PUBLIC REVIEW DRAFT

Soquel Union Elementary School District
Opal Cliffs Public Works Plan

FEBRUARY 11, 2010

PUBLIC REVIEW DRAFT

Soquel Union Elementary School District
Opal Cliffs Public Works Plan

PREPARED FOR

Judd Jordan
Lozano Smith
4 Lower Ragsdale Dr., Suite 200
Monterey, CA 93940-5758
Tel 831.646.1501

PREPARED BY

EMC Planning Group Inc.
301 Lighthouse Avenue Suite C
Monterey, CA 93940
Tel 831.649.1799
Fax 831.649.8399
contactus@emcplanning.com
www.emcplanning.com

February 11, 2010

this document was produced on recycled paper.

TABLE OF CONTENTS

Executive Summary es-1

1.0 Introduction 1-1

1.1 Introduction 1-1

1.2 Relationship of the Public Works Plan to the Coastal Act 1-13

1.3 Relationship of the Public Works Plan with City of Capitola Local Coastal Program and General Plan 1-13

1.4 Public Works Plan Preparation Process 1-14

1.5 Public Works Plan Organization and Content 1-14

2.0 Land Use Plan 2-1

2.1 Background 2-1

2.2 Proposed Uses 2-5

2.3 Existing Policies and Regulations 2-15

2.4 Discussion 2-25

2.5 Public Works Plan Land Use Policies 2-26

3.0 Circulation 3-1

3.1 Background 3-1

3.2 Proposed Circulation and Parking Improvements 3-3

3.3 Existing Polices and Regulations 3-4

3.4 Discussion 3-9

3.5 Public Works Plan Circulation and Parking Goals and Policies 3-15

4.0 Parks and Recreation, Visual Resources, Public Access, Natural Resources 4-1

4.1 Parks and Recreation 4-1

4.2 Visual Resources/Public Access 4-4

4.3 Natural Resources 4-10

5.0 Cultural and Historical Resources 5-1

5.1 Background 5-1

5.2 Existing Policies and Regulations 5-2

5.3 Discussion 5-2

5.4 Public Works Plan Policies – Cultural Resources 5-2

6.0 Public Services, Facilities, and Infrastructure 6-1

6.1 Background 6-1

6.2 Existing Policies and Regulations 6-10

6.3 Discussion 6-11

6.4 Public Facilities and Infrastructure Goals and Policies 6-17

7.0 Hazards 7-1

7.1 Background 7-1

7.2 Existing Policies and Regulations 7-4

7.3 Discussion 7-6

7.4 Public Works Plan Policies and Implementing Actions 7-9

8.0 Public Works Plan Preparation 8-1

8.1 Report Authors 8-1

8.2 Persons Contacted 8-2

8.3 Sources 8-2

EXHIBIT

Exhibit A	City of Capitola General Plan/Coastal Plan Land Use Map

APPENDICES

Appendix A	Conditional Judgment of Ejectment Case no. CV 141712
Appendix B	Traffic Impact Analysis
Appendix C	Geologic and Seismic Hazards Evaluation
Appendix D	Biological Resources Assessment
Appendix E	Cultural Resource Evaluation
Appendix F	Railroad Risk Analysis
Appendix G	Phase 1 Environmental Site Assessment and Draft Preliminary Environmental Assessment Report
Appendix H	Environmental Noise Study
Appendix I	Consistency Analysis
Appendix J	Water and Sewer Districts Will Serve Letters
Appendix K	Implementing Procedures
Appendix L	Greenhouse Gas Report

FIGURES

Figure 1	Regional Location	1-5
Figure 2	Project Location	1-7
Figure 3	Aerial Photograph	1-9
Figure 4	Site Photographs	1-11
Figure 5	Coastal Zone Combining District Map	2-5
Figure 6	Topographic Survey	2-7
Figure 7	Phase One Site Plan	2-9
Figure 8	Phase Two Site Plan	2-11
Figure 9	Tree Removal Plan	2-13
Figure 10	Land Use Mitigation Plan	2-17
Figure 11	Phase One Preliminary Landscape Plan	2-19
Figure 12	Phase Two Preliminary Landscape Plan	2-21
Figure 13	Preliminary Lighting Plan	2-23
Figure 14	Phase One Circulation & Parking Improvements	3-5
Figure 15	Phase Two Circulation & Parking Improvements	3-7

Figure 16 Access Plan 3-11
Figure 17 Municipal Water Distribution Systems 6-3
Figure 18 Wastewater System Map 6-7
Figure 19 Drainage Plans 6-15

TABLES

Table 1 Existing and Proposed Water Demand 6-2
Table 2 Thresholds for Identifying Substantial Increases in Noise Levels 7-4

EXECUTIVE SUMMARY

Purpose

The Soquel Union Elementary School District Opal Cliffs Public Works Plan ("Plan") governs future development on a 9.79-acre area owned by the District within the City of Capitola's Coastal Zone in Santa Cruz County.

Plan Area

The Plan area is west of 47th Avenue, south of Topaz Street and Jade Street, east of the Tradewinds mobile home park, and north of the Union Pacific railroad tracks. The Plan area is located in the Opal Cliffs neighborhood, about 450 feet from the bluffs above Capitola Beach, but is not within direct view of the ocean due to intervening development. The Plan area consists of one parcel owned by the Soquel Union Elementary School District. Although the entire site is considered an approved school site by the Department of Education, the Plan area is improved as a public park, including a community center and playing fields, which are operated and maintained by the City of Capitola, with the cooperation of the School District. A full description of the Plan area is included in Chapter 1.0.

Major Provisions

The Plan directs the future land use on the site, which is proposed as the development of an elementary school and allowing the continued use of many of the existing park facilities. The school facility would be developed on the eastern portion of the site and is intended to occur, at the discretion of the District, in two phases: Phase One is intended to consist of pre-school through first grade and would replace a community garden. Phase One improvements include the removal of one tree. Phase Two is intended to consist of second grade through fifth grade, and would involve the removal of a soccer field, basketball court and two additional trees. At completion of both phases the school would have five buildings (three classroom buildings, one classroom/administrative building, and a multipurpose building) and 400 students. Additional detail on land use and proposed development is presented in Chapter 2.0.

Goals, Policies, and Programs

The Plan presents policies that provide direction in the areas of land use, circulation, parks and recreation, visual resources/public access, natural resources, cultural resources, infrastructure and hazards. Following are the Plan policies in summary form. Refer to each referenced chapter of the Plan for the full version of goals, policies, and implementation actions.

Land Use (Chapter 2)

- Implement existing Capitola General Plan/LCP coastal land use and zoning designations (Public Facilities – Park and Public Facilities – School).
- Add school facilities on the eastern portion while continuing to allow compatible park uses on the site at least during the original term of the expired lease with the City of Capitola.
- Provide a transition between the school and immediately adjacent residential uses and ensure the school buildings complement the mass and scale of the neighborhood.

Circulation (Chapter 3)

- Provide safe and adequate vehicle access, internal circulation, and parking for existing and proposed uses.
- Provide adequate passenger loading and unloading zones for Special Education transportation vehicles.
- Maintain pedestrian and bicycle access across the site that is equal to or greater than current levels.
- Encourage alternatives to automobiles.
- To the extent feasible, discourage traffic on the smaller east-west residential streets.
- Determine the District's fair share toward payment of Traffic Impact Fees to offset project contributions to existing unacceptable levels of traffic.
- Support safety improvements to the 47th Avenue railroad crossing.

Parks and Recreation (Chapter 4)

- Continue to allow compatible existing park facilities on the site to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.
- Continue to allow compatible shared use of park and school facilities to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.

Visual Resources/Public Access (Chapter 4)

- Provide public access to the site.
- Preserve pedestrian access opportunities for future trail connections to and from the Union Pacific Railroad right-of-way where determined to be feasible and safe by the District.

Natural Resources (Chapter 4)

- Maintain mature trees along the periphery except those identified as needing to be removed to accommodate the school improvements.
- Protect nesting birds.
- Ensure that runoff does not significantly impact the water quality of Soquel Creek.
- Encourage alternatives to automobiles.
- Minimize idling engines.
- Minimize construction-related dust and equipment emissions.

Cultural Resources (Chapter 5)

- Take steps to protect unknown cultural resources if discovered.

Infrastructure (Chapter 6)

- Utilize Soquel Creek Water District and Santa Cruz County Sanitation District services.
- Sustainable storm drainage practices shall be implemented on the site.
- Conserve water resources.
- Utilize drought tolerant landscape plantings.
- Facilitate a safe environment within the site.
- Promote recycling and minimize disposal in landfills.
- Facilitate conservation of electricity.
- Minimize vehicle miles traveled.

Hazards (Chapter 7)

- Protect students from potential hazards near the site.
- The District will construct buildings in accordance with current state standards.
- Minimize exposure of nearby residences, students, and park users to excessive noise.

Plan Consistency

As discussed in the Land Use portion of the Plan, the Plan directs the development of shared school and park uses within the Plan area consistent with the goals and policies of the Coastal Act, the basic underlying zoning PF Public Facilities District, the overlying CZ Coastal Zone Combining District implementing the LCP, and the City of Capitola General Plan land use designations consistent with the Coastal Act, which are carried forward on the City of Capitola Coastal Plan Land Use Plan Map. A consistency analysis is included in Appendix I.

1.0

INTRODUCTION

1.1 Introduction

Purpose of Plan

This Soquel Union Elementary School District Opal Cliffs Public Works Plan (hereinafter "Plan" or "District Plan") provides long-term and comprehensive guidance and policy direction for land use, improvements, operations and maintenance of the Soquel Union Elementary School District (hereinafter "District") property known as the Jade Street or Opal Cliffs site located in the City of Capitola, Santa Cruz County. The Soquel Union Elementary School District Opal Cliffs Public Works Plan policy guidance and implementation plan are consistent with the Coastal Act and have been prepared in conformance with the *City of Capitola Local Coastal Program* (1981) (LCP).

The Plan would govern any future development on the site as defined in Public Resources Code Section 30106, and any such development must be consistent with the certified Plan. The Plan includes provisions for an Elementary School Public Works Project, which covers the construction and operation of public school facilities and infrastructure on the site. The elementary school project is more particularly described in Section 2.0, Land Use Plan.

A number of technical reports have been prepared to update the current conditions of the Plan area and assess the environmental effects of the related project. These reports include a biological assessment, cultural resource evaluation, traffic impact study, railroad risk analysis, environmental site assessment phase I, preliminary environmental report, and geologic and seismic hazards evaluation. These technical studies, combined with the policies of the Coastal Act and City of Capitola LCP, provide the basis for the Plan, and are included as appendices to the Plan.

Background

The Soquel Union Elementary School District purchased the 9.79 acre Jade Street or Opal Cliffs site as a future school site in 1956. The site is registered with the state Office of Public School Construction as a school site. The District constructed the restroom building, tennis courts, and a parking lot on the site in 1977 with approval of the Division of the State Architect, who supervises design and construction of public school facilities.

In 1982, based upon a spirit of cooperation and commitment to maximizing joint use potential of the property for schools and parks, the District and the City of Capitola ("City") entered into a lease under which the City developed a community center and further developed and maintained the recreational facilities on the site for use as a park and for school purposes. For example, the soccer field on the site is the home field for the New Brighton Middle School "Vikings" soccer team.

