4	15.2	59.2	38.7	43.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	44.7	36.0	36.9	39.4	22.4	15.2	59.2	38.7	43.0
LOS by Move:	E	E	E	D	D	D	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	11	0	1	11	16	0	0	5	10

Note: Queue reported is the number of cars per lane.

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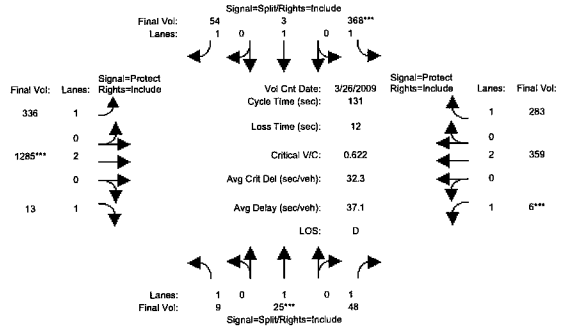
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 4:15-5:15PM												
Base Vol:	9	25	48	369	3	54	336	1286	13	6	360	284
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	369	3	54	336	1286	13	6	360	284
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	0	0	-1	0	0	0	-1	0	0	-1	-1
Initial Fut:	9	25	48	368	3	54	336	1285	13	6	359	283
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	368	3	54	336	1285	13	6	359	283
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	368	3	54	336	1285	13	6	359	283
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	368	3	54	336	1285	13	6	359	283
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.21	0.00	0.03	0.19	0.34	0.01	0.00	0.09	0.16
Crit Moves:		****		****				****		****		
Green Time:	10.0	10.0	10.0	39.1	39.1	39.1	37.9	62.9	62.9	7.0	32.0	32.0
Volume/Cap:	0.07	0.17	0.36	0.70	0.01	0.10	0.66	0.70	0.02	0.06	0.39	0.66
Delay/Veh:	56.4	57.2	59.1	45.2	32.3	33.3	44.2	28.0	17.8	59.2	41.6	48.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	45.2	32.3	33.3	44.2	28.0	17.8	59.2	41.6	48.6
LOS by Move:	E	E	E	D	C	C	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	15	0	2	13	21	0	0	6	11

Note: Queue reported is the number of cars per lane.

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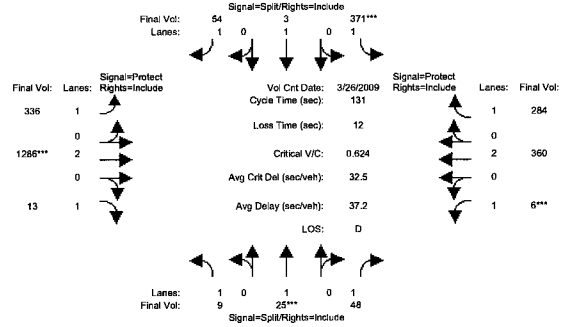
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 4:15-5:15PM												
Base Vol:	9	25	48	368	3	54	336	1285	13	6	359	283
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	368	3	54	336	1285	13	6	359	283
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	3	0	0	0	1	0	0	1	1
Initial Fut:	9	25	48	371	3	54	336	1286	13	6	360	284
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	371	3	54	336	1286	13	6	360	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	371	3	54	336	1286	13	6	360	284
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	371	3	54	336	1286	13	6	360	284
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.21	0.00	0.03	0.19	0.34	0.01	0.00	0.09	0.16
Crit Moves:		****		****				****		****		
Green Time:	10.0	10.0	10.0	39.3	39.3	39.3	37.8	62.7	62.7	7.0	31.9	31.9
Volume/Cap:	0.07	0.17	0.36	0.71	0.01	0.10	0.67	0.71	0.02	0.06	0.39	0.67
Delay/Veh:	56.4	57.2	59.1	45.1	32.2	33.2	44.4	28.2	17.9	59.2	41.7	48.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	45.1	32.2	33.2	44.4	28.2	17.9	59.2	41.7	48.7
LOS by Move:	E	E	E	D	C	C	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	15	0	2	14	21	0	0	6	11

Note: Queue reported is the number of cars per lane.

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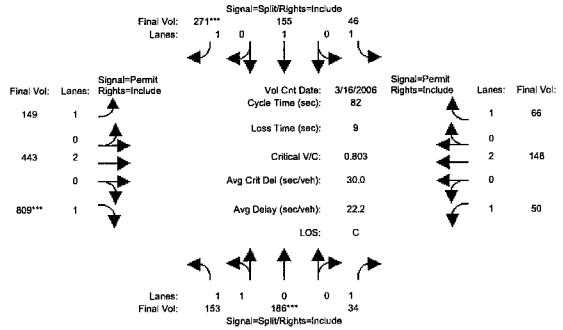
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 4:30-5:30PM												
Base Vol:	153	186	34	46	155	271	149	443	809	50	148	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	186	34	46	155	271	149	443	809	50	148	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	186	34	46	155	271	149	443	809	50	148	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	186	34	46	155	271	149	443	809	50	148	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	186	34	46	155	271	149	443	809	50	148	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	153	186	34	46	155	271	149	443	809	50	148	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.10	0.02	0.03	0.08	0.15	0.09	0.12	0.46	0.03	0.04	0.04
Crit Moves:		****				****			****			
Green Time:	10.0	10.0	10.0	15.8	15.8	15.8	47.2	47.2	47.2	47.2	47.2	47.2
Volume/Cap:	0.72	0.80	0.16	0.14	0.42	0.80	0.15	0.20	0.80	0.05	0.07	0.07
Delay/Veh:	39.9	45.6	32.6	27.6	29.9	44.6	8.1	8.4	18.5	7.6	7.7	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	45.6	32.6	27.6	29.9	44.6	8.1	8.4	18.5	7.6	7.7	7.7
LOS by Move:	D	D	C	C	C	D	A	A	B	A	A	A
HCM2kAvgQ:	6	7	1	1	4	9	2	3	18	1	1	1

Note: Queue reported is the number of cars per lane.

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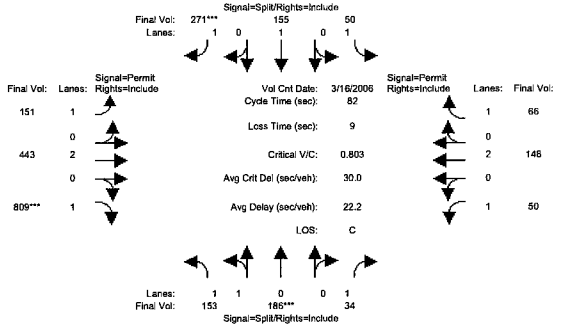
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 4:30-5:30PM												
Base Vol:	153	186	34	46	155	271	149	443	809	50	148	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	186	34	46	155	271	149	443	809	50	148	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	4	0	0	2	0	0	0	0	0
Initial Fut:	153	186	34	50	155	271	151	443	809	50	148	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	186	34	50	155	271	151	443	809	50	148	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	186	34	50	155	271	151	443	809	50	148	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	153	186	34	50	155	271	151	443	809	50	148	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.10	0.02	0.03	0.08	0.15	0.09	0.12	0.46	0.03	0.04	0.04
Crit Moves:		****				****			****			
Green Time:	10.0	10.0	10.0	15.8	15.8	15.8	47.2	47.2	47.2	47.2	47.2	47.2
Volume/Cap:	0.72	0.80	0.16	0.15	0.42	0.80	0.15	0.20	0.80	0.05	0.07	0.07
Delay/Veh:	39.9	45.6	32.6	27.7	29.9	44.6	8.2	8.4	18.5	7.6	7.7	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	45.6	32.6	27.7	29.9	44.6	8.2	8.4	18.5	7.6	7.7	7.7
LOS by Move:	D	D	C	C	C	D	A	A	B	A	A	A
HCM2kAvgQ:	6	7	1	1	4	9	2	3	18	1	1	1

Note: Queue reported is the number of cars per lane.

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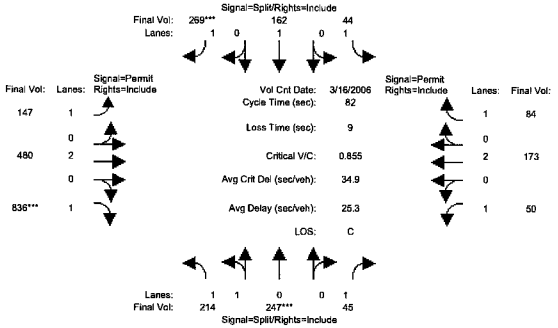
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 4:30-5:30PM												
Base Vol:	214	247	45	46	162	271	149	480	836	50	173	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	214	247	45	46	162	271	149	480	836	50	173	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	0	0	-2	0	-2	-2	0	0	0	0	0
Initial Fut:	214	247	45	44	162	269	147	480	836	50	173	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	214	247	45	44	162	269	147	480	836	50	173	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	247	45	44	162	269	147	480	836	50	173	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	247	45	44	162	269	147	480	836	50	173	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.03	0.03	0.09	0.15	0.08	0.13	0.48	0.03	0.05	0.05
Crit Moves:		****				****			****			
Green Time:	12.5	12.5	12.5	14.7	14.7	14.7	45.8	45.8	45.8	45.8	45.8	45.8
Volume/Cap:	0.80	0.86	0.17	0.14	0.47	0.86	0.15	0.23	0.86	0.05	0.08	0.09
Delay/Veh:	41.7	46.6	30.6	28.5	31.2	52.5	8.8	9.2	22.8	8.2	8.4	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	46.6	30.6	28.5	31.2	52.5	8.8	9.2	22.8	8.2	8.4	8.4
LOS by Move:	D	D	C	C	C	D	A	A	C	A	A	A
HCM2kAvgQ:	8	9	1	1	4	10	2	3	20	1	1	1

Note: Queue reported is the number of cars per lane.

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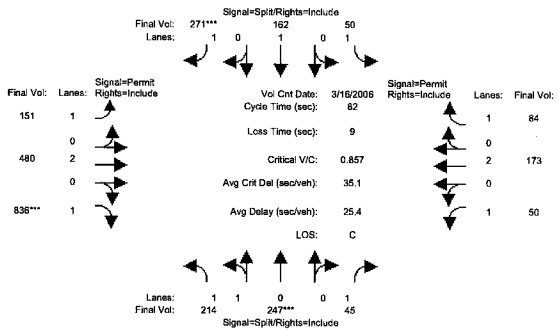
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgnd + Proj PM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 16 Mar 2006 << 4:30-5:30PM												
Base Vol:	214	247	45	44	162	269	147	480	836	50	173	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	214	247	45	44	162	269	147	480	836	50	173	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	6	0	2	4	0	0	0	0	0
Initial Fut:	214	247	45	50	162	271	151	480	836	50	173	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	214	247	45	50	162	271	151	480	836	50	173	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	247	45	50	162	271	151	480	836	50	173	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	247	45	50	162	271	151	480	836	50	173	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.13	0.03	0.03	0.09	0.15	0.09	0.13	0.48	0.03	0.05	0.05
Crit Moves:		****				****			****			
Green Time:	12.4	12.4	12.4	14.8	14.8	14.8	45.7	45.7	45.7	45.7	45.7	45.7
Volume/Cap:	0.81	0.86	0.17	0.16	0.47	0.86	0.15	0.23	0.86	0.05	0.08	0.09
Delay/Veh:	41.8	46.7	30.6	28.6	31.1	52.5	8.9	9.2	23.0	8.3	8.4	8.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	46.7	30.6	28.6	31.1	52.5	8.9	9.2	23.0	8.3	8.4	8.5
LOS by Move:	D	D	C	C	C	D	A	A	C	A	A	A
HCM2kAvgQ:	8	9	1	1	4	10	2	3	20	1	1	1

Note: Queue reported is the number of cars per lane.

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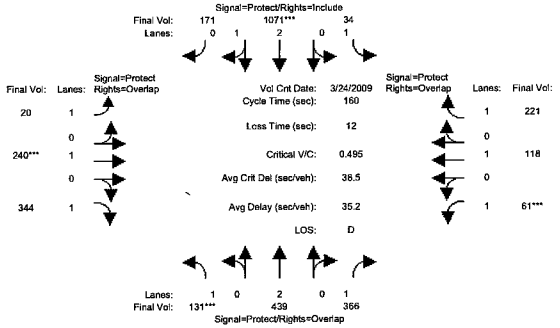
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3421: COMMERCIAL/OAKLAND



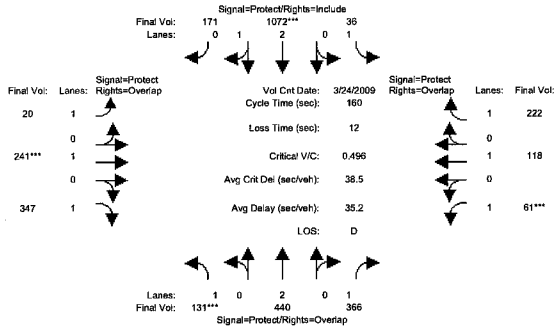
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 4:30-5:30PM												
Base Vol:	131	439	366	34	1071	171	20	240	344	61	118	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	131	439	366	34	1071	171	20	240	344	61	118	221
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	439	366	34	1071	171	20	240	344	61	118	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	439	366	34	1071	171	20	240	344	61	118	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	439	366	34	1071	171	20	240	344	61	118	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	439	366	34	1071	171	20	240	344	61	118	221
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.57	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4828	771	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.21	0.02	0.22	0.22	0.01	0.13	0.20	0.03	0.06	0.13
Crit Moves:	****				****			****		****		
Green Time:	24.2	76.7	87.9	19.2	71.7	71.7	15.1	40.8	65.0	11.3	37.0	56.2
Volume/Cap:	0.49	0.24	0.38	0.16	0.49	0.49	0.12	0.49	0.48	0.49	0.27	0.36
Delay/Veh:	63.8	24.6	20.8	63.5	31.5	31.5	66.7	51.6	35.6	74.7	50.8	38.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.8	24.6	20.8	63.5	31.5	31.5	66.7	51.6	35.6	74.7	50.8	38.9
LOS by Move:	E	C	C	E	C	C	E	D	D	E	D	D
HCM2kAvgQ:	6	6	11	2	14	14	1	10	13	4	5	8

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3421: COMMERCIAL/OAKLAND



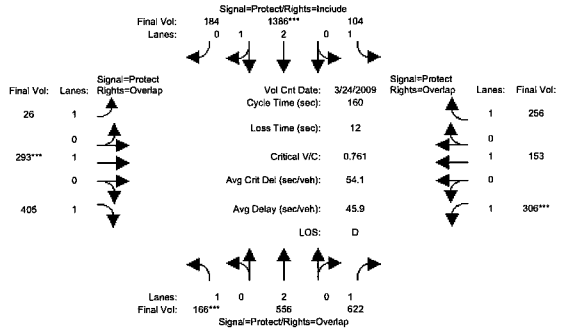
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 4:30-5:30PM												
Base Vol:	131	439	366	34	1071	171	20	240	344	61	118	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	131	439	366	34	1071	171	20	240	344	61	118	221
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	2	1	0	0	1	3	0	0	1
Initial Fut:	131	440	366	36	1072	171	20	241	347	61	118	222
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	440	366	36	1072	171	20	241	347	61	118	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	440	366	36	1072	171	20	241	347	61	118	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	440	366	36	1072	171	20	241	347	61	118	222
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.57	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4829	770	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.21	0.02	0.22	0.22	0.01	0.13	0.20	0.03	0.06	0.13
Crit Moves:	****				****			****		****		
Green Time:	24.2	76.6	87.8	19.2	71.7	71.7	15.2	40.9	65.1	11.2	37.0	56.2
Volume/Cap:	0.50	0.24	0.38	0.17	0.50	0.50	0.12	0.50	0.49	0.50	0.27	0.36
Delay/Veh:	63.8	24.7	20.8	63.6	31.5	31.5	66.6	51.5	35.6	74.8	50.8	38.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.8	24.7	20.8	63.6	31.5	31.5	66.6	51.5	35.6	74.8	50.8	38.9
LOS by Move:	E	C	C	E	C	C	E	D	D	E	D	D
HCM2kAvgQ:	6	6	11	2	14	14	1	10	13	4	5	9

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 4:30-5:30PM												
Base Vol:	166	560	622	105	1388	184	26	294	406	306	153	257
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	560	622	105	1388	184	26	294	406	306	153	257
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-4	0	-1	-2	0	0	-1	-1	0	0	-1
Initial Fut:	166	556	622	104	1386	184	26	293	405	306	153	256
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	556	622	104	1386	184	26	293	405	306	153	256
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	556	622	104	1386	184	26	293	405	306	153	256
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	166	556	622	104	1386	184	26	293	405	306	153	256
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.64	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4943	656	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.36	0.06	0.28	0.28	0.01	0.15	0.23	0.17	0.08	0.15
Crit Moves:	****				****			****		****		
Green Time:	19.9	59.3	96.1	19.5	58.9	58.9	23.2	32.4	52.3	36.7	46.0	65.5
Volume/Cap:	0.76	0.39	0.59	0.49	0.76	0.76	0.10	0.76	0.71	0.76	0.28	0.36
Delay/Veh:	82.3	37.3	20.7	67.3	46.1	46.1	59.6	68.8	51.2	65.8	44.5	33.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.3	37.3	20.7	67.3	46.1	46.1	59.6	68.8	51.2	65.8	44.5	33.0
LOS by Move:	F	D	C	E	D	D	E	E	D	E	D	C
HCM2kAvgQ:	9	10	20	5	23	23	1	15	19	16	6	9

Note: Queue reported is the number of cars per lane.