The lease as amended in 1985 and 1986 was for a term of fifty years or until the District gave the City twelve months written notice that the District required the site for a public school building, with the City retaining the right to continue use of the community center facility for fifteen years after the District gave such notice. The relationship between the City and the District became strained in 2000 when the District was in the process of planning to use a portion of the site for school buildings, but the City refused to vacate any portion of the site for use by the District. In July 2000, the District gave the City formal written notice that the District required the site for public school buildings. The District filed a "Complaint for Wrongful Occupation of Real Property; Ejectment" against the City, and the Court entered a Conditional Judgment of Ejectment stating that "the lease was terminated effective July 26, 2001" but that "given the spirit of cooperation and commitment to maximizing joint use potential that existed in 1986," the City has the right "to remain in possession during the original term of the lease until the District is ready to actually commence use of the property, with all necessary approvals, whether that be the movement of portable buildings on the property or the commencement of grading for a new school". A copy of the Court's Conditional Judgment of Ejectment is included as Appendix A.

Location and Existing Setting

Location

The 9.79-acre Plan area is located at 4400 Jade Street, west of 47th Street and south of Jade Street, in the City of Capitola coastal zone, Santa Cruz County, assessor's parcel number 034-551-02. The site lies approximately 69 feet above mean sea level with the Monterey Bay shoreline located about 800 feet to the south. The site is bounded by an active branch of the Union Pacific Railroad tracks (formerly Southern Pacific Railroad)

and a residential neighborhood to the south, Jade Street and a residential neighborhood to the north, the Tradewinds Mobile Home Park to the west, and 47th Street and another mobile home park to the east. Several residential neighborhoods, public streets, and the Union Pacific Railroad branch line are located between the site and Monterey Bay. Railroad service currently consists of an occasional freight transport between Watsonville to the south, and Davenport to the north. Figure 1, Regional Location, presents the location of the City of Capitola. Figure 2, Project Location, presents the location of the Opal Cliffs site within the context of the City of Capitola's coastal zone boundary. Figure 3, Aerial Photograph, presents the relationship of the site and its amenities with adjacent uses.

Plan Area Setting

The Plan area, as discussed above, is currently operated and maintained by the City of Capitola (hereinafter "City") as a community center and public park, which is known as Jade Street Park. Existing improvements on the north side of the site include the community center building, play structures, a restroom facility, two parking lots and a community garden. A soccer field occupies much of the eastern portion of the site and a baseball diamond occupies much of the west side of the site. One basketball court and four tennis courts are located between the soccer and baseball fields, south of the central parking lot. Redwood trees line the southern boundary of the site; several more redwoods and liquidambar trees are located throughout the site. Figure 4, Site Photographs, displays the existing amenities on the site.

Recreational amenities on the site include softball and baseball, tennis, and youth soccer programs. The soccer field is the home field for the New Brighton Middle School soccer team. The City of Capitola Recreation Department operates its programs from the community center, including public classes for all ages. The Capitola-Soquel Community Activities Agency, which operates a range of senior classes and activities at various locations throughout the City of Capitola, also provides senior programs at the District property and coordinates with Meals On Wheels to provide dining services at the Community Center during the week. The community center is available for group rentals such as meetings and gatherings. The community garden consists of individual plots made available to the public for a small fee.

In addition to the recreational facilities on the site, a portion of the northwest corner of the site and an adjoining parcel between Jade Street and the Plan area were the subjects of a reciprocal lease agreement between the City and the adjacent Tradewinds Mobile Home Park. The adjoining northern parcel, owned by Tradewinds, is used as public parking for the site and community center in return for storage for the mobile home park on the northwest corner of the District's property. Public parking is available on the adjacent parcel between the community center and Jade Street and in a small parking area on the site between the community center and the community garden. Vehicle access to the parking lots on the site is available from Jade Street. Pedestrian access is also available from Jade Street, the railroad right-of-way and the sidewalk, and an improved drop-off area in the 47th Street public right-of-way.

Soquel Union Elementary School District

The District operates three elementary schools in the Capitola/Soquel area: Main Street Elementary School, Soquel Elementary School, and Santa Cruz Gardens Elementary School, and a single middle school, New Brighton Middle School. Each of the elementary schools provides kindergarten through fifth grade education programs and the middle school provides sixth grade through eighth grade programs.

The School District's plans to offer preschool at Jade Street are driven by the vital need for affordable, accredited, secular and standards-based preschool in the School District's community. The importance of preschool in a child's educational development is widely acknowledged by educators, and the need for general education preschool for children residing in the School District is evident. Using information obtained from the Santa Cruz County Child Care Council, the District estimates that there are several hundred preschool-age children in the District. The School District is currently offering a general pre-school program at its Santa Cruz Gardens Elementary School through a private vendor, Campus Kids Connection, Inc., which consistently operates at full capacity of 30 students, and has a wait list.

Although not required by State law to do so, the current preschool provider has agreed to follow the curriculum and testing required for State funded preschools. The School District intends to duplicate this model at Opal Cliffs site, and will likely contract with Campus Kids Connection, Inc. to provide the preschool program there, at least until such time as State funding is available to fund a program operated by School District employees.

Elementary School Public Works Project

The District proposes construction of certain school facilities on the eastern portion of the site. The District's Elementary School Public Works Project is intended to consist of two phases of construction, at the discretion of the District Board. The Two Phases are intended to consist of classroom facilities and play areas on the eastern portion of the site and reconfiguration of the central parking lot.

The two-phased project consists of the initial construction of a pre-school, kindergarten and first-grade to meet existing population demands within the district, and may also include expansion of the elementary school facility to a second through fifth grade, as well. To the extent consistent with the District's use of the site during the remainder of the original term of the expired lease, the District intends to permit the City to continue to use the portions of the site not in use by the School District, including those portions of the site currently occupied by the community center, existing playground, baseball diamond, and tennis courts. Funding for the proposed school facility improvements is provided by District Capital Facilities Funds. Specific components of the public works project, including phasing, related effects to the environment, and consistency with the Coastal Act and City's LCP are presented in each section of the Plan.

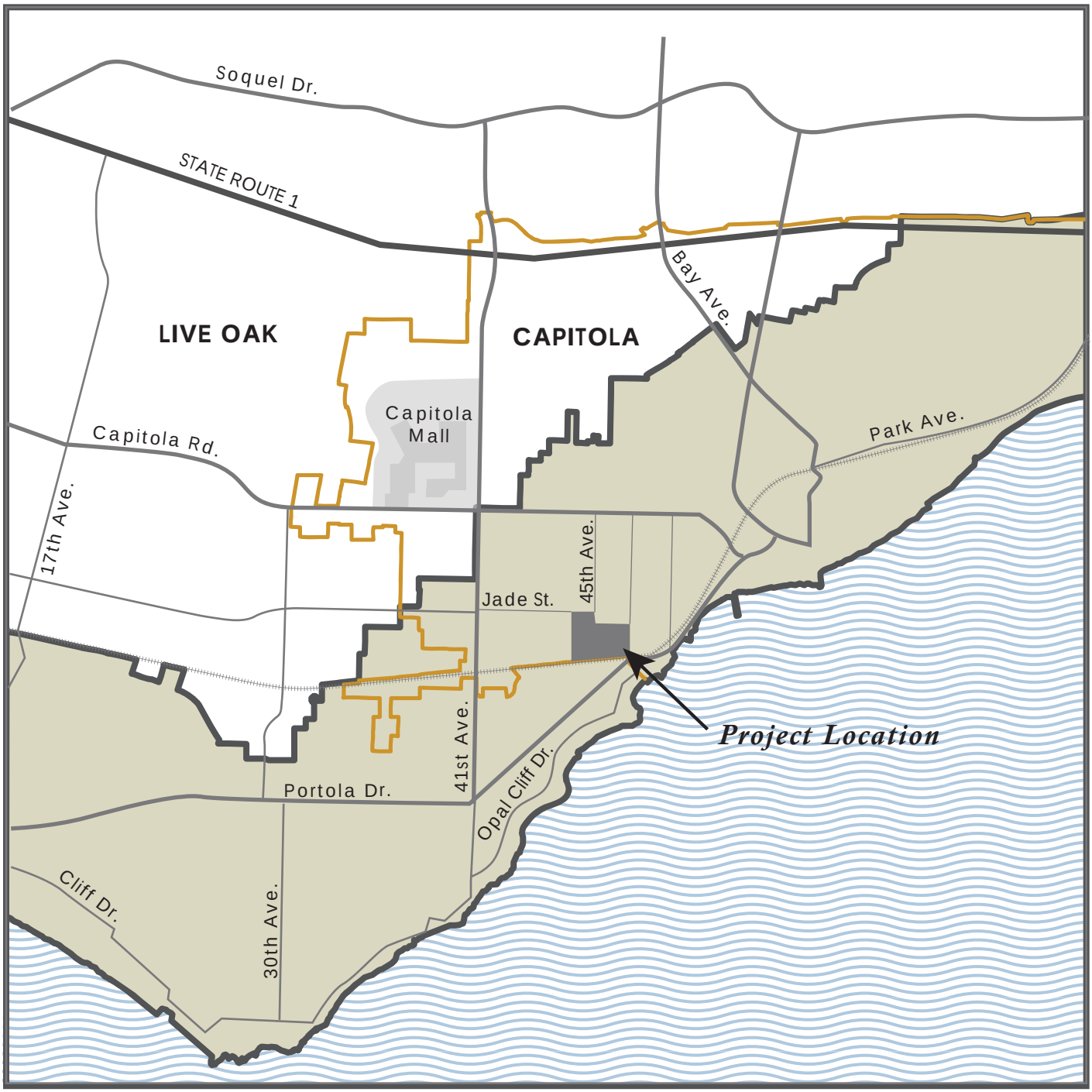
Not to Scale

Source: EMC Planning Group Inc. 2008

Figure 1
Regional Location

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.



Coastal Zone

City Limits

Not to scale

Source: EMC Planning Group Inc. 2008

Figure 2

Project Location

SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.

0 150 feet

Plan Boundary

Source: EMC Planning Group Inc. 2008, Google Earth 2008

Figure 3
Aerial Photograph

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

1 Community Garden

2 View Across Site From 47th Avenue

3 47th Avenue Path and Soccer Field

4 Union Pacific Railroad

5 Baseball Diamond and Community Center

6 North Parking Lot

Source: EMC Planning Group Inc. 2008

Figure 4

Photographs

SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.

1.2 Relationship of the Public Works Plan to the Coastal Act

The broad goals of the Coastal Act are stated in Public Resources Code (PRC) 30001.5 and are as follows:

a) Protect, maintain and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and manmade resources.

b) Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.

c) Maximize public access to and along the coast and maximize public recreation opportunities in the coastal zone, consistent with sound resource conservation principles and constitutionally protected rights of private property owners.

d) Assure priority for coastal-dependent development over other development on the coast.

e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

The Plan is consistent with the goals and policies of the Coastal Act. A consistency analysis that weighs the proposed Plan with Coastal Act policies is presented in Appendix I.

1.3 Relationship of the Public Works Plan with City of Capitola Local Coastal Program and General Plan

The City of Capitola LCP Land Use Plan (LUP) was certified in 1981 and its policies are incorporated into the City's current (1989) General Plan. The LUP includes framework policies that provide direction in the event of overlapping or conflicting policies between the two documents. The District's proposed public works plan may not be certified unless it is consistent with the certified LCP. Once certified, the public works plan would be the guiding coastal policy document for the subject area. The following broad policies provide a framework to promote internal consistency in the certified Plan for future amendments.

Policy 1. Where policies in the Public Works Plan overlap or conflict, the policy that is most protective of coastal resources shall take precedence.

Policy 2. Where policies in the Public Works Plan overlap or conflict with other local, state and federal policies, the adopted Plan policies shall be the prevailing policy.

1.4 Public Works Plan Preparation Process

The Plan provides land use policy and implementing actions which meet the requirements, and implement the provisions and policies, of the Coastal Act and the City of Capitola LCP. The Plan may not be implemented until approved or certified on appeal or otherwise by the City of Capitola or Coastal Commission (collectively hereinafter "Coastal Commission"). Once certified, the Plan would become binding on state agencies, special districts and local governments, and would provide for the development, operations and management of the subject District property as described in the Plan.

The City of Capitola has a certified LCP and full consultation with the City is required as part of the review process to determine if the Plan conforms to the policies and provisions of the City's LCP. Once submitted, the Plan will be reviewed by staff and public hearings will be held, during which the Coastal Commission will determine if any further actions are needed to comply with the California Coastal Act. Approval of the Plan is contingent upon the Coastal Commission finding that the Plan conforms to the City of Capitola LCP.

Development of future facilities on the site not discussed herein would require additional approval by the Coastal Commission. The certified Plan may also be amended, but no amendments or projects shall take effect until the amendment has been certified by the Coastal Commission. Any proposed amendment would be submitted to and processed by the Coastal Commission in the same manner prescribed for an amendment to a local coastal program.

1.5 Public Works Plan Organization and Content

The Plan consists of eight (8) sections. Sections one through seven include a background discussion, a list of relevant Coastal Act policies, a list of existing local regulations, a discussion of the District goals and policies, and projects, followed by a list of the Plan goals, policies and implementation measures. Section 8 provides a list of preparers, persons consulted, and source documents. Technical reports and related Source Documents are included as Appendices A through H, and a consistency analysis of the Plan with the Coastal Act and City of Capitola Local Coastal Program, is included as Appendix I. Water and sewer service "Will-Serve" letters are included in Appendix J; Implementing procedures are included in Appendix K. A Greenhouse Gas Emissions Report is included in Appendix L.

2.0

LAND USE PLAN

2.1 Background

Community Character

The City of Capitola is characterized in the general plan and LCP as a unique seaside resort community with its heritage stemming from the late 19th century. Then, as now, the town was a popular coastal retreat for visitors from the Central and Santa Clara valleys. The community continues to be a popular coastal destination, preserving its cultural and historic roots by maintaining a mix of residences and visitor-serving commercial uses in the older portions of the City's coastal zone: the Village, the Wharf, and Depot Hill. In terms of growth potential the City is essentially built-out with few opportunities for new development or annexation. The physical boundaries of the City are not anticipated to change; however, the City's general plan identifies issue areas related to preserving neighborhood character as existing land uses change or intensify in the future.

Neighborhood Character

The Plan area is the Jade Street site owned by the District, northwest of the Capitola Village and Wharf in the Opal Cliffs neighborhood. The site is located within a residential neighborhood inland from the coastline, north of Opal Cliffs Drive, Portola Drive and the Union Pacific Railroad tracks. Residential uses in the immediate vicinity of the site are primarily one and two-story single-family dwellings, mobile homes, and also multi-family residential uses northeast of Jade Street. The neighborhood and site are accessible from 47th Avenue by way of Portola Drive to the south and from Jade Street and Topaz Street by way of 45th Avenue

to the north. The neighborhood is developed in a standard grid pattern with curbs, gutters and sidewalks present in most areas. Jade Street, Forty Fifth Avenue and 47th Avenue are the major access routes within the neighborhood and provide access between inland and coastal areas of the City. The latter two streets are categorized as collector routes by the City's general plan.

Pedestrian access within the neighborhood and to the site is available from these streets and also by way of the Union Pacific Railroad right-of-way. Located inland from the more heavily frequented beach areas, and as the location for the City's Community Center and the Community Garden, the public park amenities on the site are attractive mainly to local residents. Refer to Figure 3, Aerial Photograph, and Figure 4, Site Photographs, for graphic representations of the site and surrounding uses.

Existing Land Use Designations

According to the City of Capitola General Plan / Coastal Land Use Plan / Sphere of Influence Map, the approximate 5.13-acre eastern portion of the Plan area is designated as "SC" for "School" under the category "Community Facilities", and the approximately 4.66-acre western portion of the site is designated "P" for "Parks & Open Space" under the category "Parks & Open Space". The Community Facilities category includes, among other things, churches, schools, the Civic Center on Capitola Avenue and City-owned parcels. The Parks and Open Space category includes open space lands whose primary purpose is recreation. The City of Capitola Coastal Plan Land Use Plan Map illustrates the relationship of the site to the General Plan/Coastal Land Use Plan land use designations for the site. The Coastal Plan Land Use Map is included as Exhibit A.

According to the City's LCP, "[a]s in the case of a General Plan Map, this Land Use Plan Map is not meant to be a parcel-by-parcel description of appropriate land uses", but "[r]ather, the Map should be use[d] in conjunction with the Policies to guide development of individual parcels." (LCP page 84.) Consistently, the City of Capitola Zoning Map shows the basic underlying zoning is "PF" (Public Facility District) for the entire site, with a Coastal Zone ("CZ") Combining District overlay of "S" (School) over the eastern portion of the site and "P" (Parks and Open Space) over the western portion of the site.

The CZ Coastal Zone Combining District implements the LCP (Capitola Municipal Code 17.46.010). Pursuant to Municipal Code Section 17.46.020, permitted uses in the CZ Combining District "are those allowed in the basic underlying zoning district". The principal permitted uses in the underlying PF Public Facilities zoning district include any facilities owned or operated by the District, as well as public or private schools and their ancillary facilities (Capitola Municipal Code 17.42.040).

Accordingly, the LUP land use designations and the uses permitted by the CZ Coastal Zone Combining District regulations and underlying PF Public Facilities District regulations allow the school uses on the site described in this public works plan. Figure 5, Coastal Zone Combining District Map, presents the relationship of the underlying Public Facilities zoning district with the overlying Coastal Zone Combining District on the site.

Not to scale

Coastal Zone (CZ) Combining District Zoning: Public Facilities

PF-P	Public Facilities - Parks
PF-S	Public Facilities - School

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008
City of Capitola Zoning Map 2005

Figure 5
Coastal Zone Combining District Map

SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.

Existing Land Uses

Both the eastern and western portion of the site are improved with existing facilities, which are consistent with park and school purposes and conform to the LUP land use designations and permitted uses in the PF zone district and the CZ overlay district. Existing uses on the site are comprised of the following:

Western Portion:

- community center;
- playground equipment;
- baseball field;
- snack bar; and
- off-street parking along Jade Street.

Eastern Portion:

- central parking lot accessible from Jade Street;
- basketball court;
- four tennis courts;
- soccer field;
- community garden; and,
- public restrooms.

2.2 Proposed Uses

Public Works Plan

The proposed Public Works Plan (Plan) maintains the existing land use designations for the entire site identified in the City of Capitola LCP/LUP, and the permitted uses for the PF and CZ Overlay zone districts. The proposed Plan reconfigures existing facilities and constructs new facilities on the eastern portion of the site consistent with allowable and permitted uses. The District intends to permit the City, at least during the remainder of the original term of the expired lease, to continue to use the portions of the site not in use by the District, including those portions of the site currently occupied by the community center, existing playground, baseball diamond, and tennis courts.

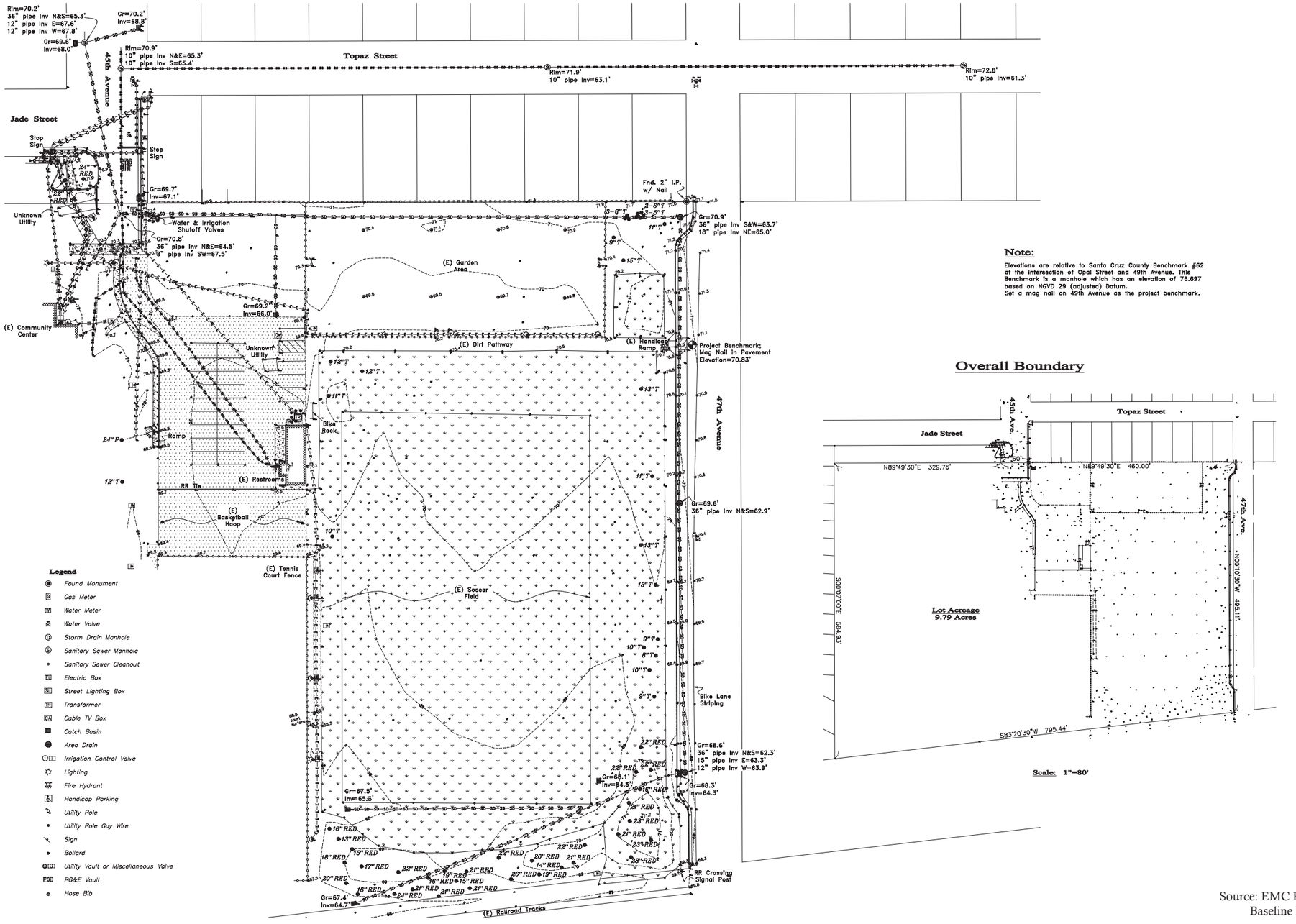
The Plan includes the construction of preschool and elementary school facilities on the eastern side of the site, which would implement LUP policies related to the provision of adequate school facilities for students within the District. Figure 6, Topographic Survey, presents the locations of trees, existing utilities and improvements on the eastern portion of the site. The proposed preschool and elementary school is intended to be constructed in two phases, and will be funded with District Capital Facilities funds. Figure 7, Phase One Site Plan and Figure 8, Phase Two Site Plan, present the two phases of the proposed preschool and elementary school facilities. The actual construction and timing for implementing these phases will be at the discretion of the Soquel Union Elementary School District Board. The removal of three ornamental trees is proposed to accommodate the Phase One and Phase Two improvements. Figure 9, Tree Removal Plan, presents the number, location and species of trees to be removed to accommodate the proposed additions.