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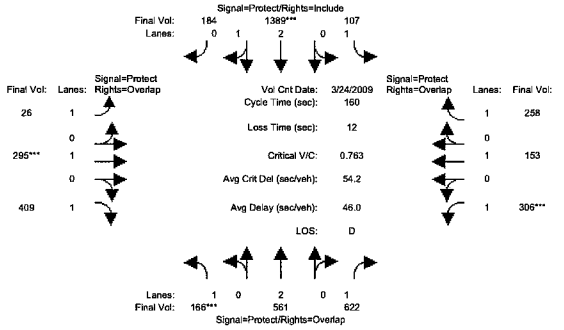
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj PM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Mar 2009 << 4:30-5:30PM												
Base Vol:	166	556	622	104	1386	184	26	293	405	306	153	256
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	556	622	104	1386	184	26	293	405	306	153	256
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	5	0	3	3	0	0	2	4	0	0	2
Initial Fut:	166	561	622	107	1389	184	26	295	409	306	153	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	561	622	107	1389	184	26	295	409	306	153	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	561	622	107	1389	184	26	295	409	306	153	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	166	561	622	107	1389	184	26	295	409	306	153	258
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.64	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4944	655	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.36	0.06	0.28	0.28	0.01	0.16	0.23	0.17	0.08	0.15
Crit Moves:	****				****			****		****		
Green Time:	19.9	58.9	95.5	19.9	58.9	58.9	23.3	32.6	52.4	36.7	45.9	65.9
Volume/Cap:	0.76	0.40	0.60	0.49	0.76	0.76	0.10	0.76	0.71	0.76	0.28	0.36
Delay/Veh:	82.5	37.7	21.1	67.0	46.2	46.2	59.5	68.8	51.4	66.0	44.5	32.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.5	37.7	21.1	67.0	46.2	46.2	59.5	68.8	51.4	66.0	44.5	32.8
LOS by Move:	F	D	C	E	D	D	E	E	D	E	D	C
HCM2kAvgQ:	9	10	20	5	23	23	1	15	20	16	6	9

Note: Queue reported is the number of cars per lane.

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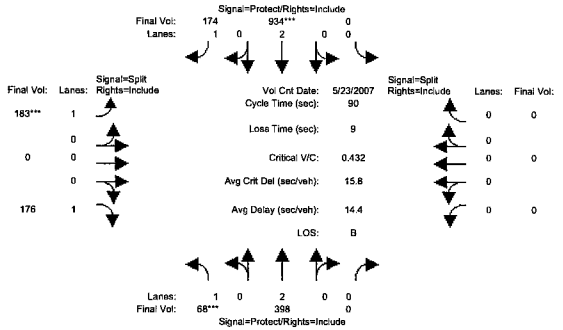
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 4:15-5:15PM												
Base Vol:	68	398	0	0	934	174	183	0	176	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	398	0	0	934	174	183	0	176	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	398	0	0	934	174	183	0	176	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	398	0	0	934	174	183	0	176	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	398	0	0	934	174	183	0	176	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	398	0	0	934	174	183	0	176	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.10	0.00	0.00	0.25	0.10	0.10	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	8.1	59.2	0.0	0.0	51.2	51.2	21.8	0.0	21.8	0.0	0.0	0.0
Volume/Cap:	0.43	0.16	0.00	0.00	0.43	0.17	0.43	0.00	0.42	0.00	0.00	0.00
Delay/Veh:	40.7	5.9	0.0	0.0	11.3	9.4	29.6	0.0	29.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.7	5.9	0.0	0.0	11.3	9.4	29.6	0.0	29.4	0.0	0.0	0.0
LOS by Move:	D	A	A	A	B	A	C	A	C	A	A	A
HCM2kAvgQ:	2	2	0	0	7	2	5	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

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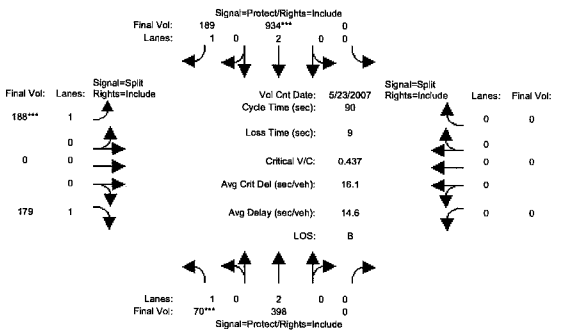
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 4:15-5:15PM												
Base Vol:	68	398	0	0	934	174	183	0	176	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	398	0	0	934	174	183	0	176	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	2	0	0	0	0	15	5	0	3	0	0	0
Initial Fut:	70	398	0	0	934	189	188	0	179	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	398	0	0	934	189	188	0	179	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	398	0	0	934	189	188	0	179	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	398	0	0	934	189	188	0	179	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.10	0.00	0.00	0.25	0.11	0.11	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	8.2	58.9	0.0	0.0	50.6	50.6	22.1	0.0	22.1	0.0	0.0	0.0
Volume/Cap:	0.44	0.16	0.00	0.00	0.44	0.19	0.44	0.00	0.42	0.00	0.00	0.00
Delay/Veh:	40.6	6.0	0.0	0.0	11.6	9.7	29.4	0.0	29.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	6.0	0.0	0.0	11.6	9.7	29.4	0.0	29.2	0.0	0.0	0.0
LOS by Move:	D	A	A	A	B	A	C	A	C	A	A	A
HCM2kAvgQ:	2	2	0	0	7	3	5	0	5	0	0	0

Note: Queue reported is the number of cars per lane.

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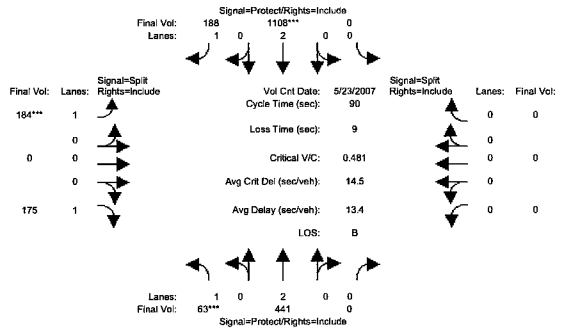
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	10		0	10	0		0	0
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 4:15-5:15PM																
Base Vol:	68		441	0	0		1108	201	190		0	178	0		0	0
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	68		441	0	0		1108	201	190		0	178	0		0	0
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
84students:	-5		0	0	0		0	-13	-6		0	-3	0		0	0
Initial Fut:	63		441	0	0		1108	188	184		0	175	0		0	0
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	63		441	0	0		1108	188	184		0	175	0		0	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	63		441	0	0		1108	188	184		0	175	0		0	0
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	63		441	0	0		1108	188	184		0	175	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	1.00		0.00	1.00	0.00		0.00	0.00
Final Sat.:	1750		3800	0	0		3800	1750	1750		0	1750	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.04		0.12	0.00	0.00		0.29	0.11	0.11		0.00	0.10	0.00		0.00	0.00
Crit Moves:	****						****		****							
Green Time:	7.0		61.4	0.0	0.0		54.4	54.4	19.6		0.0	19.6	0.0		0.0	0.0
Volume/Cap:	0.46		0.17	0.00	0.00		0.48	0.18	0.48		0.00	0.46	0.00		0.00	0.00
Delay/Veh:	42.2		5.2	0.0	0.0		10.1	8.0	31.7		0.0	31.5	0.0		0.0	0.0
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	42.2		5.2	0.0	0.0		10.1	8.0	31.7		0.0	31.5	0.0		0.0	0.0
LOS by Move:	D		A	A	A		B	A	C		A	C	A		A	A
HCM2kAvgQ:	2		2	0	0		8	2	5		0	5	0		0	0

Note: Queue reported is the number of cars per lane.

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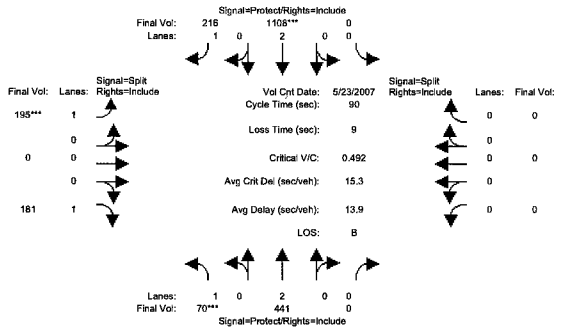
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj PM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	10		0	10	0		0	0
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module: >> Count Date: 23 May 2007 << 4:15-5:15PM																
Base Vol:	63		441	0	0		1108	188	184		0	175	0		0	0
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	63		441	0	0		1108	188	184		0	175	0		0	0
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
ProjTrips:	7		0	0	0		0	28	11		0	6	0		0	0
Initial Fut:	70		441	0	0		1108	216	195		0	181	0		0	0
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	70		441	0	0		1108	216	195		0	181	0		0	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	70		441	0	0		1108	216	195		0	181	0		0	0
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	70		441	0	0		1108	216	195		0	181	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	1.00		0.00	1.00	0.00		0.00	0.00
Final Sat.:	1750		3800	0	0		3800	1750	1750		0	1750	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.04		0.12	0.00	0.00		0.29	0.12	0.11		0.00	0.10	0.00		0.00	0.00
Crit Moves:	****						****		****							
Green Time:	7.3		60.6	0.0	0.0		53.3	53.3	20.4		0.0	20.4	0.0		0.0	0.0
Volume/Cap:	0.49		0.17	0.00	0.00		0.49	0.21	0.49		0.00	0.46	0.00		0.00	0.00
Delay/Veh:	42.2		5.5	0.0	0.0		10.7	8.6	31.3		0.0	30.9	0.0		0.0	0.0
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	42.2		5.5	0.0	0.0		10.7	8.6	31.3		0.0	30.9	0.0		0.0	0.0
LOS by Move:	D		A	A	A		B	A	C		A	C	A		A	A
HCM2kAvgQ:	2		2	0	0		9	3	6		0	5	0		0	0

Note: Queue reported is the number of cars per lane.

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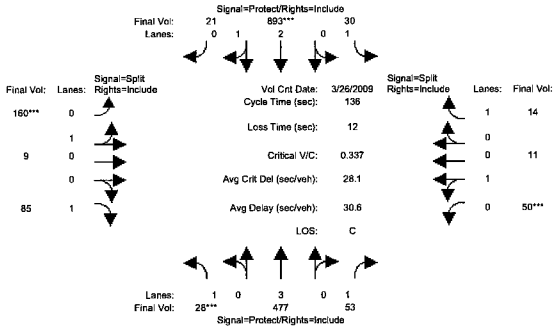
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #3866: BERGER/OAKLAND



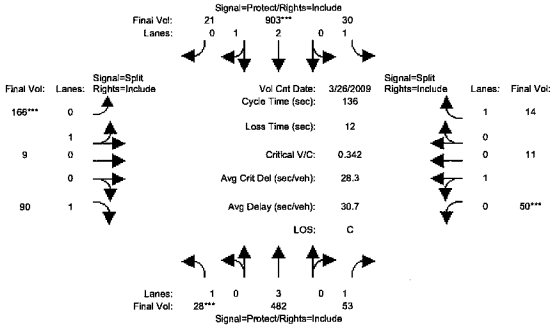
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 5:00-6:00PM												
Base Vol:	28	477	53	30	893	21	160	9	85	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	477	53	30	893	21	160	9	85	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	477	53	30	893	21	160	9	85	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	477	53	30	893	21	160	9	85	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	477	53	30	893	21	160	9	85	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	477	53	30	893	21	160	9	85	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.95	0.05	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5471	129	1704	96	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.16	0.16	0.09	0.09	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	45.0	45.0	27.7	65.6	65.6	37.7	37.7	37.7	13.6	13.6	13.6
Volume/Cap:	0.31	0.25	0.09	0.08	0.34	0.34	0.34	0.34	0.17	0.34	0.34	0.08
Delay/Veh:	70.9	33.6	31.7	44.4	22.1	22.1	41.0	41.0	38.1	62.0	62.0	56.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.6	31.7	44.4	22.1	22.1	41.0	41.0	38.1	62.0	62.0	56.4
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Exist + Proj PM