Elementary School Project

Phase One

The first phase consists of the installation of portable buildings, play areas, courtyards and improvements to the existing central parking lot on a portion of the northeastern quarter of the site. The expanded parking lot would be available for users of the recreational facilities on the site after school hours. As presented in Figure 7, Phase One Site Plan, the parking lot would be expanded from 26 existing stalls to 46 stalls including two handicapped spaces, and would include a curbside pickup/drop-off zone near the administration building and existing public restroom. At buildout, the Phase One improvements will house a pre-school, kindergarten, first grade, and administrative offices (K-1). The estimated student population for the Phase One improvements is 40 pre-school students and 40 elementary school students. Operation and maintenance of the facility would require approximately eight employees consisting of on-site faculty and staff (Brown, email correspondence, June 30, 2008).

The majority of the Phase One improvements are located in the area currently occupied by the community garden, which would be removed prior to construction of the preschool buildings. Relocation of the garden is not included in the Plan. Installation of the proposed Phase One improvements includes the removal of one tree to accommodate the pre-school buildings. Phase One improvements also include reconfiguration of the central parking lot to create student drop-off and loading areas, sidewalks, pedestrian and bicycle access, school facility signage, landscaping, lighting, and ancillary amenities such as bike racks, pedestrian walkways, and trash enclosures. With the exception of the removal of the community garden, existing park and community center uses on the site would be consistent with implementation of the Phase One improvements.



Note:

Elevations are relative to Santa Cruz County Benchmark #62 at the intersection of Opal Street and 49th Avenue. This Benchmark is a manhole which has an elevation of 76.697 based on NGVD 29 (adjusted) Datum.
Set a mag nail on 49th Avenue as the project benchmark.

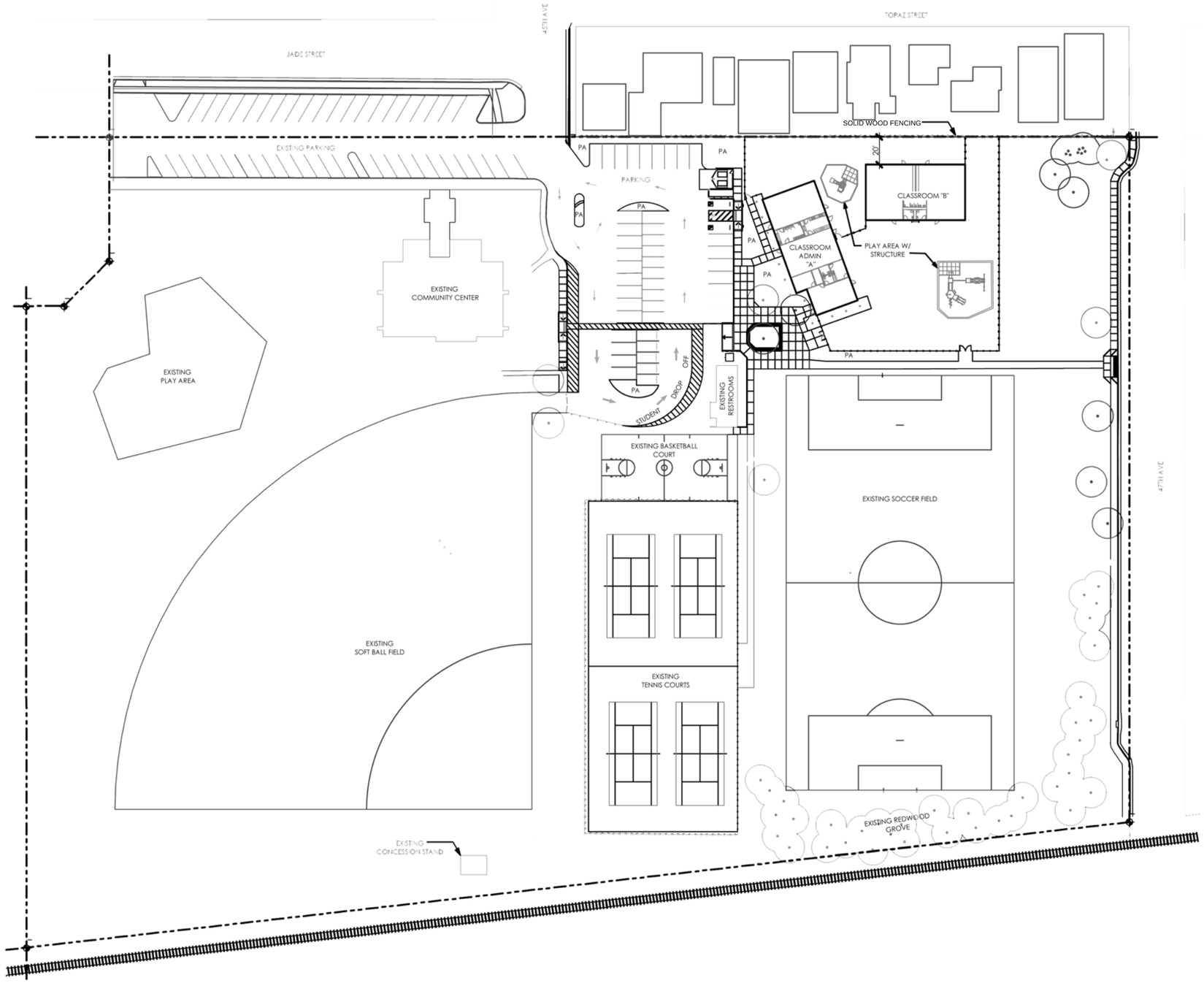
Overall Boundary

Source: EMC Planning Group Inc. 2008,
Baseline Land Surveyors, Inc. 2007

Figure 6
Topographic Survey
SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.



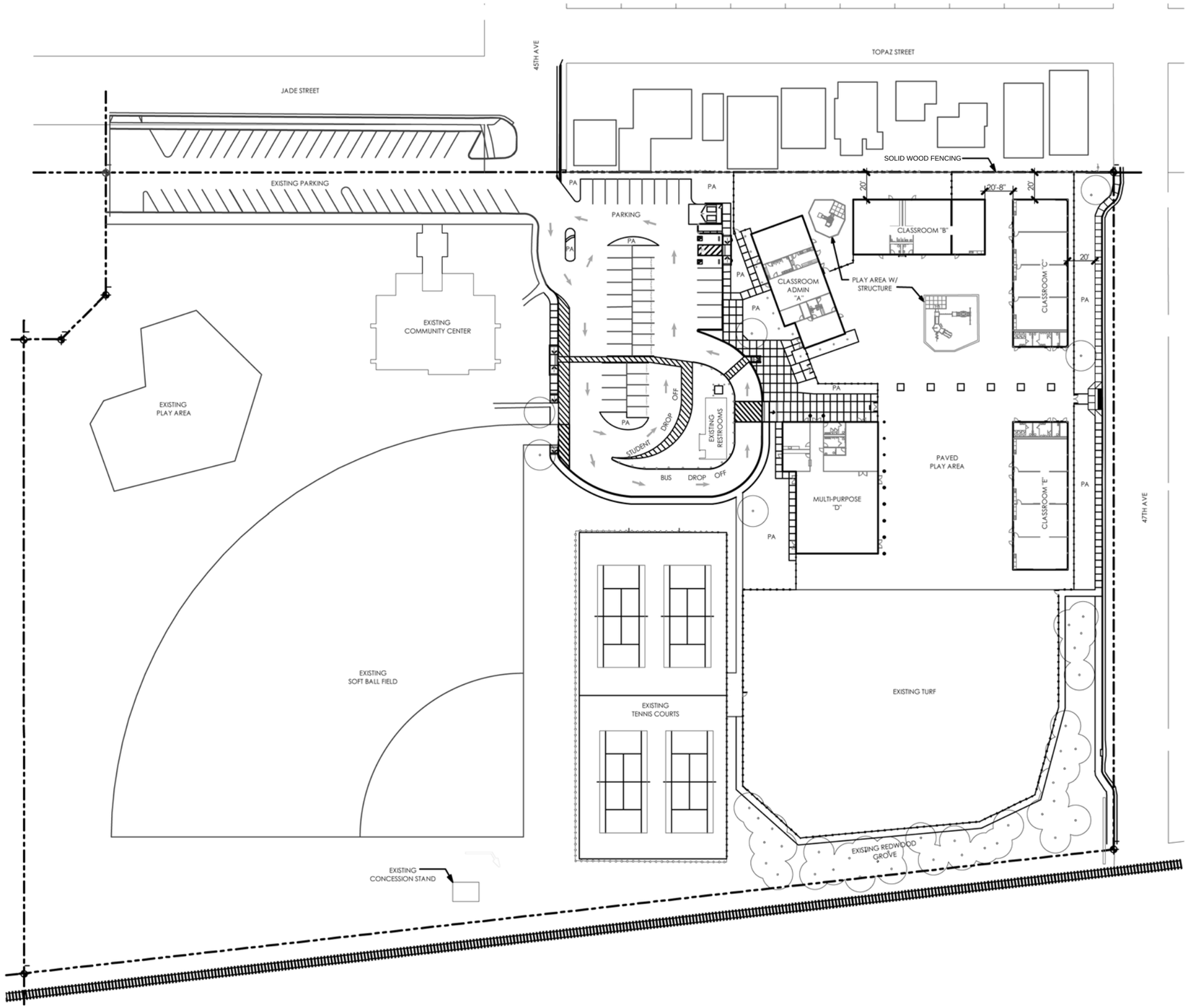
0 80 feet

Source: EMC Planning Group Inc. 2008,
Weston Miles Architects, Inc. 2008

Figure 7
Phase One Site Plan

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

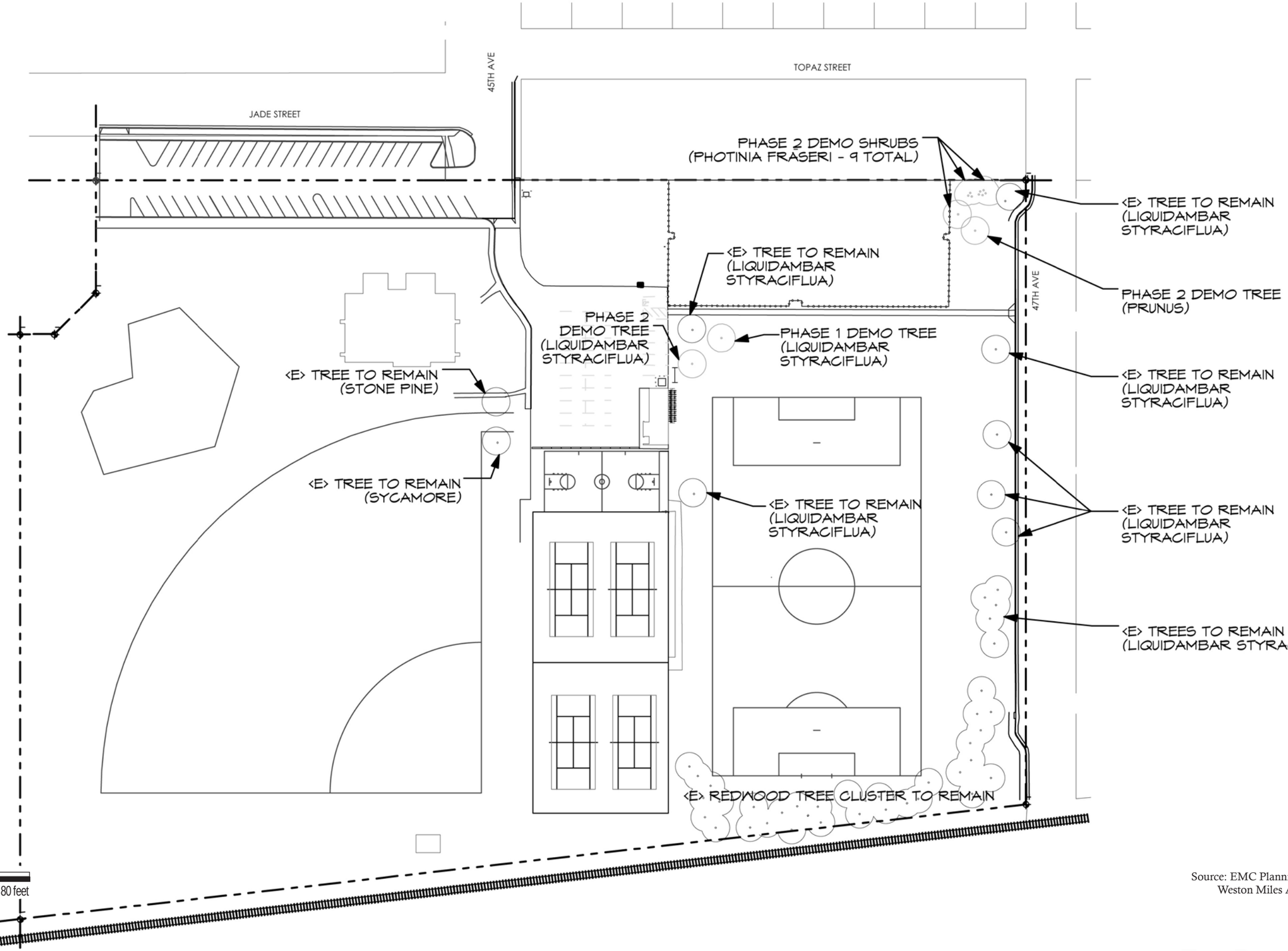


Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 8
Phase Two Site Plan

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 9
Tree Removal Plan

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

Phase Two

As depicted on the Phase Two site plan (Figure 8), three additional buildings would be constructed in the second phase: two classroom buildings and one multi-purpose building. This phase consists of the construction of additional classroom wings to expand the facility from pre-school and K-1 to a full pre-school and kindergarten through fifth grade (K-5) elementary school if, and when, enrollment warrants. The estimated student population of the K-5 facility is 80 pre-school students and 320 elementary students for a total student body of 400 students. Approximately 19-27 faculty members and staff are needed for a facility of this size (Brown, email correspondence. June 30, 2008). Two additional trees would be removed from the site to accommodate the Phase Two improvements: one near the northeast property line and one near the existing public restrooms. Phase Two improvements include replacing the soccer field with a fenced playground and eliminating the basketball court to accommodate reconfiguration of the central parking lot. Phase Two improvements to on-site parking include enlarging the circulation area to allow a dedicated loading zone at the southern end of the central lot and reducing the number of spaces in the central parking lot from 46 spaces to 44 spaces to accommodate the dedicated loading area.

Site Planning, Landscaping and Lighting Improvements

The proposed elementary school project includes design features such as low profile buildings, increased setbacks, landscaping and lighting to ensure compatibility with adjacent uses in the neighborhood and immediately adjoining the site. Policies to mitigate potential conflicts between the school use and adjacent residences on Topaz Street are presented graphically in Figure 10, Land Use Mitigation Site Plan. Preliminary landscaping and lighting plans have been developed consistent with the design mitigations and are illustrated in Figure 11, Phase One Preliminary Landscape Plan, and Figure 12, Phase Two Preliminary Landscape Plan. The proposed landscaping includes the use of drought-tolerant plant and turf species and low-growing shrubs and grasses in a landscaped buffer area between the residences on Topaz Street and the school facility. Figure 13, Preliminary Lighting Plan, presents the locations and luminescence standards for exterior lighting on the grounds and buildings. Final landscaping and lighting plans for each Phase would be approved by the District Board prior to installation.

2.3 Existing Policies and Regulations

Coastal Act Policies

The following Coastal Act policy is applicable to the proposed land use on the site.

Policy 30253. New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

(3) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

(4) Minimize energy consumption and vehicle miles traveled.

(5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.

Local Coastal Program and General Plan Goals and Policies

City of Capitola LCP policies and General Plan Land Use Element goals and policies relevant to the Plan's proposed land uses are as follows.

Local Coastal Program Policies

Conservation

Policy 4. It shall be the policy of the City of Capitola to cooperate with other agencies in the County and/or region for master planning, delivery and allocation of available Public Services consistent with the Coastal Act, Sec. 32054 and 32055 (i.e. water, [fire], sewer, schools).

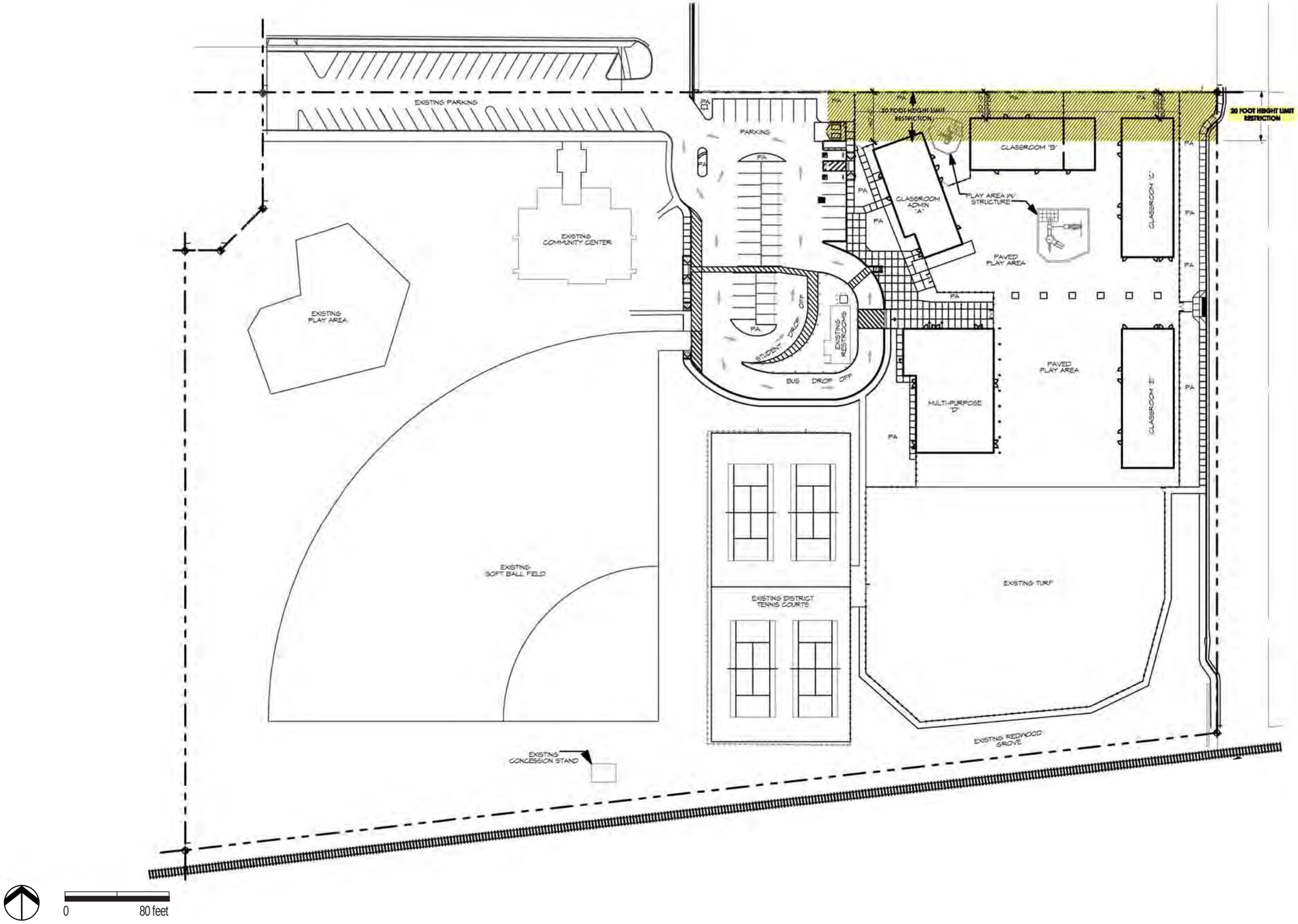
Land Use

Policy 7. It shall be the policy of the City of Capitola to maintain and enhance access to Capitola Beach, Village, and Wharf while maintaining and enhancing the existing character of Capitola Village and the surrounding residential neighborhoods. The intensity of new development shall be limited to the availability of parking and other alternate solutions, such as the shuttle bus and remote parking.

Policy 17. Areas designated as visitor serving and/or recreational shall be reserved for visitor support services or recreational uses. Permissible uses include, but are not limited to, hotels, motels, hostels, campgrounds, food and drink service establishments, public facilities, public beaches, public recreation areas or parks, and related rental and retail establishments.