Intersection #3866: BERGER/OAKLAND



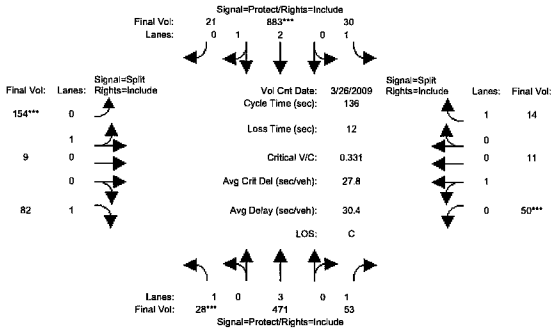
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 5:00-6:00PM												
Base Vol:	28	477	53	30	893	21	160	9	85	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	477	53	30	893	21	160	9	85	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	5	0	0	10	0	6	0	5	0	0	0
Initial Fut:	28	482	53	30	903	21	166	9	90	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	482	53	30	903	21	166	9	90	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	482	53	30	903	21	166	9	90	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	482	53	30	903	21	166	9	90	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.95	0.05	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5473	127	1707	93	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.17	0.17	0.10	0.10	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	44.9	44.9	27.3	65.2	65.2	38.4	38.4	38.4	13.4	13.4	13.4
Volume/Cap:	0.31	0.26	0.09	0.09	0.34	0.34	0.34	0.34	0.18	0.34	0.34	0.08
Delay/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Background PM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 5:00-6:00PM												
Base Vol:	28	477	53	30	893	21	160	9	85	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	477	53	30	893	21	160	9	85	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
84students:	0	-6	0	0	-10	0	-6	0	-3	0	0	0
Initial Fut:	28	471	53	30	883	21	154	9	82	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	471	53	30	883	21	154	9	82	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	471	53	30	883	21	154	9	82	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	471	53	30	883	21	154	9	82	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.94	0.06	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5470	130	1701	99	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.16	0.16	0.09	0.09	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	45.0	45.0	28.0	66.1	66.1	37.1	37.1	37.1	13.9	13.9	13.9
Volume/Cap:	0.31	0.25	0.09	0.08	0.33	0.33	0.33	0.33	0.17	0.33	0.33	0.08
Delay/Veh:	70.9	33.5	31.7	44.0	21.8	21.8	41.4	41.4	38.5	61.6	61.6	56.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.5	31.7	44.0	21.8	21.8	41.4	41.4	38.5	61.6	61.6	56.1
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

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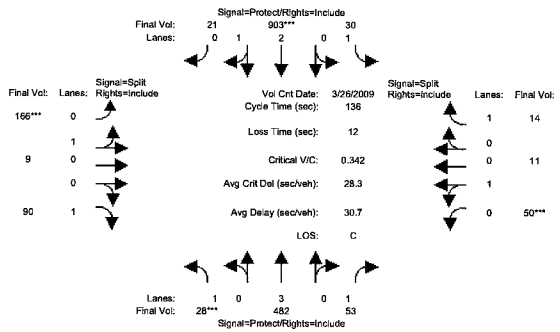
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Bkgrd + Proj PM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Mar 2009 << 5:00-6:00PM												
Base Vol:	28	471	53	30	883	21	154	9	82	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	471	53	30	883	21	154	9	82	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	11	0	0	20	0	12	0	8	0	0	0
Initial Fut:	28	482	53	30	903	21	166	9	90	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	482	53	30	903	21	166	9	90	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	482	53	30	903	21	166	9	90	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	482	53	30	903	21	166	9	90	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.95	0.05	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5473	127	1707	93	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.17	0.17	0.10	0.10	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	44.9	44.9	27.3	65.2	65.2	38.4	38.4	38.4	13.4	13.4	13.4
Volume/Cap:	0.31	0.26	0.09	0.09	0.34	0.34	0.34	0.34	0.18	0.34	0.34	0.08
Delay/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

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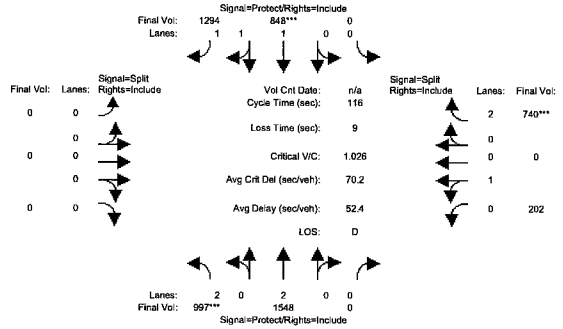
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3021: 101/OAKLAND (N)



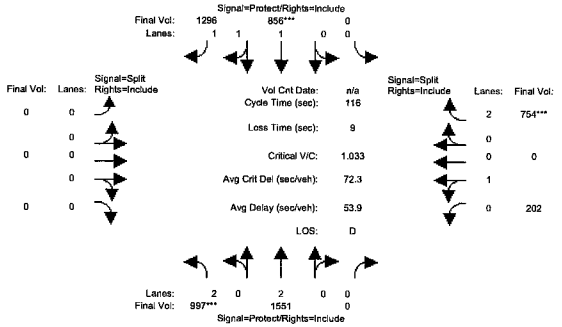
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	997	1548	0	0	848	1294	0	0	0	202	0	740
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	997	1548	0	0	848	1294	0	0	0	202	0	740
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	997	1548	0	0	848	1294	0	0	0	202	0	740
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	997	1548	0	0	848	1294	0	0	0	202	0	740
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	997	1548	0	0	848	1294	0	0	0	202	0	740
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	997	1548	0	0	848	1294	0	0	0	202	0	740
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	2.00	2.00	0.00	0.00	1.13	1.87	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	3150	3800	0	0	2145	3274	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.32	0.41	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.11	0.00	0.23
Crit Moves:	****				****							****
Green Time:	35.8	80.4	0.0	0.0	44.7	44.7	0.0	0.0	0.0	26.6	0.0	26.6
Volume/Cap:	1.03	0.59	0.00	0.00	1.03	1.03	0.00	0.00	0.00	0.49	0.00	1.03
Delay/Veh:	75.9	9.5	0.0	0.0	62.4	62.4	0.0	0.0	0.0	39.8	0.0	85.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.9	9.5	0.0	0.0	62.4	62.4	0.0	0.0	0.0	39.8	0.0	85.1
LOS by Move:	E	A	A	A	E	E	A	A	A	D	A	F
HCM2kAvgQ:	25	14	0	0	32	32	0	0	0	7	0	23

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	997	1548	0	0	848	1294	0	0	0	202	0	740
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	997	1548	0	0	848	1294	0	0	0	202	0	740
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	3	0	0	8	2	0	0	0	0	0	14
Initial Fut:	997	1551	0	0	856	1296	0	0	0	202	0	754
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	997	1551	0	0	856	1296	0	0	0	202	0	754
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	997	1551	0	0	856	1296	0	0	0	202	0	754
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	997	1551	0	0	856	1296	0	0	0	202	0	754
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	2.00	2.00	0.00	0.00	1.13	1.87	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	3150	3800	0	0	2156	3264	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.32	0.41	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.11	0.00	0.24
Crit Moves:	****				****							****
Green Time:	35.5	80.1	0.0	0.0	44.6	44.6	0.0	0.0	0.0	26.9	0.0	26.9
Volume/Cap:	1.03	0.59	0.00	0.00	1.03	1.03	0.00	0.00	0.00	0.48	0.00	1.03
Delay/Veh:	78.0	9.7	0.0	0.0	64.5	64.5	0.0	0.0	0.0	39.5	0.0	86.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.0	9.7	0.0	0.0	64.5	64.5	0.0	0.0	0.0	39.5	0.0	86.7
LOS by Move:	E	A	A	A	E	E	A	A	A	D	A	F
HCM2kAvgQ:	25	14	0	0	33	33	0	0	0	7	0	23

Note: Queue reported is the number of cars per lane.

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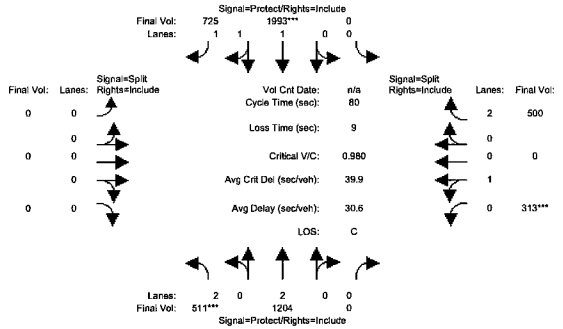
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	511	1204	0	0	1993	725	0	0	0	313	0	500
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	511	1204	0	0	1993	725	0	0	0	313	0	500
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	511	1204	0	0	1993	725	0	0	0	313	0	500
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	511	1204	0	0	1993	725	0	0	0	313	0	500
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	511	1204	0	0	1993	725	0	0	0	313	0	500
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	511	1204	0	0	1993	725	0	0	0	313	0	500
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	3150	3800	0	0	3736	1800	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.00	0.00	0.53	0.40	0.00	0.00	0.00	0.17	0.00	0.16
Crit Moves:	****				****					****		
Green Time:	13.2	56.8	0.0	0.0	43.6	43.6	0.0	0.0	0.0	14.2	0.0	14.2
Volume/Cap:	0.98	0.45	0.00	0.00	0.98	0.74	0.00	0.00	0.00	0.98	0.00	0.89
Delay/Veh:	67.3	5.0	0.0	0.0	30.5	14.7	0.0	0.0	0.0	77.4	0.0	48.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.3	5.0	0.0	0.0	30.5	14.7	0.0	0.0	0.0	77.4	0.0	48.9
LOS by Move:	E	A	A	A	C	B	A	A	A	E	A	D
HCM2kAvgQ:	9	6	0	0	28	14	0	0	0	13	0	11

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
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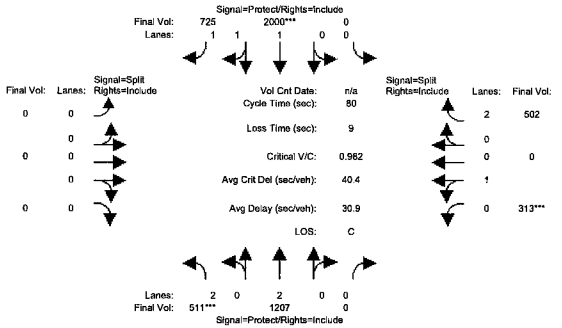
Intersection #3021: 101/OAKLAND (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	0	0	0	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	511	1204	0	0	1993	725	0	0	0	313	0	500
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	511	1204	0	0	1993	725	0	0	0	313	0	500
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	3	0	0	7	0	0	0	0	0	0	2
Initial Fut:	511	1207	0	0	2000	725	0	0	0	313	0	502
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	511	1207	0	0	2000	725	0	0	0	313	0	502
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	511	1207	0	0	2000	725	0	0	0	313	0	502
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	511	1207	0	0	2000	725	0	0	0	313	0	502
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.83
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	3150	3800	0	0	3736	1800	0	0	0	1800	0	3150
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.00	0.00	0.54	0.40	0.00	0.00	0.00	0.17	0.00	0.16
Crit Moves:	****				****					****		
Green Time:	13.2	56.8	0.0	0.0	43.6	43.6	0.0	0.0	0.0	14.2	0.0	14.2
Volume/Cap:	0.98	0.45	0.00	0.00	0.98	0.74	0.00	0.00	0.00	0.98	0.00	0.90
Delay/Veh:	67.9	5.0	0.0	0.0	30.9	14.7	0.0	0.0	0.0	78.1	0.0	49.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	5.0	0.0	0.0	30.9	14.7	0.0	0.0	0.0	78.1	0.0	49.8
LOS by Move:	E	A	A	A	C	B	A	A	A	E	A	D
HCM2kAvgQ:	9	6	0	0	28	14	0	0	0	13	0	11

Note: Queue reported is the number of cars per lane.

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Challenger School
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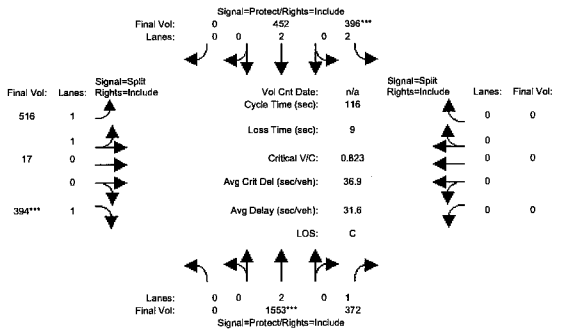
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1553	372	396	452	0	516	17	394	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1553	372	396	452	0	516	17	394	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1553	372	396	452	0	516	17	394	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1553	372	396	452	0	516	17	394	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1553	372	396	452	0	516	17	394	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1553	372	396	452	0	516	17	394	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.94	0.06	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3437	113	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.41	0.21	0.13	0.12	0.00	0.15	0.15	0.23	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	57.6	57.6	17.7	75.3	0.0	31.7	31.7	31.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.82	0.43	0.82	0.18	0.00	0.55	0.55	0.82	0.00	0.00	0.00
Delay/Veh:	0.0	28.0	19.0	58.6	8.1	0.0	36.7	36.7	50.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.0	19.0	58.6	8.1	0.0	36.7	36.7	50.6	0.0	0.0	0.0
LOS by Move:	A	C	B	E	A	A	D	D	D	A	A	A
HCM2kAvgQ:	0	25	9	8	3	0	9	9	16	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
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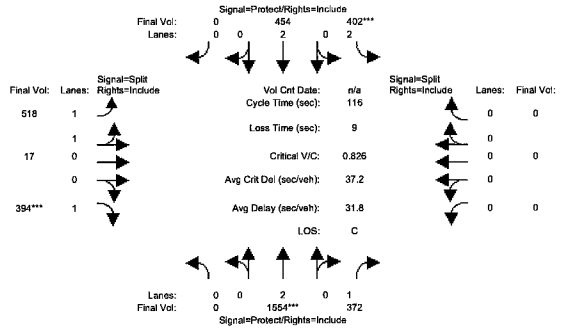
Cum With Proj AM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	1553	372	396	452	0	516	17	394	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1553	372	396	452	0	516	17	394	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	6	2	0	2	0	0	0	0	0
Initial Fut:	0	1554	372	402	454	0	518	17	394	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1554	372	402	454	0	518	17	394	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1554	372	402	454	0	518	17	394	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1554	372	402	454	0	518	17	394	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.92	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.94	0.06	1.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3437	113	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.41	0.21	0.13	0.12	0.00	0.15	0.15	0.23	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green Time:	0.0	57.4	57.4	17.9	75.4	0.0	31.6	31.6	31.6	0.0	0.0	0.0
Volume/Cap:	0.00	0.83	0.43	0.83	0.18	0.00	0.55	0.55	0.83	0.00	0.00	0.00
Delay/Veh:	0.0	28.1	19.1	58.6	8.1	0.0	36.8	36.8	50.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	28.1	19.1	58.6	8.1	0.0	36.8	36.8	50.9	0.0	0.0	0.0
LOS by Move:	A	C	B	E	A	A	D	D	D	A	A	A
HCM2kAvgQ:	0	25	9	8	3	0	9	9	17	0	0	0

Note: Queue reported is the number of cars per lane.

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Challenger School
Gish Road
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Level Of Service Computation Report
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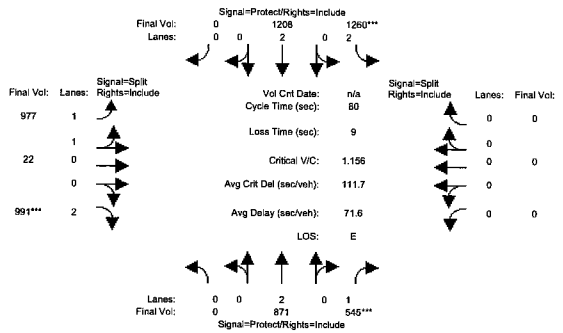
Cum No Proj PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	871	545	1260	1208	0	977	22	991	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	871	545	1260	1208	0	977	22	991	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	871	545	1260	1208	0	977	22	991	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	871	545	1260	1208	0	977	22	991	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	871	545	1260	1208	0	977	22	991	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	871	545	1260	1208	0	977	22	991	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.96	0.04	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3472	78	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.31	0.40	0.32	0.00	0.28	0.28	0.31	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	21.6	21.6	27.7	49.2	0.0	21.8	21.8	21.8	0.0	0.0	0.0
Volume/Cap:	0.00	0.85	1.16	1.16	0.52	0.00	1.03	1.03	1.16	0.00	0.00	0.00
Delay/Veh:	0.0	34.6	121.1	107.0	8.9	0.0	67.2	67.2	112.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	34.6	121.1	107.0	8.9	0.0	67.2	67.2	112.5	0.0	0.0	0.0
LOS by Move:	A	C	F	F	A	A	E	E	F	A	A	A
HCM2kAvgQ:	0	13	28	30	8	0	21	21	28	0	0	0

Note: Queue reported is the number of cars per lane.