Open Space, Parks and Recreation

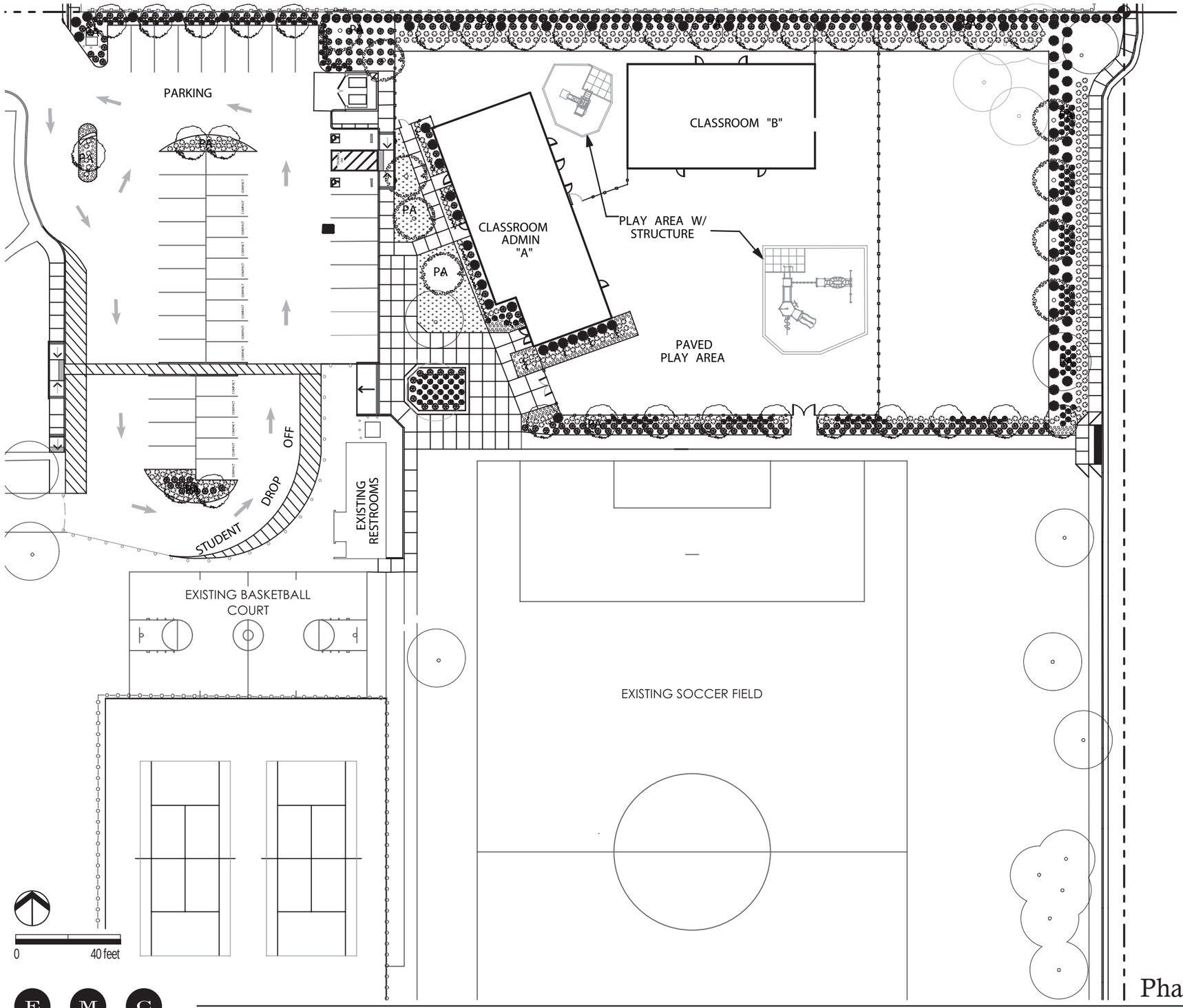
Policy 21. It shall be the policy of the City of Capitola to provide new park sites to fill the existing City park needs. It is also the policy of the City to ensure the protection of passive open spaces through proper development design and permit conditions.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 10
Land Use Mitigation Plan
SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.



TREES

<E> TREES

LC LAGERSTROEMIA "WHITE" CRAPE MYRTLE 15GC

PCA PYRUS CALLERYANNA ARISTOCRAT 15GC

SHRUBS

PF PHOTINIA FRASERI 5GC

PR PENNISETUM 'RUBRUM' FOUNTAIN GRASS 5GC

MC MUHLENBERGIA 1GC

EK ERIGERON KARVINSKIANUS SANTA BARBARA DAISY 1GC

HE HEMEROCALLIS 'YELLOW' DAYLILY 1GC

VINES

CA CLEMATIS ARMANDII- PLANTED AT BASE OF ALL COLUMNS AROUND CLASSROOM /ADMIN BLDG. "A" (TYP. OF 12)

GROUND COVER

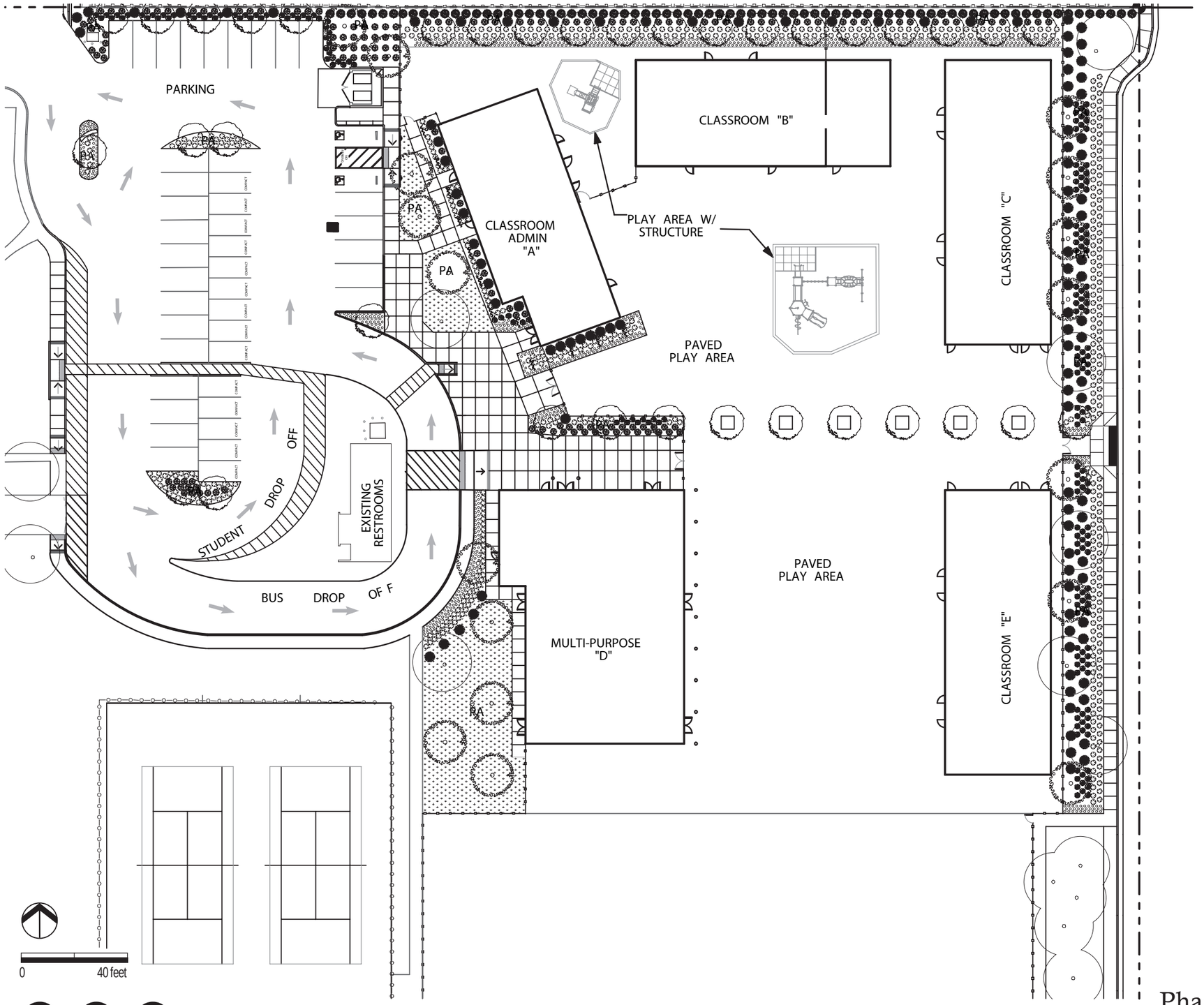
OJ OPHIOPOGON JAPONICUS 1GC @ 18" O.C.

100% FESTUCA RUBRA- JASPER II, NAVIGATOR BOREAL, CINDY LOU

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 11
Phase One Preliminary Landscape Plan

This side intentionally left blank.



TREES

<E> TREES

LC LAGERSTROEMIA "WHITE" CRAPE MYRTLE 15GC

PCA PYRUS CALLERYANNA ARISTOCRAT 15GC

SHRUBS

PF PHOTINIA FRASERI 5GC

PR PENNISETUM 'RUBRUM' FOUNTAIN GRASS 5GC

MC MUHLENBERGIA 1GC

EK ERIGERON KARVINSKIANUS SANTA BARBARA DAISY 1GC

HE HEMEROCALLIS 'YELLOW' DAYLILY 1GC

VINES

CA CLEMATIS ARMANDII- PLANTED AT BASE OF ALL COLUMNS AROUND CLASSROOM /ADMIN BLDG. "A" (TYP. OF 12)

GROUND COVER

OJ OPHIOPOGON JAPONICUS 1GC @ 18" O.C.

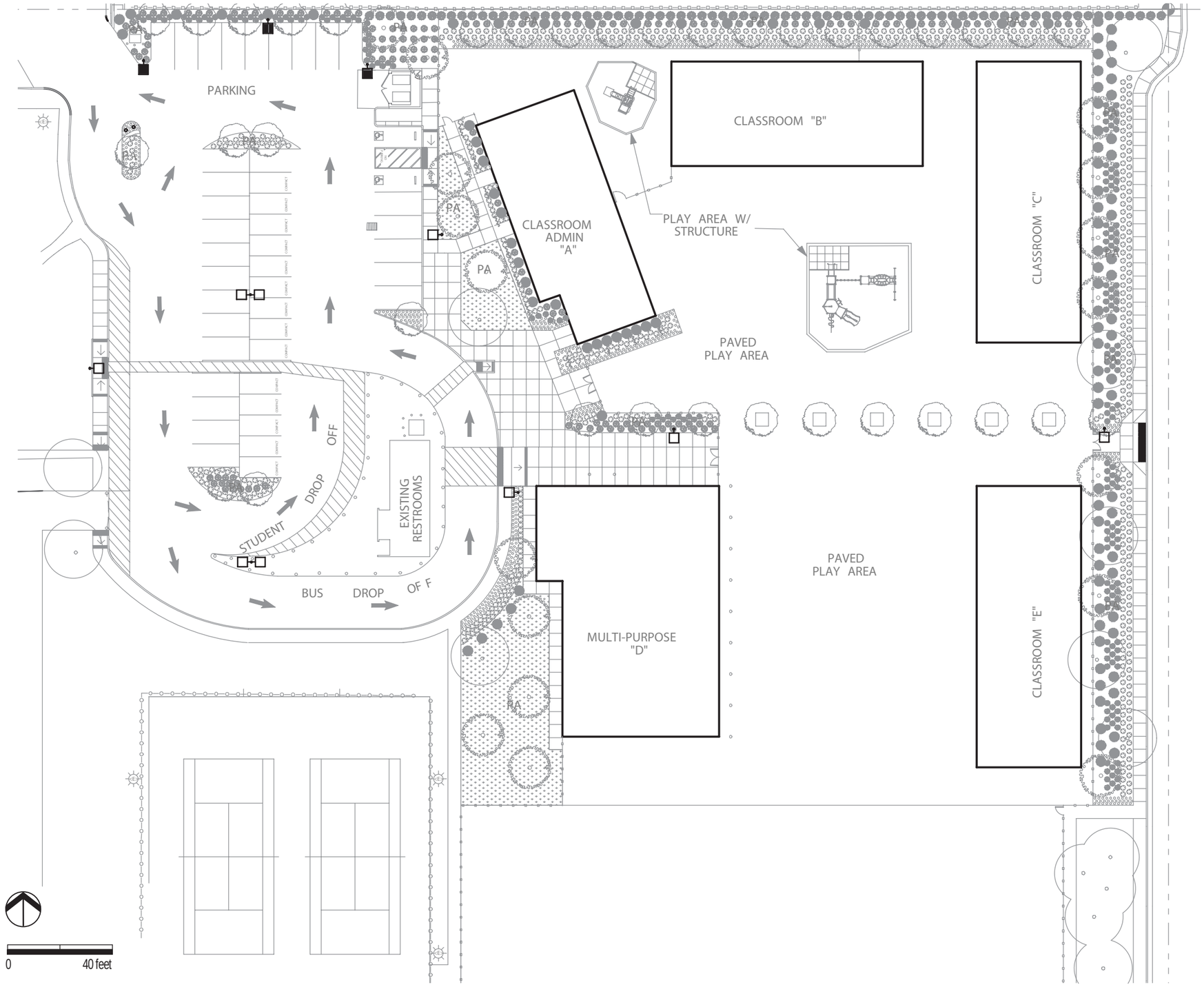
100% FESTUCA RUBRA- JASPER II, NAVIGATOR BOREAL, CINDY LOU

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 12
Phase Two Preliminary Landscape Plan
SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.