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Gish Road
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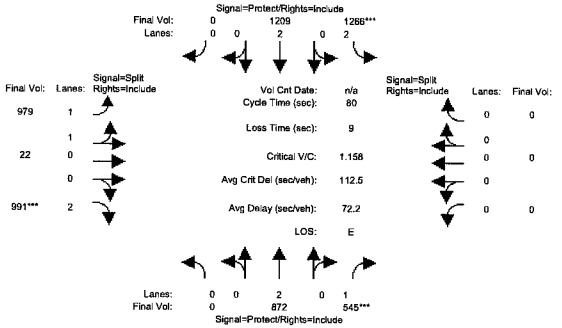
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj PM

Intersection #3022: 101/OAKLAND (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	10	10	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	871	545	1260	1208	0	977	22	991	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	871	545	1260	1208	0	977	22	991	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	6	1	0	2	0	0	0	0	0
Initial Fut:	0	872	545	1266	1209	0	979	22	991	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	872	545	1266	1209	0	979	22	991	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	872	545	1266	1209	0	979	22	991	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	872	545	1266	1209	0	979	22	991	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.83	1.00	0.92	0.93	0.95	0.83	0.92	1.00	0.92
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	1.96	0.04	2.00	0.00	0.00	0.00
Final Sat.:	0	3800	1750	3150	3800	0	3472	78	3150	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.31	0.40	0.32	0.00	0.28	0.28	0.31	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green Time:	0.0	21.5	21.5	27.8	49.3	0.0	21.7	21.7	21.7	0.0	0.0	0.0
Volume/Cap:	0.00	0.85	1.16	1.16	0.52	0.00	1.04	1.04	1.16	0.00	0.00	0.00
Delay/Veh:	0.0	34.8	122.0	107.8	8.9	0.0	68.5	68.5	113.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	34.8	122.0	107.8	8.9	0.0	68.5	68.5	113.4	0.0	0.0	0.0
LOS by Move:	A	C	F	F	A	A	E	E	F	A	A	A
HCM2kAvgQ:	0	13	28	30	8	0	21	21	28	0	0	0

Note: Queue reported is the number of cars per lane.

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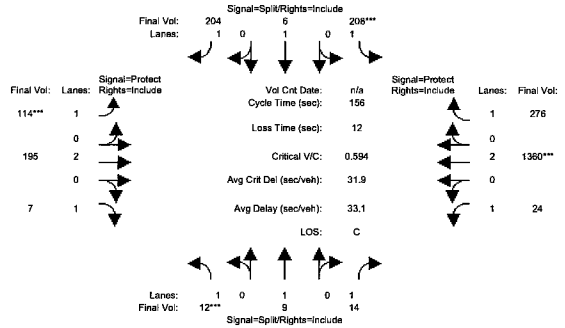
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	12	9	14	208	6	204	114	195	7	24	1360	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	208	6	204	114	195	7	24	1360	276
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	9	14	208	6	204	114	195	7	24	1360	276
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	208	6	204	114	195	7	24	1360	276
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	208	6	204	114	195	7	24	1360	276
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	208	6	204	114	195	7	24	1360	276
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.12	0.00	0.12	0.07	0.05	0.00	0.01	0.36	0.16
Crit Moves:	****			****			****				****	
Green Time:	10.0	10.0	10.0	29.4	29.4	29.4	16.1	61.5	61.5	43.1	88.5	88.5
Volume/Cap:	0.11	0.07	0.12	0.63	0.02	0.62	0.63	0.13	0.01	0.05	0.63	0.28
Delay/Veh:	69.2	68.9	69.4	62.2	51.6	61.7	74.1	30.2	28.7	41.5	23.4	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	62.2	51.6	61.7	74.1	30.2	28.7	41.5	23.4	17.5
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	11	0	10	7	3	0	1	21	7

Note: Queue reported is the number of cars per lane.

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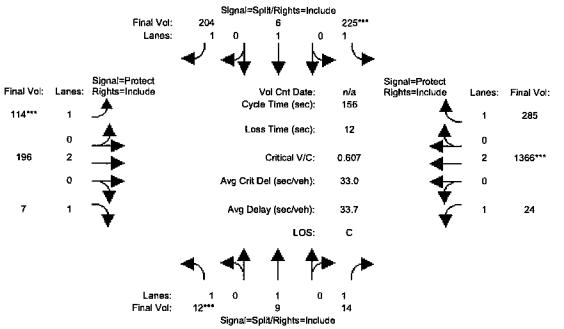
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	12	9	14	208	6	204	114	195	7	24	1360	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	9	14	208	6	204	114	195	7	24	1360	276
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	17	0	0	0	1	0	0	6	9
Initial Fut:	12	9	14	225	6	204	114	196	7	24	1366	285
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	9	14	225	6	204	114	196	7	24	1366	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	9	14	225	6	204	114	196	7	24	1366	285
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	9	14	225	6	204	114	196	7	24	1366	285
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.13	0.00	0.12	0.07	0.05	0.00	0.01	0.36	0.16
Crit Moves:	****			****			****				****	
Green Time:	10.0	10.0	10.0	31.1	31.1	31.1	15.8	60.5	60.5	42.4	87.1	87.1
Volume/Cap:	0.11	0.07	0.12	0.64	0.02	0.58	0.64	0.13	0.01	0.05	0.64	0.29
Delay/Veh:	69.2	68.9	69.4	61.4	50.1	59.1	75.3	30.9	29.4	42.0	24.5	18.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	68.9	69.4	61.4	50.1	59.1	75.3	30.9	29.4	42.0	24.5	18.4
LOS by Move:	E	E	E	E	D	E	E	C	C	D	C	B
HCM2kAvgQ:	1	0	1	11	0	10	7	3	0	1	21	7

Note: Queue reported is the number of cars per lane.

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Challenger School
Gish Road
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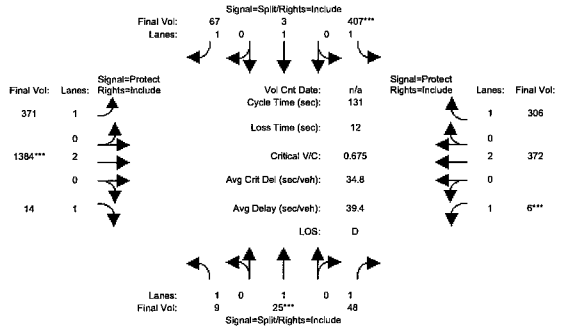
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	9	25	48	407	3	67	371	1384	14	6	372	306
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	407	3	67	371	1384	14	6	372	306
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	25	48	407	3	67	371	1384	14	6	372	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	407	3	67	371	1384	14	6	372	306
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	407	3	67	371	1384	14	6	372	306
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	407	3	67	371	1384	14	6	372	306
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.23	0.00	0.04	0.21	0.36	0.01	0.00	0.10	0.17
Crit Moves:		****		****				****		****		
Green Time:	10.0	10.0	10.0	39.8	39.8	39.8	37.9	62.2	62.2	7.0	31.3	31.3
Volume/Cap:	0.07	0.17	0.36	0.77	0.01	0.13	0.73	0.77	0.02	0.06	0.41	0.73
Delay/Veh:	56.4	57.2	59.1	48.0	31.8	33.2	47.4	30.4	18.2	59.2	42.4	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	48.0	31.8	33.2	47.4	30.4	18.2	59.2	42.4	52.5
LOS by Move:	E	E	E	D	C	C	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	17	0	2	16	24	0	0	6	12

Note: Queue reported is the number of cars per lane.

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Challenger School
Gish Road
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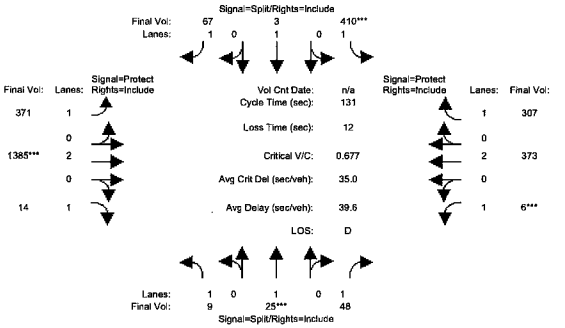
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj PM

Intersection #3288: 880/BAYSHORE (W)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	9	25	48	407	3	67	371	1384	14	6	372	306
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	25	48	407	3	67	371	1384	14	6	372	306
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	3	0	0	0	1	0	0	1	1
Initial Fut:	9	25	48	410	3	67	371	1385	14	6	373	307
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	25	48	410	3	67	371	1385	14	6	373	307
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	25	48	410	3	67	371	1385	14	6	373	307
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	25	48	410	3	67	371	1385	14	6	373	307
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.03	0.23	0.00	0.04	0.21	0.36	0.01	0.00	0.10	0.18
Crit Moves:		****		****				****		****		
Green Time:	10.0	10.0	10.0	39.9	39.9	39.9	37.8	62.1	62.1	7.0	31.3	31.3
Volume/Cap:	0.07	0.17	0.36	0.77	0.01	0.13	0.73	0.77	0.02	0.06	0.41	0.73
Delay/Veh:	56.4	57.2	59.1	48.1	31.7	33.0	47.6	30.6	18.3	59.2	42.4	52.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	57.2	59.1	48.1	31.7	33.0	47.6	30.6	18.3	59.2	42.4	52.7
LOS by Move:	E	E	E	D	C	C	D	C	B	E	D	D
HCM2kAvgQ:	0	1	2	18	0	2	16	24	0	0	6	13

Note: Queue reported is the number of cars per lane.

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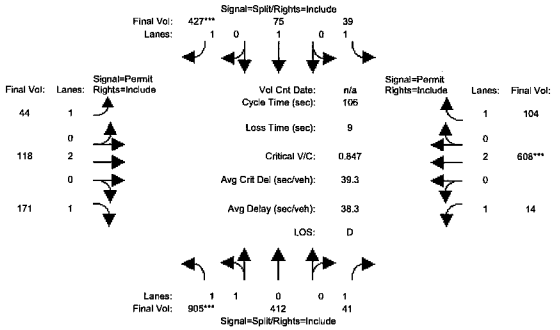
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	905	412	41	39	75	427	44	118	171	14	608	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	905	412	41	39	75	427	44	118	171	14	608	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	905	412	41	39	75	427	44	118	171	14	608	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	905	412	41	39	75	427	44	118	171	14	608	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	905	412	41	39	75	427	44	118	171	14	608	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	905	412	41	39	75	427	44	118	171	14	608	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.38	0.62	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2439	1110	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.02	0.02	0.04	0.24	0.03	0.03	0.10	0.01	0.16	0.06
Crit Moves:	****					****					****	
Green Time:	46.4	46.4	46.4	30.5	30.5	30.5	20.0	20.0	20.0	20.0	20.0	20.0
Volume/Cap:	0.85	0.85	0.05	0.08	0.14	0.85	0.13	0.16	0.52	0.04	0.85	0.31
Delay/Veh:	31.1	31.1	17.2	27.5	28.1	48.1	35.9	36.1	40.1	35.2	50.7	37.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.1	31.1	17.2	27.5	28.1	48.1	35.9	36.1	40.1	35.2	50.7	37.6
LOS by Move:	C	C	B	C	C	D	D	D	D	D	D	D
HCM2kAvgQ:	23	23	1	1	2	17	1	2	5	0	12	3

Note: Queue reported is the number of cars per lane.

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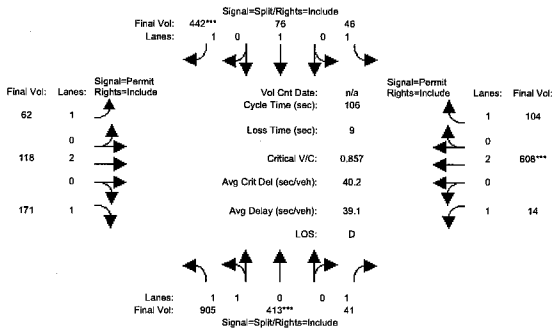
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3289: 880/BAYSHORE (E)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	905	412	41	39	75	427	44	118	171	14	608	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	905	412	41	39	75	427	44	118	171	14	608	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	1	0	7	1	15	18	0	0	0	0	0
Initial Fut:	905	413	41	46	76	442	62	118	171	14	608	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	905	413	41	46	76	442	62	118	171	14	608	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	905	413	41	46	76	442	62	118	171	14	608	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	905	413	41	46	76	442	62	118	171	14	608	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.38	0.62	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2437	1112	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.02	0.03	0.04	0.25	0.04	0.03	0.10	0.01	0.16	0.06
Crit Moves:		****				****					****	
Green Time:	45.9	45.9	45.9	31.3	31.3	31.3	19.8	19.8	19.8	19.8	19.8	19.8
Volume/Cap:	0.86	0.86	0.05	0.09	0.14	0.86	0.19	0.17	0.52	0.04	0.86	0.32
Delay/Veh:	32.1	32.1	17.4	27.1	27.6	48.6	36.6	36.3	40.4	35.4	51.8	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.1	32.1	17.4	27.1	27.6	48.6	36.6	36.3	40.4	35.4	51.8	37.8
LOS by Move:	C	C	B	C	C	D	D	D	D	D	D	D
HCM2kAvgQ:	23	23	1	1	2	18	2	2	5	0	12	3

Note: Queue reported is the number of cars per lane.

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Challenger School
Gish Road
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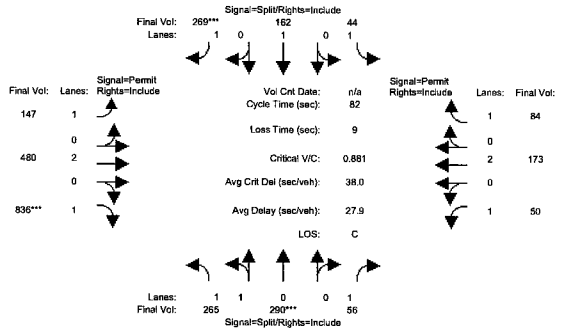
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3289: 880/BAYSHORE (E)



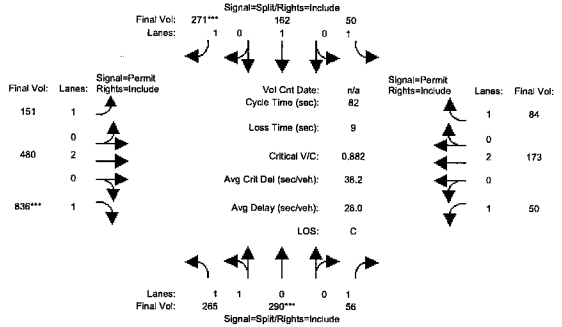
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	265	290	56	44	162	269	147	480	836	50	173	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	265	290	56	44	162	269	147	480	836	50	173	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	265	290	56	44	162	269	147	480	836	50	173	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	265	290	56	44	162	269	147	480	836	50	173	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	290	56	44	162	269	147	480	836	50	173	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	265	290	56	44	162	269	147	480	836	50	173	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.03	0.03	0.09	0.15	0.08	0.13	0.48	0.03	0.05	0.05
Crit Moves:		****				****			****			
Green Time:	14.2	14.2	14.2	14.3	14.3	14.3	44.5	44.5	44.5	44.5	44.5	44.5
Volume/Cap:	0.87	0.88	0.18	0.14	0.49	0.88	0.15	0.23	0.88	0.05	0.08	0.09
Delay/Veh:	45.8	46.7	29.2	28.9	31.7	57.3	9.4	9.9	26.0	8.9	9.0	9.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.8	46.7	29.2	28.9	31.7	57.3	9.4	9.9	26.0	8.9	9.0	9.1
LOS by Move:	D	D	C	C	C	E	A	A	C	A	A	A
HCM2kAvgQ:	10	10	1	1	4	11	2	3	20	1	1	1

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj PM

Intersection #3289: 880/BAYSHORE (E)



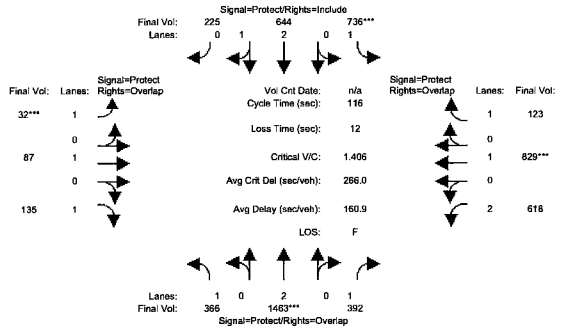
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	265	290	56	44	162	269	147	480	836	50	173	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	265	290	56	44	162	269	147	480	836	50	173	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	0	0	6	0	2	4	0	0	0	0	0
Initial Fut:	265	290	56	50	162	271	151	480	836	50	173	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	265	290	56	50	162	271	151	480	836	50	173	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	290	56	50	162	271	151	480	836	50	173	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	265	290	56	50	162	271	151	480	836	50	173	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.03	0.03	0.09	0.15	0.09	0.13	0.48	0.03	0.05	0.05
Crit Moves:		****				****			****			
Green Time:	14.2	14.2	14.2	14.4	14.4	14.4	44.4	44.4	44.4	44.4	44.4	44.4
Volume/Cap:	0.88	0.88	0.18	0.16	0.49	0.88	0.16	0.23	0.88	0.05	0.08	0.09
Delay/Veh:	46.0	46.9	29.3	28.9	31.6	57.3	9.5	9.9	26.2	8.9	9.0	9.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.0	46.9	29.3	28.9	31.6	57.3	9.5	9.9	26.2	8.9	9.0	9.1
LOS by Move:	D	D	C	C	C	E	A	A	C	A	A	A
HCM2kAvgQ:	10	11	1	1	4	11	2	3	21	1	1	1

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3421: COMMERCIAL/OAKLAND



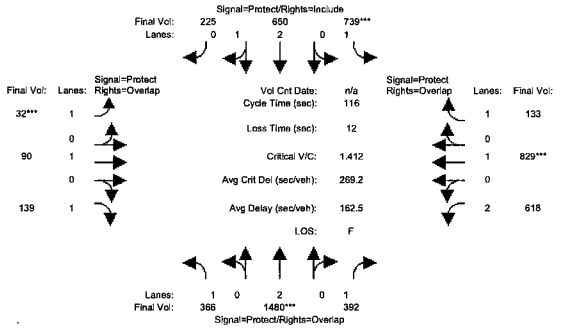
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	366	1463	392	736	644	225	32	87	135	618	829	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	366	1463	392	736	644	225	32	87	135	618	829	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	366	1463	392	736	644	225	32	87	135	618	829	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	366	1463	392	736	644	225	32	87	135	618	829	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	366	1463	392	736	644	225	32	87	135	618	829	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	366	1463	392	736	644	225	32	87	135	618	829	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.19	0.81	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4148	1449	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.39	0.22	0.42	0.16	0.16	0.02	0.05	0.08	0.20	0.44	0.07
Crit Moves:		****		****			****				****	
Green Time:	36.1	30.1	58.6	32.8	26.8	26.8	7.0	12.5	48.7	28.5	34.1	66.9
Volume/Cap:	0.67	1.49	0.44	1.49	0.67	0.67	0.30	0.42	0.18	0.80	1.49	0.12
Delay/Veh:	38.1	267	18.7	270.5	42.0	42.0	53.8	49.8	21.3	46.8	269	11.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	267	18.7	270.5	42.0	42.0	53.8	49.8	21.3	46.8	269	11.2
LOS by Move:	D	F	B	F	D	D	D	D	C	D	F	B
HCM2kAvgQ:	12	55	9	60	10	10	1	3	3	14	63	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3421: COMMERCIAL/OAKLAND



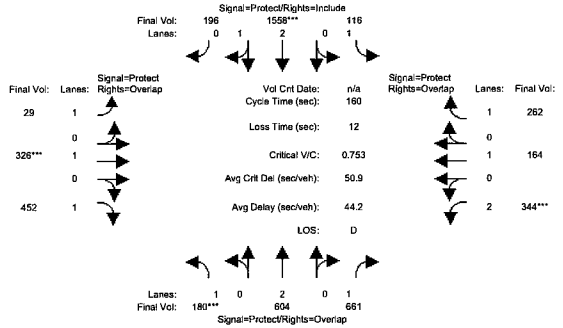
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	366	1463	392	736	644	225	32	87	135	618	829	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	366	1463	392	736	644	225	32	87	135	618	829	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	17	0	3	6	0	0	3	4	0	0	10
Initial Fut:	366	1480	392	739	650	225	32	90	139	618	829	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	366	1480	392	739	650	225	32	90	139	618	829	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	366	1480	392	739	650	225	32	90	139	618	829	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	366	1480	392	739	650	225	32	90	139	618	829	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.20	0.80	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4158	1439	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.39	0.22	0.42	0.16	0.16	0.02	0.05	0.08	0.20	0.44	0.08
Crit Moves:		****		****			****				****	
Green Time:	36.1	30.3	58.7	32.8	27.0	27.0	7.0	12.5	48.6	28.4	33.9	66.7
Volume/Cap:	0.67	1.49	0.44	1.49	0.67	0.67	0.30	0.44	0.19	0.80	1.49	0.13
Delay/Veh:	38.1	270	18.6	273.8	41.9	41.9	53.8	50.0	21.4	47.1	272	11.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	270	18.6	273.8	41.9	41.9	53.8	50.0	21.4	47.1	272	11.4
LOS by Move:	D	F	B	F	D	D	D	D	C	D	F	B
HCM2kAvgQ:	12	56	9	60	10	10	1	3	3	14	64	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	180	604	661	116	1558	196	29	326	452	344	164	262
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	604	661	116	1558	196	29	326	452	344	164	262
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	180	604	661	116	1558	196	29	326	452	344	164	262
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	604	661	116	1558	196	29	326	452	344	164	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	604	661	116	1558	196	29	326	452	344	164	262
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	604	661	116	1558	196	29	326	452	344	164	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.65	0.35	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4973	626	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.16	0.38	0.07	0.31	0.31	0.02	0.17	0.26	0.11	0.09	0.15
Crit Moves:	****				****			****		****		
Green Time:	21.8	70.9	94.1	17.5	66.5	66.5	20.1	36.4	58.3	23.2	39.6	57.1
Volume/Cap:	0.75	0.36	0.64	0.61	0.75	0.75	0.13	0.75	0.71	0.75	0.35	0.42
Delay/Veh:	79.2	29.6	23.2	73.4	41.2	41.2	62.5	64.9	47.3	72.6	50.1	39.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.2	29.6	23.2	73.4	41.2	41.2	62.5	64.9	47.3	72.6	50.1	39.4
LOS by Move:	E	C	C	E	D	D	E	E	D	E	D	D
HCM2kAvgQ:	9	9	23	6	25	25	1	16	21	11	7	10

Note: Queue reported is the number of cars per lane.

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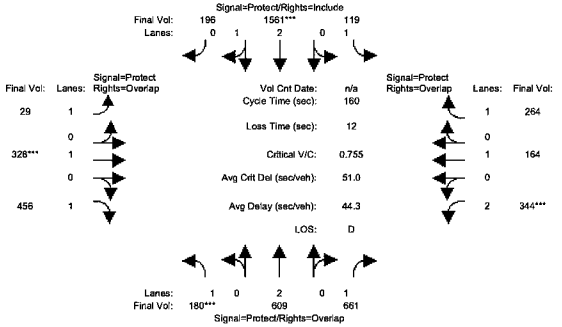
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj PM

Intersection #3421: COMMERCIAL/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	180	604	661	116	1558	196	29	326	452	344	164	262
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	604	661	116	1558	196	29	326	452	344	164	262
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	5	0	3	3	0	0	2	4	0	0	2
Initial Fut:	180	609	661	119	1561	196	29	328	456	344	164	264
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	609	661	119	1561	196	29	328	456	344	164	264
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	609	661	119	1561	196	29	328	456	344	164	264
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	609	661	119	1561	196	29	328	456	344	164	264
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.92	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.65	0.35	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1750	3800	1750	1750	4974	625	1750	1900	1750	3150	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.16	0.38	0.07	0.31	0.31	0.02	0.17	0.26	0.11	0.09	0.15
Crit Moves:	****				****			****		****		
Green Time:	21.8	70.4	93.6	17.8	66.5	66.5	20.1	36.6	58.4	23.1	39.6	57.5
Volume/Cap:	0.76	0.36	0.65	0.61	0.76	0.76	0.13	0.76	0.71	0.76	0.35	0.42
Delay/Veh:	79.4	30.0	23.6	73.3	41.3	41.3	62.5	64.9	47.5	72.8	50.0	39.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.4	30.0	23.6	73.3	41.3	41.3	62.5	64.9	47.5	72.8	50.0	39.1
LOS by Move:	E	C	C	E	D	D	E	E	D	E	D	D
HCM2kAvgQ:	9	9	23	6	25	25	1	16	21	11	7	10

Note: Queue reported is the number of cars per lane.

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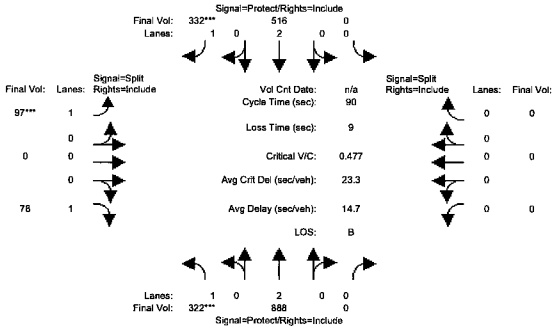
Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3554: GISH/OAKLAND



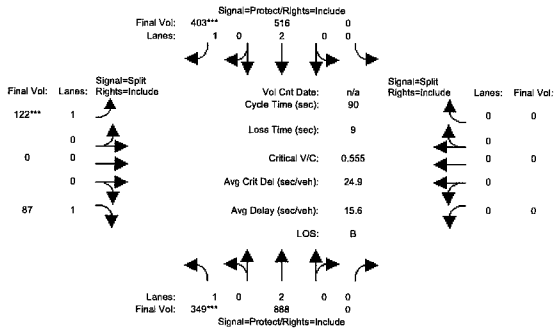
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	322	888	0	0	516	332	97	0	78	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	322	888	0	0	516	332	97	0	78	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	322	888	0	0	516	332	97	0	78	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	322	888	0	0	516	332	97	0	78	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	322	888	0	0	516	332	97	0	78	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	322	888	0	0	516	332	97	0	78	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.18	0.23	0.00	0.00	0.14	0.19	0.06	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	34.7	70.5	0.0	0.0	35.8	35.8	10.5	0.0	10.5	0.0	0.0	0.0
Volume/Cap:	0.48	0.30	0.00	0.00	0.34	0.48	0.48	0.00	0.38	0.00	0.00	0.00
Delay/Veh:	21.3	2.8	0.0	0.0	19.0	20.7	39.0	0.0	38.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.3	2.8	0.0	0.0	19.0	20.7	39.0	0.0	38.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	C	D	A	D	A	A	A
HCM2kAvgQ:	7	3	0	0	5	7	3	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3554: GISH/OAKLAND



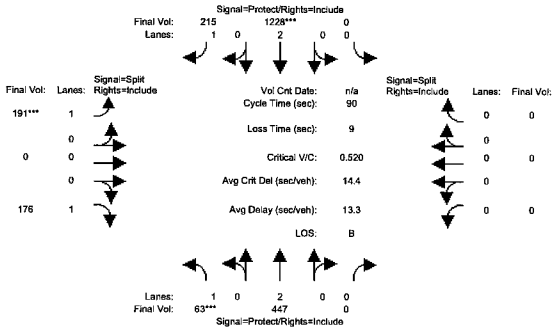
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	322	888	0	0	516	332	97	0	78	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	322	888	0	0	516	332	97	0	78	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	27	0	0	0	0	71	25	0	9	0	0	0
Initial Fut:	349	888	0	0	516	403	122	0	87	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	349	888	0	0	516	403	122	0	87	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	349	888	0	0	516	403	122	0	87	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	349	888	0	0	516	403	122	0	87	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1750	3800	0	0	3800	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.23	0.00	0.00	0.14	0.23	0.07	0.00	0.05	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	32.3	69.7	0.0	0.0	37.3	37.3	11.3	0.0	11.3	0.0	0.0	0.0
Volume/Cap:	0.55	0.30	0.00	0.00	0.33	0.55	0.55	0.00	0.40	0.00	0.00	0.00
Delay/Veh:	24.2	3.0	0.0	0.0	17.9	21.0	40.1	0.0	37.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.2	3.0	0.0	0.0	17.9	21.0	40.1	0.0	37.4	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	C	D	A	D	A	A	A
HCM2kAvgQ:	8	3	0	0	5	9	4	0	3	0	0	0

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3554: GISH/OAKLAND



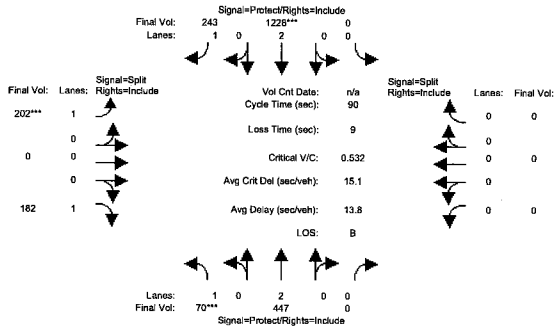
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	10		0	10	0		0	0
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module:																
Base Vol:	63		447	0	0		1228	215	191		0	176	0		0	0
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	63		447	0	0		1228	215	191		0	176	0		0	0
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
PasserByVol:	0		0	0	0		0	0	0		0	0	0		0	0
Initial Fut:	63		447	0	0		1228	215	191		0	176	0		0	0
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	63		447	0	0		1228	215	191		0	176	0		0	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	63		447	0	0		1228	215	191		0	176	0		0	0
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	63		447	0	0		1228	215	191		0	176	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	1.00		0.00	1.00	0.00		0.00	0.00
Final Sat.:	1750		3800	0	0		3800	1750	1750		0	1750	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.04		0.12	0.00	0.00		0.32	0.12	0.11		0.00	0.10	0.00		0.00	0.00
Crit Moves:	****						****		****							
Green Time:	7.0		62.3	0.0	0.0		55.3	55.3	18.7		0.0	18.7	0.0		0.0	0.0
Volume/Cap:	0.46		0.17	0.00	0.00		0.53	0.20	0.53		0.00	0.48	0.00		0.00	0.00
Delay/Veh:	42.2		4.9	0.0	0.0		10.1	7.7	33.1		0.0	32.4	0.0		0.0	0.0
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	42.2		4.9	0.0	0.0		10.1	7.7	33.1		0.0	32.4	0.0		0.0	0.0
LOS by Move:	D		A	A	A		B	A	C		A	C	A		A	A
HCM2kAvgQ:	2		2	0	0		10	3	6		0	5	0		0	0