FIXTURE SCHEDULE

10' POLE WITH 100W HPS LUMINAIRES AND FULLY CUT OFF DISTRIBUTION WITHOUT SIDE LIGHT COMPONENT AND WITH BACK SHIELD

20' POLE WITH 150W HPS LUMINAIRES AND FULLY CUT OFF DISTRIBUTION WITHOUT SIDE LIGHT COMPONENT AND WITH BACK SHIELD. SQUARE DENOTES LUMINAIRES

EXISTING LIGHTING

NOTE:

WALL PACK LIGHTS ATTACHED TO CLASSROOM BUILDINGS WILL BE 100W HPS LUMINAIRES WITH FULLY CUT OFF DISTRIBUTION WITHOUT SIDE LIGHT COMPONENT AND WITH BACK SHIELD

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 13
Preliminary Lighting Plan
SUESD Opal Cliffs Public Works Plan

E M C

This side intentionally left blank.

General Plan Goals, Policies, and Programs

The following policies are found in the Land Use Element of the City of Capitola General Plan.

Land Use Goal 2. Ensure that all new construction or reconstruction is compatible with existing uses.

Land Use Goal 4. Ensure that elementary and middle school sites are accessible to children in all Capitola neighborhoods.

Policy 6. The City will work with the Soquel Elementary School District to ensure that there is always an elementary school within the Capitola city limits. Ideally, the school will be within walking distance for most of the children in the Capitola neighborhoods.

The general plan policies listed above are in response to land use compatibility concerns identified in the City's General Plan Land Use Element (pp 9-10). The District Plan includes policies and implementing actions that address consistency with Coastal Policies, City Plans and concerns relevant to the construction of school facilities on land formerly used as a park. The general plan land use compatibility concerns relevant to this Plan are as follows.

1. Managing traffic and noise in neighborhoods and the community as a whole;
2. Managing the integration of new use or intensification of existing uses within residential and commercial areas;
3. Adding more amenities between neighborhoods and the community such as additional pedestrian and bike pathways on arterial streets, open space and park areas, and neighborhood infrastructure improvements;
4. Retaining some community control over location of existing and future elementary and middle schools.

2.4 Discussion

The proposed Plan provides policy direction and implementation of the City of Capitola's existing land use designations and allowable uses for the District property, which remain unchanged. The Plan also includes provisions for the District's Elementary School Project, which would implement LCP and general plan policies related to the provision of adequate school facilities for students within the District. The Plan is intended to provide a balance of recreational and public uses on the site, which are compatible with each other and with adjacent uses in the neighborhood.

Goals, policies and implementing actions specific to the Plan have been developed by the District to be consistent with Coastal Act Policy 30253 subsections 1-4 and to conform to the City of Capitola Local Coastal Program. Plan policies related to the Coastal Act Policy 30253 subsections 1-4, are found in the appropriate sections of this Plan. Policies to mitigate potential conflicts between the school use and adjacent residences on Topaz Street are included in the Plan. The District Plan also incorporates design policies and implementing actions, as illustrated in Figures 10-13, to ensure compatibility with existing uses by limiting building placement and height, and providing landscape buffers and lighting standards.

2.5 Public Works Plan Land Use Policies

Goals, Policies, and Implementation

GOAL 1: Provide a balance of public park and recreational uses and public school uses on the site

Policy

LU-1 Implement the coastal land use and zoning designations on the site as they exist in the Capitola Coastal Land Use Plan, Coastal Zone Overlay and underlying Public Facilities zone district. The 5.13-acre eastern portion of the Plan area is designated on the City's Land Use Map as Community Facility – School (SC) and the 4.66-acre western portion of the site is designated Parks and Open Space (P). The basic underlying zoning for the entire site is "PF" Public Facilities District, with "CZ" Coastal Zone Combining District overlays of "P" for Parks and Open Space for the approximately 4.66-acre western portion of the site and "S" for School for the approximately 5.13-acre eastern portion of the site. These designations currently provide consistency for the new uses proposed by this plan.

LU-2 Add elementary school facilities and related improvements in two phases, at the discretion of the Soquel Union Elementary School District Board, as shown in Figures 7 and 8 of the Public Works Plan, while permitting the City, at least during the remainder of the original term of the expired lease, to continue to use the portions of the site not in use by the School District, including those portions of the site currently occupied by the community center, public restrooms, existing playground, baseball diamond, and tennis courts, to the extent consistent with the District's use of the site.

Implementation

LU-1.1 To the extent consistent with the District's use of the site, the District will permit the City, at least during the remainder of the original term of the expired lease, to continue to use the portions of the site not in use by the District, and implement, at the discretion of the Soquel Union Elementary School District Board, the proposed elementary school and related improvements on the eastern portion of the site as described herein. The District finds that this Public Works Plan implements the existing land use and zoning designations for the site as described in the Capitola Coastal Land Use Plan, the underlying PF Public Facilities District and CZ Coastal Zone Combining District.

LU-2.1 The District will allow the continued use of existing recreational facilities and activities on the entire site during the remainder of the original term of the expired lease, until such time that, at the discretion of the Soquel Union Elementary School District Board, the Phase One Elementary School improvements, as described in this plan, are commenced.

GOAL 2: Ensure that site development is compatible with adjoining uses surrounding the site

Policy

LU-3 Create buffer standards for the proposed school that provide a transition to immediately adjacent residential uses. Buildings placed near the perimeter of the site shall complement the mass and scale of the neighborhood.

Implementation

LU-3.1 The District will landscape a 20-foot buffer area between school buildings and the southern property line of residences along Topaz Street.

LU-3.2 The District will add a solid fence with a minimum six-foot height along the north property line of the site between school buildings and adjacent residences.

LU-3.3 Buildings will not exceed a single story nor a height of 20 feet within 40 feet of the southern property line of residences along Topaz Street.

LU-3.4 The District will orient school building entrances and other gathering points away from adjacent residences.

LU-3.5 The District will locate bells and public address speakers no less than 30 feet from residential property lines.

LU-3.6 Final landscaping and exterior lighting plans for each phase will be prepared by a licensed architect, and approved by the District Board prior to installation.

This side intentionally left blank.

3.0

CIRCULATION

3.1 Background

The information in this section is based upon the traffic report prepared by Higgins and Associates: Opal Cliffs School Traffic Impact Analysis (Higgins 2008) and subsequent correspondence responding to comments received (Hatch Mott MacDonald 2009). These documents are included as Appendix B of this Public Works Plan.

Community Setting

The City of Capitola is serviced by a system of local streets, arterials, and collector streets. The City of Capitola General Plan classifies roadways as follows: local streets provide access to property, collector streets also provide access to property but their primary function is to convey traffic between local streets and arterial routes. Arterial routes move traffic between different areas of the city and to regional routes. The City's Local Coastal Program designates Opal Cliffs Drive, south of the site as a scenic route. The City's acceptable Level of Service (LOS) is LOS C, for most of the City's circulation system, with an average wait time of about 25 seconds for delays. In general, many of the interior streets of the City operate at LOS C or better; however, congestion is common in many areas of the City during peak weekend and holiday travel times, especially along the coast, in the vicinity of the Village and on portions of 41st Avenue. Congestion also occurs during weekday peak hours along the arterial routes and Highway One to the east.

The Capitola General Plan proposes a pedestrian/bicycle trail along the Union Pacific Railroad right-of-way, should the tracks be abandoned and converted to a trail use in the future. For additional information on bicycle and pedestrian use of the adjacent railroad right-of-way, refer to the Parks and Recreation Section of the Plan.

The District maintains a small fleet of minivans and minibuses to provide special education transportation services for students within its attendance boundaries. In addition, the District refers parents to the Santa Cruz County Regional Transportation Commission carpool programs to encourage reductions in vehicle trips and actively communicates alternative route information via the District newsletter to reduce congestion on smaller streets near existing schools.

Neighborhood Setting

The neighborhood is developed in a standard grid pattern of local streets with curbs, gutters and sidewalks present in most areas. The neighborhood is accessible from 47th Avenue by way of Portola Drive to the south and Jade Street and Topaz Street by way of 45th Avenue to the north. Forty Fifth Avenue and 47th Avenue are the major access routes within the neighborhood and provide access between inland and coastal areas of the City. The two streets are categorized as collector routes by the City's general plan. Pedestrian access within the neighborhood and to the site is available from these streets and also by way of the Union Pacific Railroad right-of-way. Sidewalks are present along some of the major streets in the vicinity of the site, and a pedestrian path connects 47th Avenue and Jade Street within the park. Bikeways are present on Portola Drive/East Cliff Drive south of the Plan area, on 45th Avenue and 47th Avenue and Jade Street and 41st Avenue, west of the site. The site is also accessible from neighborhood streets; however, these streets are narrow with public parking on both sides, which would not likely be used for routine travel to and from the site (Hatch Mott MacDonald 2009). Higgins and Associates prepared a Traffic Impact Analysis (2008) to assess existing conditions, trip generation, circulation improvements on the site, pedestrian routes and parking impacts of the Opal Cliffs Elementary School Project. The report is included in Appendix B. According to the traffic report, all traffic intersections in the vicinity of the Jade Street Park operate at LOS C, with the exception of the intersection of 45th Avenue and Capitola Road, which experiences LOS D and E conditions during mid afternoon and evening peak hours. The general plan identifies Capitola Road as a major arterial roadway.

Existing Site Conditions

Access to the Plan area is available from Jade Street, 47th Street and by cyclists and pedestrians from the Union Pacific Railroad right-of-way. Public parking is available on public streets abutting the park. The site currently provides 26 off-street parking spaces in the central parking lot and 44 spaces in the north parking lot. The central lot is accessible from Jade Street and consists generally of a circular travel aisle that wraps around an "island" of parking spaces. Although not

formally marked, park users typically park their vehicles on the site in an unpaved area between the community center building and the community garden. The north parking lot straddles two parcels under separate ownership; 24 parking spaces are located on the District parcel and 20 spaces are located on a separate parcel owned by the Tradewinds Mobile Home Park.

Pedestrian sidewalks are present on the north side of Jade Street between 41st Avenue and 45th Avenue, on Jade Street near the community center parking lot, and on the west side of 45th street to Capitola Road. Walkways surfaced with decomposed granite border the eastern boundary of the park along 47th Avenue, and provide access to the interior of the site from 47th Avenue.

3.2 Proposed Circulation and Parking Improvements

Phase One

Phase One improvements are intended to include reconfiguration of the central parking lot to create on-site student drop-off and loading areas, sidewalks, pedestrian and bicycle access, school facility signage, landscaping, lighting, and ancillary amenities such as bike racks, pedestrian walkways and trash enclosures. The intended Phase One improvements would be undertaken at the discretion of the District Board, and as financial resources become available. The proposed parking and circulation improvements are presented in Figure 14, Phase One Circulation and Parking Improvements.