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
160 Students

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum With Proj PM

Intersection #3554: GISH/OAKLAND



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	0		10	10	10		0	10	0		0	0
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Volume Module:																
Base Vol:	63		447	0	0		1228	215	191		0	176	0		0	0
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	63		447	0	0		1228	215	191		0	176	0		0	0
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
ProjTrips:	7		0	0	0		0	28	11		0	6	0		0	0
Initial Fut:	70		447	0	0		1228	243	202		0	182	0		0	0
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	70		447	0	0		1228	243	202		0	182	0		0	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	70		447	0	0		1228	243	202		0	182	0		0	0
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	70		447	0	0		1228	243	202		0	182	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92	0.92		1.00	0.92
Lanes:	1.00		2.00	0.00	0.00		2.00	1.00	1.00		0.00	1.00	0.00		0.00	0.00
Final Sat.:	1750		3800	0	0		3800	1750	1750		0	1750	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.04		0.12	0.00	0.00		0.32	0.14	0.12		0.00	0.10	0.00		0.00	0.00
Crit Moves:	****						****		****							
Green Time:	7.0		61.5	0.0	0.0		54.5	54.5	19.5		0.0	19.5	0.0		0.0	0.0
Volume/Cap:	0.51		0.17	0.00	0.00		0.53	0.23	0.53		0.00	0.48	0.00		0.00	0.00
Delay/Veh:	43.2		5.1	0.0	0.0		10.6	8.2	32.7		0.0	31.8	0.0		0.0	0.0
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	43.2		5.1	0.0	0.0		10.6	8.2	32.7		0.0	31.8	0.0		0.0	0.0
LOS by Move:	D		A	A	A		B	A	C		A	C	A		A	A
HCM2kAvgQ:	2		2	0	0		10	3	6		0	5	0		0	0

Note: Queue reported is the number of cars per lane.

Challenger School
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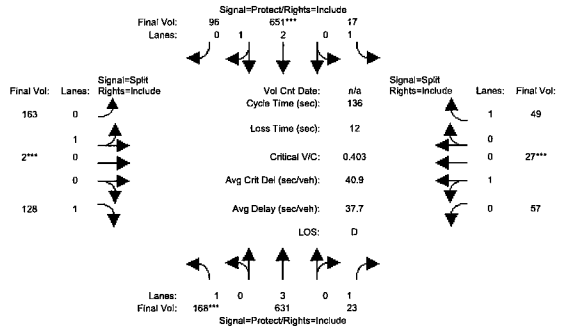
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj AM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	631	23	17	651	96	163	2	128	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	631	23	17	651	96	163	2	128	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	631	23	17	651	96	163	2	128	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	631	23	17	651	96	163	2	128	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	631	23	17	651	96	163	2	128	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	631	23	17	651	96	163	2	128	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.60	0.40	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4879	720	1778	22	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.11	0.01	0.01	0.13	0.13	0.09	0.09	0.07	0.05	0.05	0.03
Crit Moves:	****				****			****			****	
Green Time:	32.4	52.8	52.8	24.6	45.0	45.0	30.9	30.9	30.9	15.7	15.7	15.7
Volume/Cap:	0.40	0.29	0.03	0.05	0.40	0.40	0.40	0.40	0.32	0.40	0.40	0.24
Delay/Veh:	46.6	28.9	25.9	46.4	35.8	35.8	47.6	47.6	45.9	61.5	61.5	57.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	28.9	25.9	46.4	35.8	35.8	47.6	47.6	45.9	61.5	61.5	57.5
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	6	6	1	1	8	8	6	6	5	4	4	2

Note: Queue reported is the number of cars per lane.

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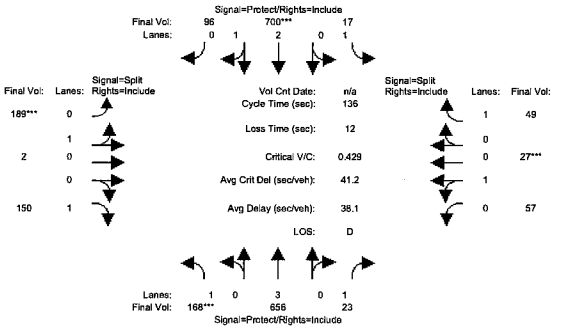
2000 HCM Operations (Future Volume Alternative)
Cum With Proj AM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	631	23	17	651	96	163	2	128	57	27	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	631	23	17	651	96	163	2	128	57	27	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	25	0	0	49	0	26	0	22	0	0	0
Initial Fut:	168	656	23	17	700	96	189	2	150	57	27	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	656	23	17	700	96	189	2	150	57	27	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	656	23	17	700	96	189	2	150	57	27	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	656	23	17	700	96	189	2	150	57	27	49
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.99	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.62	0.38	0.99	0.01	1.00	0.68	0.32	1.00
Final Sat.:	1750	5700	1750	1750	4924	675	1781	19	1750	1221	579	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.01	0.01	0.14	0.14	0.11	0.11	0.09	0.05	0.05	0.03
Crit Moves:	****				****		****				****	
Green Time:	30.4	52.2	52.2	23.3	45.1	45.1	33.7	33.7	33.7	14.8	14.8	14.8
Volume/Cap:	0.43	0.30	0.03	0.06	0.43	0.43	0.43	0.43	0.35	0.43	0.43	0.26
Delay/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	29.5	26.3	47.5	36.1	36.1	46.1	46.1	44.3	63.4	63.4	58.8
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2kAvgQ:	7	6	1	1	9	9	7	7	6	4	4	2

Note: Queue reported is the number of cars per lane.

Challenger School
Gish Road
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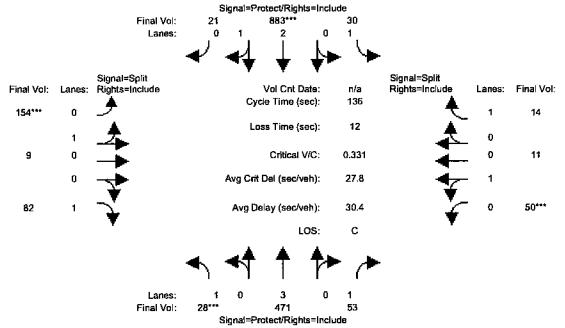
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Cum No Proj PM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	471	53	30	883	21	154	9	82	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	471	53	30	883	21	154	9	82	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	471	53	30	883	21	154	9	82	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	471	53	30	883	21	154	9	82	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	471	53	30	883	21	154	9	82	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	471	53	30	883	21	154	9	82	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.94	0.06	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5470	130	1701	99	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.16	0.16	0.09	0.09	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	45.0	45.0	28.0	66.1	66.1	37.1	37.1	37.1	13.9	13.9	13.9
Volume/Cap:	0.31	0.25	0.09	0.08	0.33	0.33	0.33	0.33	0.17	0.33	0.33	0.08
Delay/Veh:	70.9	33.5	31.7	44.0	21.8	21.8	41.4	41.4	38.5	61.6	61.6	56.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.5	31.7	44.0	21.8	21.8	41.4	41.4	38.5	61.6	61.6	56.1
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

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Gish Road
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Level Of Service Computation Report
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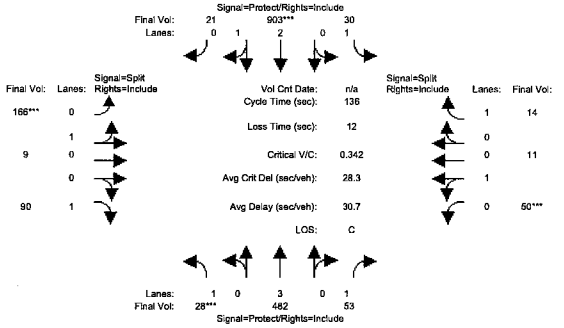
Cum With Proj PM

Intersection #3866: BERGER/OAKLAND



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	28	471	53	30	883	21	154	9	82	50	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	471	53	30	883	21	154	9	82	50	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ProjTrips:	0	11	0	0	20	0	12	0	8	0	0	0
Initial Fut:	28	482	53	30	903	21	166	9	90	50	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	482	53	30	903	21	166	9	90	50	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	482	53	30	903	21	166	9	90	50	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	482	53	30	903	21	166	9	90	50	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.95	0.95	0.92	0.95	0.95	0.92
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	0.95	0.05	1.00	0.82	0.18	1.00
Final Sat.:	1750	5700	1750	1750	5473	127	1707	93	1750	1475	325	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.03	0.02	0.17	0.17	0.10	0.10	0.05	0.03	0.03	0.01
Crit Moves:	****				****		****			****		
Green Time:	7.0	44.9	44.9	27.3	65.2	65.2	38.4	38.4	38.4	13.4	13.4	13.4
Volume/Cap:	0.31	0.26	0.09	0.09	0.34	0.34	0.34	0.34	0.18	0.34	0.34	0.08
Delay/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.9	33.7	31.8	44.7	22.4	22.4	40.6	40.6	37.7	62.4	62.4	56.6
LOS by Move:	E	C	C	D	C	C	D	D	D	E	E	E
HCM2kAvgQ:	1	5	2	1	8	8	6	6	3	3	3	1

Note: Queue reported is the number of cars per lane.

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Appendix E

Signal Warrant

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: MN date: 1/30/12

Major Street: I-880 Ramps — Critical Approach Speed* (mph) 35

Minor Street: Gish Road/ — Critical Approach Speed* (mph) 25

*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ or ☐ **Rural (R)**

In built up area of isolated community of < 10,000 population..... ☑ **Urban (U)**

AM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

AM PEAK HOUR

	Existing	Exist + Project	Background	Bkgrd + Project	0:00	0:00	0:00	0:00
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB	WB	WB	WB	WB
Highest Minor Street Average Delay (sec/veh)	24.8	28.0	21.7	29.2	0.0	0.0	0.0	0.0
Corresponding Minor Street Approach Volume (veh/hr)	505	538	505	538	0	0	0	0
Minor Street Total Delay (veh-hrs)	3.5	4.2	3.0	4.4	0.0	0.0	0.0	0.0
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	no	yes	no	yes				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	yes	yes	yes	yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	yes	yes	yes	yes				
Signal Warranted based on Part A?	**NO**	**YES**	**NO**	**YES**				

PART B

AM PEAK HOUR

		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Exist + Project	Background	Bkgrd + Project	0:00	0:00	0:00	0:00
Major Street - Both Approaches	I-880 Ramps	X		838	882	838	882	0	0	0	0
Minor Street - Highest Approach	Gish Road/	X		505	538	505	538	0	0	0	0
Signal Warranted based on Part B?				**Yes**	**Yes**	**Yes**	**Yes**	**0**	**0**	**0**	**0**

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2003 Edition, as amended for use in California).

Notes:

Challenger School Expansion

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: MN date: 1/30/12

Major Street: I-880 Ramps — Critical Approach Speed* (mph) 35

Minor Street: Gish Road/ — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ or ☐ Rural (R)

In built up area of isolated community of < 10,000 population..... ☑ Urban (U)

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Exist + Project	Background	Bkgrd + Project	0:00	0:00	0:00	0:00
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB	WB	EB	EB	EB
Highest Minor Street Average Delay (sec/veh)	31.4	32.7	30.1	33.3	0.0	0.0	0.0	0.0
Corresponding Minor Street Approach Volume (veh/hr)	441	459	441	459	0	0	0	0
Minor Street Total Delay (veh-hrs)	3.8	4.2	3.7	4.2	0.0	0.0	0.0	0.0
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	no	yes	no	yes				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	yes	yes	yes	yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	yes	yes	yes	yes				
Signal Warranted based on Part A?	**NO**	**YES**	**NO**	**YES**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Exist + Project	Background	Bkgrd + Project	0:00	0:00	0:00	0:00
Major Street - Both Approaches	I-880 Ramps	X		784	796	784	796	0	0	0	0
Minor Street - Highest Approach	Gish Road/	X		441	459	441	459	0	0	0	0
Signal Warranted based on Part B?				**Yes**	**Yes**	**Yes**	**Yes**	**0**	**0**	**0**	**0**

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods)

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2003 Edition, as amended for use in California).

Notes:

Appendix F

Challenger School Arrival and Departure Plan

CHALLENGER SCHOOL

Arrival and Departure Information

Berryessa

Drive-Through Convenience

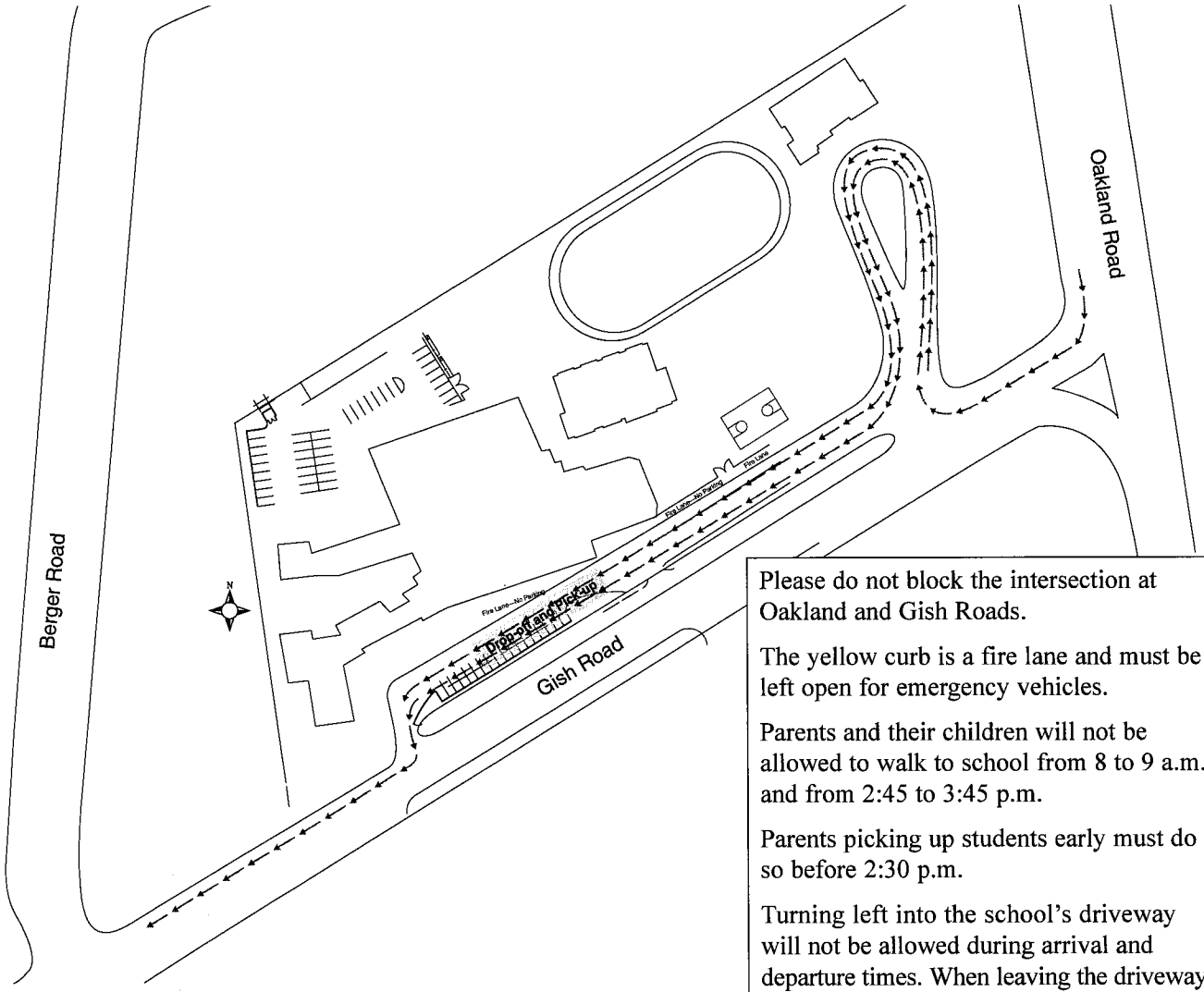
Our arrival and departure routine allows you to drop off and pick up your child without leaving your vehicle. It's safer and faster than parking and walking into the school.

Be aware of Challenger employees wearing safety vests. They will guide you and will assist your child to and from your vehicle. Please note your child's arrival and departure times on the adjacent chart so you can plan accordingly.

Please be patient the first week of school as parents new to Challenger learn the routine.

Drive-Through Arrival and Departure Times

Program	Arrival	Departure
All-day Kindergarten	8:20–8:30	3:25–3:35
Grades 1–3	8:00–8:15	3:05–3:25
Grades 4–8	7:45–8:00	2:50–3:05



Please do not block the intersection at Oakland and Gish Roads.

The yellow curb is a fire lane and must be left open for emergency vehicles.

Parents and their children will not be allowed to walk to school from 8 to 9 a.m. and from 2:45 to 3:45 p.m.

Parents picking up students early must do so before 2:30 p.m.

Turning left into the school's driveway will not be allowed during arrival and departure times. When leaving the driveway, make a right turn onto Gish Road. Turning left on Gish is strictly prohibited during arrival and departure times.

Figure A

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Please see reverse.

Arrival

Students who are enrolled in All-Day Preschool or Extended programs may arrive as early as 7:00 a.m. They must be signed in as they arrive.

Drive-Through Arrival
Please arrive during the times listed, using the designated areas for drop-off (see figure A). Pull up as far as possible, put your car in park, and wait for a teacher to open the door on the passenger side of the vehicle before your child exits. Do not get out of your car while in the drop-off lane.

Preschool Sign-In/Sign-Out Stickers
Because preschool children must be signed in and out, we provide stickers to speed up the process. These will be sent home periodically with students. Parents who drop off or pick up preschool children during drive-through times must use these stickers. Before arriving, fill out all the information except for the time. When you arrive, fill in the time and hand the sticker to the teacher who helps your child in or out of your vehicle.

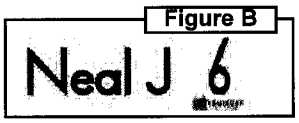
Arrival Before or After Drive-Through Times
- All-Day Preschool students who arrive before the drive-through times should be walked to the designated room and signed in. They may arrive as early as 7:00 a.m.
- Elementary students who arrive before the scheduled arrival time will be placed in Extended Classtime and parents will be charged the Extended Classtime daily drop-In rate.*
- Students who arrive after the drive-through times should be signed in at the office.

Departure

Students enrolled in All-Day Preschool or Extended programs may stay as late as 6:00 p.m. They must be signed out before leaving the campus.

Drive-Through Departure
Challenger provides visor cards (see Figure B) for parents/guardians to display when picking up children during drive-through departure. Upon request, we will issue additional cards to adults listed as responsible parties* on the Identification and Emergency Information form.

Figure B



Please arrive during the times listed, using the designated areas for pick-up (see Figure A). Place the visor card in your vehicle so it will be visible. We will bring your child to your car. Remain in line until the car in front of you has pulled away; do not pull around it unless instructed to do so by a staff member. You must bring a sign-out sticker to pick up a preschool child from drive-through departure; otherwise, you must park and sign the child out at the office.

If an authorized adult without a visor card is picking up your child, you must call the office to let us know. The person must then present a photo ID at the office to pick up the child.

Departure Before or After Drive-Through Times
Starting the first day of school, when children are not picked up on time, late fees apply.*

To pick up your child at any time other than the assigned arrival/departure times, you must present a photo ID and go to the location specified below.

Half-Day Preschool Students: Office

Morning Kindergarten Students: Office

All Other Students: Extended Classtime Room

*Refer to school policies for more information.

Additional Information

Parking
Park only in the designated visitors' parking area when you come into the school. Do not park in loading zones, driveways, or No Parking areas. Please only use parking spaces reserved for the disabled if you have a permit.

Car Pools
Please call the office to obtain lists of people who want to form car pools.

Visiting
All visitors (including parents) must sign in at the office and obtain a pass before visiting.

Courteous Driving
The on-campus speed limit is 5 mph. Drive slowly and carefully for safety and to preserve our relationship with homeowners, the city, and the police department. For everyone's safety, please refrain from using mobile phones during arrival and departure.

It will help the flow of traffic if parents do not all arrive at the exact beginning of arrival and departure times.

Child Supervision
There is no before- or after-school playground supervision except for those enrolled in All-Day Preschool or Extended Programs

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CHALLENGER SCHOOL

Emergency Response Procedures
For Berryessa Teachers

Room _____

Remain Calm, Assess the Situation, and Make Sound Decisions

© 2010, Barbara B. Baker

Missing Child

Students shall not be left alone unsupervised anywhere in the building or on school grounds during the school day. If a child is missing:

- Confirm child attended school that day.
- Notify headmaster immediately.
- Headmaster will assign staff members to check last known location of the child.
- Headmaster will organize a complete search of the school.
- If deemed appropriate, headmaster will call 911.
- Headmaster will contact responsible parties.

Flood

If a flood warning is announced, the extent of the flood and the time before it arrives will dictate the course of action taken. The headmaster or school secretary may indicate one of the following emergency actions.

Be prepared to:

- Keep students at school.
- Notify parents via radio, television, or telephone.
- Execute building evacuation procedures. (Refer to Evacuation Procedures.)
- Execute site evacuation procedures.
- Effect school cancellation or late opening policy.

After a flood:

Beware of contaminated food, water, broken gas lines, and wet electrical equipment.

Severe Weather (Lightning/Hurricane/Tornado)

The U.S. Weather Bureau is able to forecast severe weather with a high degree of accuracy. If time and conditions permit, notify parents to pick up students. When threat of severe weather exists, monitor radio/ television for bulletins.

Remember the 30/30 lightning safety rule: Go indoors if, after seeing lightning, you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder. Secure outdoor objects that could blow away or cause damage.

- Postpone outdoor activities.
- Get students inside the building. Avoid auditoriums, multi-purpose rooms and other structures with large roof spans.
- Close window blinds and shades. Move students away from windows.
- Move students out of classrooms bearing full force of wind.
- Unplug appliances and other electrical items such as computers, and turn off air conditioners. Power surges from lightning can cause serious damage.
- Use battery-operated radio from shelter-in-place kit to keep abreast of storm conditions and official announcements.
- Take roll.
- Notify headmaster of any break or suspected break in utilities.

Bio-Hazard Emergency

Should you receive a suspicious, unopened letter or package:

- Report the incident to the headmaster or school secretary, who will contact the police.
- Do not shake or empty the contents of any suspicious envelopes or packages.
- The persons immediately exposed to the potential agent **must** remain where they are. They should try to avoid inhaling or touching the substance.
- Place the envelope or package in a plastic bag or other container to prevent leakage of contents and to preserve fingerprints. If a container isn't available, cover the package with anything (e.g., clothing, paper, trash can) and do not remove this cover.
- Section off the area to keep others away.
- Be aware of what you touch. Do not touch face. Wash your hands with soap and water to prevent spreading any dangerous contents.
- Make a list of all the people who were in the room or area when the suspicious package was first noticed.
- Do not evacuate students or send them home until the emergency responders have done their investigation.
- If it is necessary to move or evacuate students and staff to a different location, the Hazardous Materials (HAZMAT) team or other emergency responder will provide instructions to administrators as to how it will be done.

MEDICAL EMERGENCY

- Assess seriousness of injury or illness.
- Inform headmaster or school secretary immediately.
- Administer first aid.
- Document all first aid treatment given on the First Report of Injury.
- Headmaster or school secretary will contact parent or guardian.

Has the person collapsed or stopped breathing?

- Call 911 immediately

If poison is ingested:

- Immediately contact the Poison Control Center at **(800) 222-1222.**

If poison is inhaled:

- Get to fresh air right away.
- Immediately contact the Poison Control Center at **(800) 222-1222.**

If poison is on the skin:

- Take off any clothing that the poison touched.
- Rinse skin with running water for 15 to 20 minutes.
- Immediately contact the Poison Control Center at **(800) 222-1222.**

If poison is in the eyes:

- Rinse eyes with running water for 15 to 20 minutes.
- Immediately contact the Poison Control Center at **(800) 222-1222.**

Natural Gas Emergency

A natural gas emergency occurs when natural gas escapes from its controlled environment.

Emergency Procedure

- Alert the headmaster of any leaks or suspected leaks.
- The headmaster will contact the gas company, and, if necessary, will call 911.
- Prepare to evacuate.
- If evacuation becomes necessary, follow evacuation procedures.
- Ventilate the building by leaving doors and windows open as you leave.
- Keep people and vehicles away from the suspected area.
- Eliminate or control all ignition sources.
- Follow instructions provided by headmaster and gas company.

If odors are detected outside the building:

- Alert the headmaster immediately.
- It is not necessary to evacuate the building unless odor seeps into the building.

School Violence

Assess the situation:

- Is suspect in the school?
- Has weapon been found and/or secured?
- Has suspect been identified?

In most cases, lockdown procedures will be initiated to isolate students from danger or students will be sent to a secure area.

Once situation has been assessed:

- Provide first aid to injured individuals.
- Notify headmaster or school secretary. Dial 911 if appropriate:
  Provide full information about what has occurred and what is known.
  Explain what steps the school has taken (lockdown).
- Isolate and separate any witnesses. Instruct witnesses to write statement of events while awaiting police.
- If the suspect is still in the school, attempt to identify his or her location and begin planning for evacuation once police arrive.
- If suspect has left, secure all exterior doors to prevent re-entry.
- Be prepared for possible evacuation or to continue with classes.
- Keep crime scene secure.

Hostile Visitor

- Remain calm.
- Be courteous and confident.
- Keep distance between you and the visitor.
- Do not touch the individual.
- Protect yourself at all times. **Don't become a victim**.
- Evaluate the situation from moment to moment and make sound, well-founded choices; act accordingly.
- Find another staff member to join you or keep the meeting in an open area.
- Staff members are permitted to adjust their actions in an effort to adapt to changes in the environment.
- Listen to the visitor, giving him or her opportunity to vent.
- Remain firm but calm when communicating with the visitor.
- Do not indicate any threat to the individual, either through body language or verbal communication.
- Do not disregard the person's opinion or blame the person. Attempt to be helpful. Use phrases such as: "What can we do to make this better?" "I understand the problem and I am concerned." "We need to work together on this problem."
- As soon as the conversation or actions of the individual become threatening, call 911 and request that police respond. A planned "keyword" may be arranged with a co-worker to alert them to call the police.
- Without touching the person, visually inspect them for suspicious bulges or any other indication of a weapon.
- If the police are called, notify the headmaster.
- When scheduling a meeting with a known aggressive individual, arrange for another staff member to be present.

Fire or Explosion

If there is a fire within the building:

- If fire occurs or if you detect smoke or a burning odor, pull the closest fire alarm to initiate building **EVACUATION**. Call 911 and report all known information about the incident. Get word to the headmaster about the location and nature of the fire and that 911 has been called.
- If there is an explosion, duck-cover-hold until blast wave has passed.
- Evacuate the building (follow the **EVACUATION** Procedures).
- If clothes catch fire, use stop, drop, and roll until fire is extinguished.
- Use back of hand to check doors for heat before opening (top, doorknob, and around frame).
- Do not open a hot door. Open cool doors slowly and check that nothing is blocking your route.
- Close doors behind you to delay spread of fire.
- Crawl to avoid smoke inhalation.
- Escape through window if necessary.
- If you cannot escape, hang a light-colored sheet outside the window to alert fire fighters.
- Maintain control of students at a safe distance from the building and fire fighting equipment.
- Take roll.
- If anyone is injured, follow **MEDICAL EMERGENCIES** procedures.
- Students and staff should not return to the building until the fire department officials declare it as safe.

Note: Staff who have been trained to use fire extinguishers may attempt to fight small fires. However, they should not endanger their lives nor delay the evacuation of students to do so.

Earthquake

During an earthquake:

If indoors:

- Stay inside. Move away from windows, shelves, heavy objects, or furniture that may fall over.
- Take cover under a table or desk. Instruct students to **drop, cover, and hold on!**
- In halls, stairways, or other areas where cover is not available, move to an inside wall.

If outdoors:

- Move to an open space away from buildings, fences, and overhead power lines. Lie down or crouch. (Legs will not be steady.)
- Keep looking around to be aware of dangers that may require you or your students to move.
- Do not run.

After an earthquake:

- Assess the situation, and act accordingly.
    - Render first aid as necessary.
    - Take roll.
    - Consider possible dangers outside of the building before evacuating the students.
    - There may be no clear route out of the building, and lights will probably be out. Use the flashlight located in the classroom's shelter-in-place kit.
- Help clear primary or alternate building exit routes, if necessary.
- Wait for the headmaster/school secretary to determine whether the assembly site and evacuation routes are safe or to designate an alternate site or route. If the headmaster and school secretary are absent, a staff member such as a teacher should check the safety of the assembly site and escape routes.
- Avoid fallen wires and areas near chain link fences. (These are an electric shock hazard.)
- Look for and extinguish small fires. Eliminate fire hazards. Turn off the gas if you smell gas or think it's leaking. (Remember, only a professional should turn it back on.)
- Expect aftershocks. Each time you feel one, **drop, cover, and hold on!**

Bomb Threat

Telephone bomb threat:

- During the call, complete the bomb threat checklist (see next page). Write down the **exact words** the caller uses.
- Stay on the line with the caller as long as possible. Try to obtain more information about the threat and the caller.
- Do not do anything that will prevent the headmaster from using *57 or *69 on the phone the threat was received on.
- Contact the headmaster or head of the Crisis Management Team immediately.
- Caution students and fellow staff members not to pick up any strange objects.
- The decision to evacuate the school and to call police is the responsibility of the headmaster.
- Take roll. Prepare for **EVACUATION**.
- If an **EVACUATION** is conducted, all evacuation routes must be searched for suspicious items before use.
- When signaled, follow off-site **EVACUATION** procedures.
- Staff and students should not return to the school until the police and fire officials declare the school to be safe.

E-mail bomb threat:

- Follow telephone bomb threat procedures.
- Save the message on the system; DO NOT delete the e-mail message.
- Print copies of the message to be turned over to the police and the MIS Department.

Letter bomb threat:

- Note the manner in which it was delivered, who found it and where it was found.
- Immediately place the message in an envelope to preserve fingerprints.
- Notify headmaster or head of the Crisis Management Team.

Bomb Threat Checklist

Telephone Bomb Threat Checklist

Caller ID Number: _____

***Remain calm* while caller is on the line. *Listen.* Do not interrupt the caller except to ask the following (Note their responses verbatim as they give them.)**

1. When will it go off? _____

2. Where is it planted? _____

3. What does it look like? _____

4. Why are you doing this? _____

5. Who are you? _____

Call received by: _____ Time of call: _____ Date: _____

Description of caller: ☐ Male ☐ Female ☐ Adult ☐ Juvenile

Voice Characteristics
- ☐ Loud
- ☐ Soft
- ☐ High-pitched
- ☐ Deep
- ☐ Raspy
- ☐ Pleasant
- ☐ Intoxicated
- ☐ Other _____

Manner
- ☐ Calm
- ☐ Angry
- ☐ Rational
- ☐ Irrational
- ☐ Coherent
- ☐ Incoherent
- ☐ Deliberate
- ☐ Emotional
- ☐ Righteous
- ☐ Laughing

Speech
- ☐ Fast
- ☐ Slow
- ☐ Distinct
- ☐ Distorted
- ☐ Stutter
- ☐ Nasal
- ☐ Slurred
- ☐ Precise
- ☐ Other _____

Language
- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Foul
- ☐ Other _____

Accent
- ☐ Local
- ☐ Not local
- ☐ Foreign
- ☐ Regional
- ☐ Race

Background Noises
- ☐ Office machines
- ☐ Street traffic
- ☐ Factory machines
- ☐ Airplane
- ☐ Bedlam
- ☐ Trains
- ☐ Animals
- ☐ Voices
- ☐ Quiet
- ☐ Music
- ☐ Mixed
- ☐ Party atmosphere
- ☐ Other _____

Hazardous Materials Incident

A major chemical emergency is an accident that releases a hazardous amount of a chemical into the environment. Accidents can happen underground, on railroad tracks or highways, and at manufacturing plants. These accidents sometimes result in a fire or explosion, but many times you cannot see or smell anything unusual.

Listen to local radio or television stations for detailed information and instructions. Follow the instructions carefully. You should stay away from the area to minimize the risk of contamination. Remember that some toxic chemicals are odorless.

Spills or Leaks Inside the building

- Evacuate the affected area immediately.
- Notify the headmaster as soon as possible.

Spills or Leaks Outside the building

- Ensure that all students are in the building and that they remain there.
- Shut off all outside air ventilators.
- Keep telephone lines clear for emergency calls.

If you are asked to evacuate, do so immediately.

- Stay tuned to a radio or television for information on evacuation routes, temporary shelters, and procedures.
- Follow the routes recommended by the authorities—shortcuts may not be safe. Leave at once.
- If you have time, minimize contamination in the school by closing all windows, shutting all vents, and turning off fans.
- Take pre-assembled disaster supplies.

If you are told to shelter-in-place:

- If you are told there is danger of explosion, close window shades, blinds, and curtains.
- Turn off all fans and heating and air conditioning systems.
- Gather essential disaster supplies.
- Select interior room(s) above the ground floor with the fewest windows and vents. Large storage closets, utility rooms, meeting rooms, and even a gymnasium without exterior windows work well.
- Bring everyone into the room. Shut and lock the door.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room.
- Write down the names of everyone in the room with you.
- If gas or vapors could have entered the building, take shallow breaths through a cloth or a towel. Avoid eating or drinking any food or water that may be contaminated.

Evacuation

If EVACUATION of building is necessary:

- Evacuate students from building by primary or alternate evacuation routes, as instructed by the headmaster (refer to Evacuation Map at the end of these procedures). Quickly guide students out of the building; inspect classroom (including in-room bathrooms), turn off lights, and carry class roll from the building.
- Call roll at safe site, and report any missing students to headmaster. (If the headmaster and school secretary are absent, report to a member of the Crisis Management Team.)
- Wait to return to the building until headmaster or emergency personnel have inspected the premises and given the all-clear signal.

If EVACUATION of school-site is necessary:

- Call roll before students leave campus.
- If safe to do so, have students walk in an orderly fashion to the off-campus safe site. (Refer to the Off-Site Evacuation Map located at the end of these procedures.)
- Call roll again at the safe site, and report any missing students to the headmaster. (If the headmaster is absent, report to a member of the Crisis Management Team.) If the headmaster is absent, call the region office to report your arrival at the safe site.
- Assist the headmaster or reunion organizer, if necessary, in contacting parents to inform them of the circumstances and how they should pick up their children.

Release students only to authorized adults.

LOCKDOWN/SHELTER-IN-PLACE

LOCKDOWN Procedures

- Lock the classroom doors immediately.
- Keep all students sitting on the floor, away from doors and windows.
- Use caution and discretion in allowing students entry into the classroom.
- Advise the students that there is some type of emergency but you don't know what it is.
- Take attendance and prepare a list of missing students and extra students in the room. Prepare to take this list with you when you are directed to leave the classroom.
- If there is a phone in your classroom, do not use it to call out, unless there is an emergency situation in the classroom. Lines must be kept open.
- Ignore any fire alarm activation. The school will not be evacuated using this method.
- Project a calm attitude to maintain student behavior.
- If students are moved out of the classroom, assist them in moving as quietly and quickly as possible.
- Remain in the room until a staff member or a police officer comes to the room with directions.

SHELTER-IN-PLACE

Shelter-in-place means selecting a small, interior room, with no or few windows, and taking refuge there. It does not mean sealing off the entire school.

- Close and lock all windows and exterior doors.
- If you are told there is danger of explosion, direct that window shades, blinds, or curtains be closed.
- Turn off all fans and heating and air conditioning systems.
- Gather essential disaster supplies.
- Select interior room(s) above the ground floor, with the fewest windows and vents. Large storage closets, utility rooms, meeting rooms, and even a gymnasium without exterior windows work well.
- Bring everyone into the room. Shut and lock the door.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room.
- Write down the names of everyone in the room, and call your school's designated emergency contact to report who is in the room with you.

Shelter Safety for Sealed Rooms

Ten square feet of floor space per person will provide sufficient air to prevent carbon dioxide build-up for up to five hours, assuming a normal breathing rate while resting. However, local officials are unlikely to recommend the public shelter in a sealed room for more than 2–3 hours because the effectiveness of such sheltering diminishes with time as the contaminated outside air gradually seeps into the shelter. At this point, evacuation from the area is the better protective action to take.

Also you should ventilate the shelter when the emergency has passed to avoid breathing contaminated air still inside the shelter.

Emergency Contacts/Maps

15-37-10_BA

Emergency: Call 911

Challenger School:
Corporate Office ..... (801) 569-2700
CA Region Office ..... (408) 377-2300

Police department non-emergency phone number ..... (408) 277-8900

Fire department non-emergency phone number ..... (408) 277-4444

Office of Emergency Services ..... (408) 299-3751

Red Cross .....Santa Clara Valley Chapter, (408) 577-1000

Poison control ..... (800) 222-1222

Hospital ..... Regional Medical Center, 225 N. Jackson Ave. (408) 259-5000

Gas company ..... Pacific G&E, (800) 743-5000

Electric company ..... Pacific G&E, (800) 743-5000

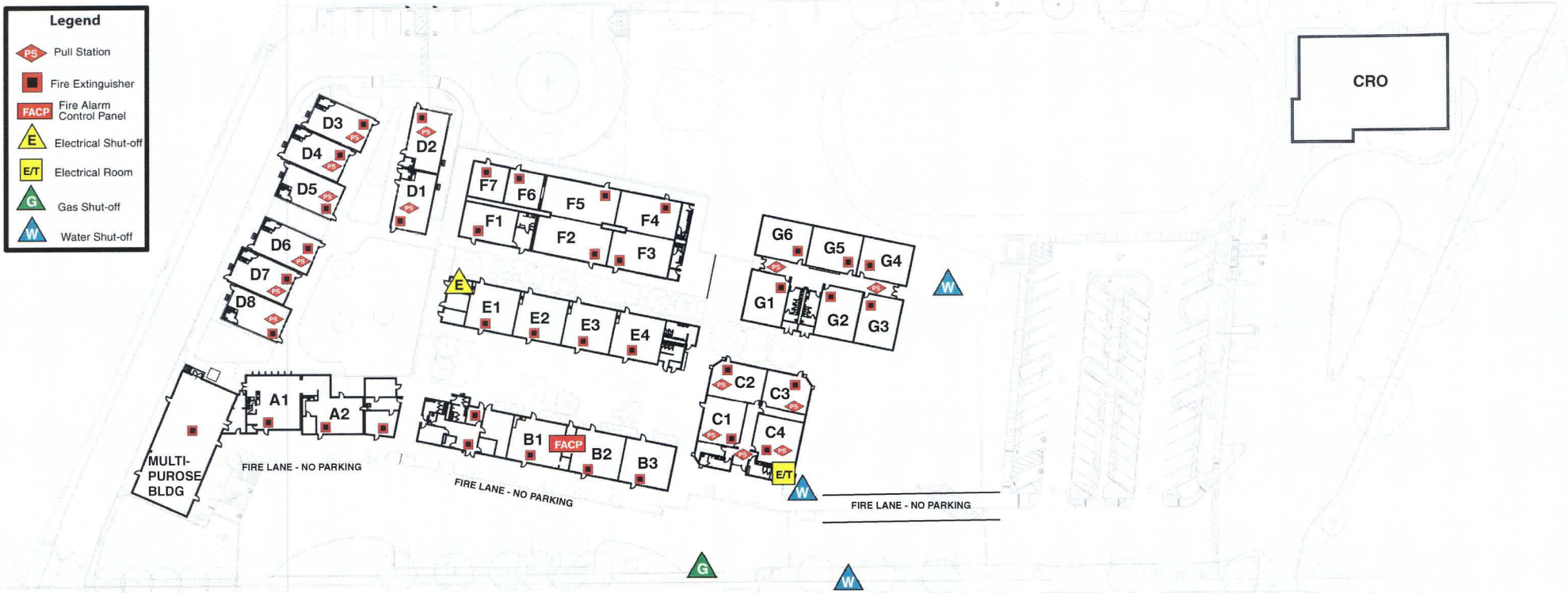
Water company ..... City of San Jose, (408) 535-3500

Phone company ..... AT&T, (800) 750-2355

News radio stations .....1590 AM, 740 AM, 810 AM

Emergency Equipment Map

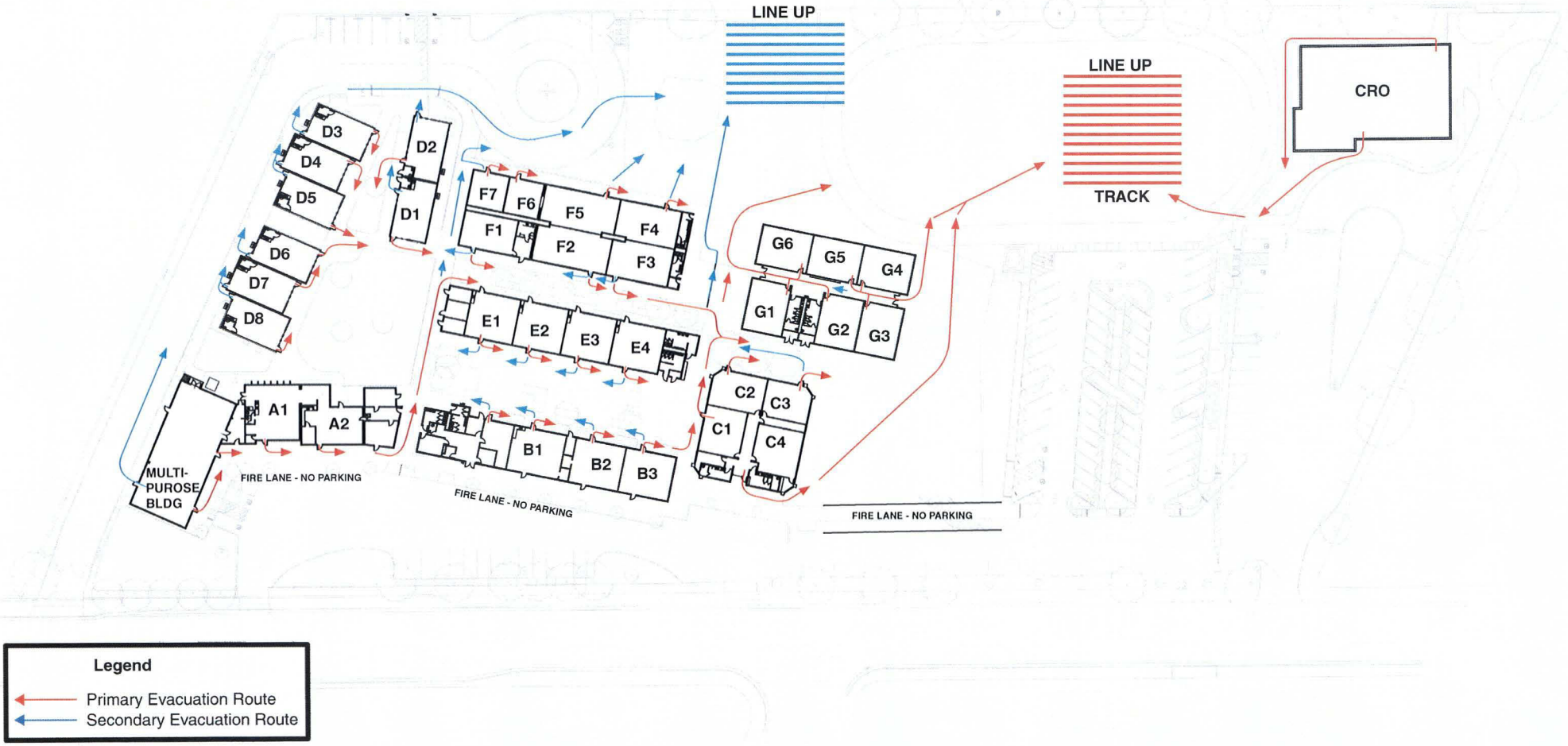
Challenger Berryessa Campus
711 East Gish Road
San Jose, CA 95112
(408) 998-2860



03.19.12

Evacuation Map

Challenger Berryessa Campus
711 East Gish Road
San Jose, CA 95112
(408) 998-2860



Legend

Primary Evacuation Route
Secondary Evacuation Route

03.19.12

Off-Site Evacuation Map
N
Challenger Berryessa Campus
711 East Gish Road
San Jose, CA 95112
(408) 998-2860
Golf Course
Club House
Parking Lot
Parking Lot
Berger Drive
Challenger School
Gish Road
Orchard School
Legend
Evacuation Route
15-37-10_BA_Site