The number of required off-street parking spaces for school uses are determined by the California Department of Education (CDE), and are based upon the number of staff for educational facilities. The requirements and other site standards for school facilities can be found on the CDE website at http://www.cde.ca.gov/. Proposed Phase One improvements to the site include expanding the central parking lot from 26 existing stalls to 46 stalls, including two handicapped spaces and adding a one-way curbside pickup/drop-off zone, near the restroom building at the south end of the central parking lot. Head-in parking spaces are also provided on the north and east side of the central parking lot. Phase One improvements include signage and pedestrian crosswalks throughout the parking lot. As depicted in Figure 12, the proposed circulation pattern within the parking lot would be one-way directional travel around a central parking island.

Phase Two

The intended second phase of construction includes two additional classroom wings which would house a full kindergarten through fifth grade (K-5) elementary school. Phase Two improvements include removing the basketball court and several parking spaces from the central lot to accommodate the addition of a dedicated passenger loading lane/zone. The passenger loading zone would be separated from the central

parking lot by a landscaped island and the existing restroom building. The total number of parking spaces in the central parking lot would be reduced from 46 spaces to 44 spaces to accommodate the dedicated loading zone. Phase Two improvements are presented in Figure 15, Phase Two Circulation and Parking Improvements.

3.3 Existing Polices and Regulations

Local Coastal Program

The transportation and traffic policies listed in the Capitola LCP apply only to the Village area and roadways that are adjacent to the immediate coastline. The following general plan policies are relevant to the proposed public works plan.

General Plan Circulation Element Objectives and Policies

Policy 1. Level of Service C shall be the acceptable standard for circulation within the City with the exception of the Village area.

Objective. Maintain the livability of local and collector streets while preserving the safety of travel on them.

Policy 13. Discourage traffic on collector streets in excess of 5,000 vehicles per day and on local streets in excess of 1,000 vehicles per day.

Policy 26. Provide adequate transit facilities such as bus stops and transfer stations as a part of development.

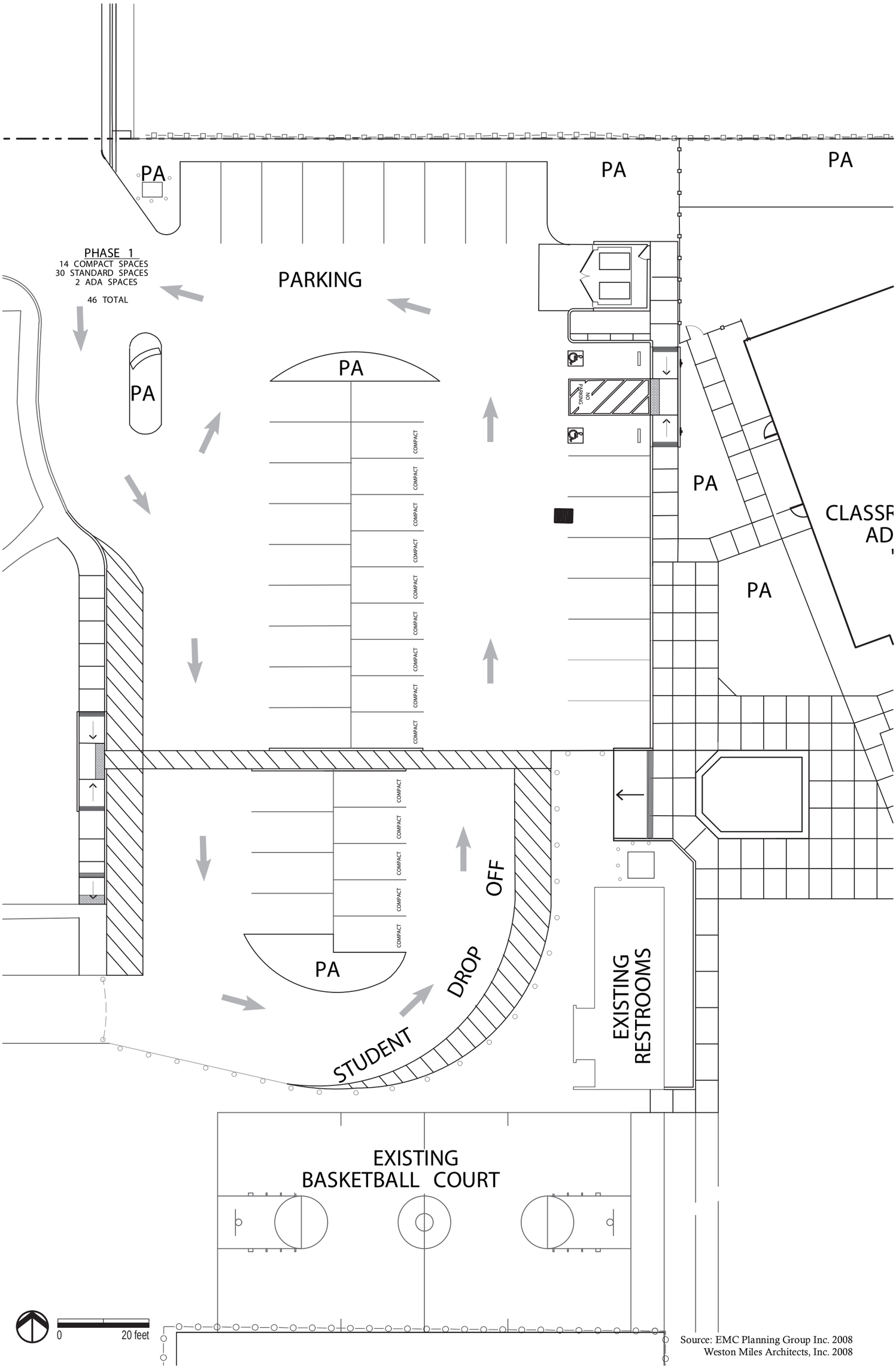
Policy 32. Require bicycle parking or storage facilities at new private and public developments where appropriate.

Policy 34. Bicycle facilities are not recommended on collector streets unless traffic volumes are close to the limits of collector street standards and/or bicycle traffic is estimated [to] be high or related to school or park access.

Policy 36. Where feasible and consistent with the Pedestrian Plan, pedestrian facilities should be provided along the frontage of new development.

Objective. Encourage the development of convenient parking facilities consistent with the anticipated demand.

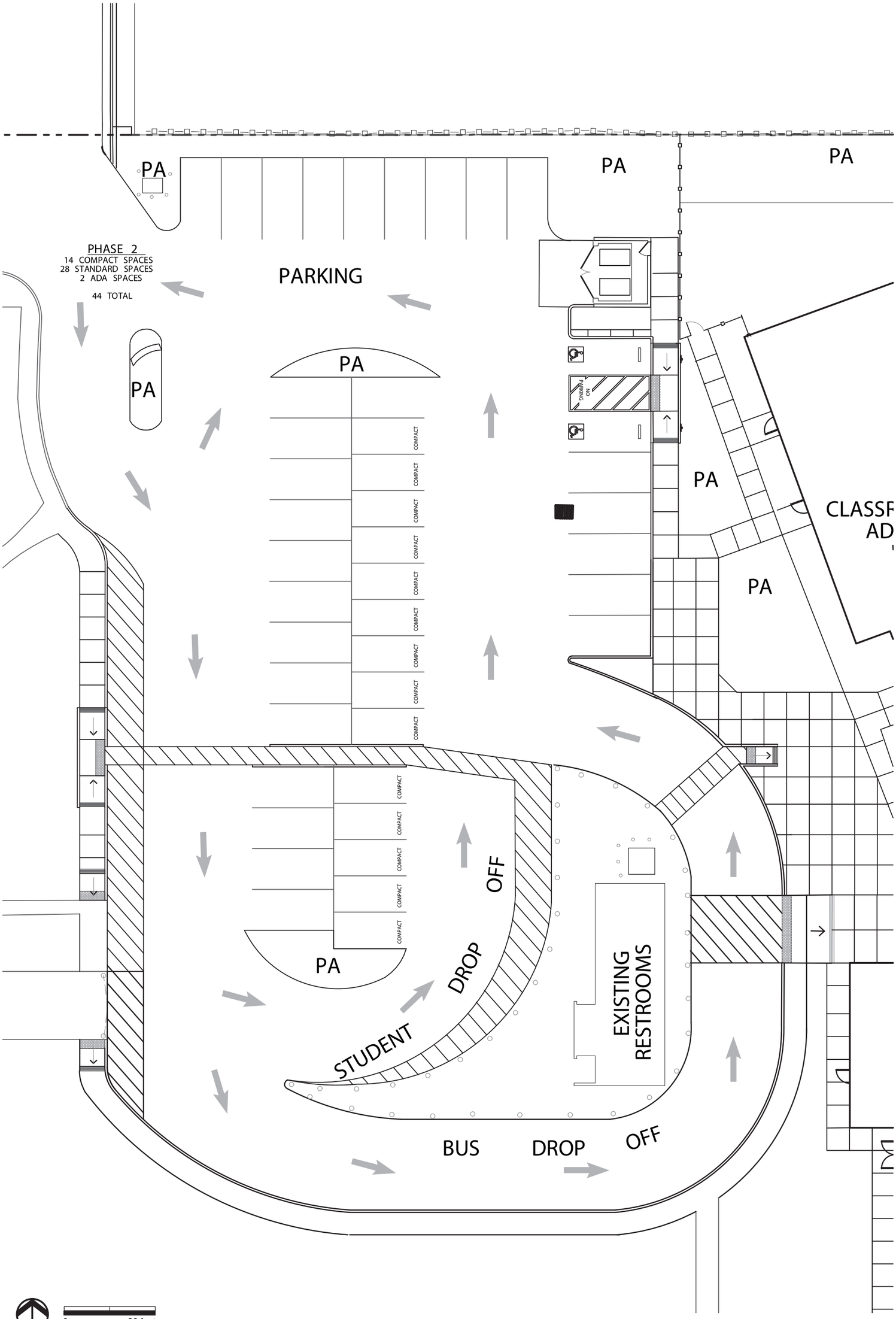
Policy 38. All new development in the City shall provide parking consistent with the requirements identified in the parking ordinance or in an estimate of parking demand, whichever is higher.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 14
Phase One Circulation & Parking Improvements
SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 15
Phase Two Circulation & Parking Improvements
SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

Policy 40. The use of parking design standards for compact vehicles should be encouraged to increase the available parking supply and to reduce the amount of non-porous surfacing devoted to parking areas, wherever possible.

3.4 Discussion

The proposed elementary school will generate an increase in traffic on nearby roadways and is anticipated to contribute to pedestrian and cyclist presence on streets in the immediate vicinity of the Plan area. The proposed school will also affect existing levels of parking availability on the site during school hours and after school events such as parent-teacher conferences or open-house activities. Despite these effects, the proposed elementary school will not generate a substantial increase in traffic levels in the immediate vicinity that cannot be remedied by feasible mitigation. The traffic policies and implementation actions are sufficient to offset the increase in traffic, meet the PWP goals of priority school uses with continued public use of the site, and avoid the need for alternatives such as further reducing or limiting traffic-generating non-school uses of the site. The following discussion of the Plan effects to area traffic is based on the traffic study prepared for the proposed elementary school (Higgins 2008) and subsequent correspondence (Hatch Mott MacDonald 2009).

Parking

According to the traffic report, implementation of both phases of the District's Elementary School Project would increase the availability of off-street parking on the site to accommodate school staff in addition to existing public parking on the site. Initially, the Phase One improvements would add 20 parking spaces to the central parking lot. Phase Two improvements, when implemented, would reduce the number of available parking spaces in the central lot from 46 to 44; however, the total capacity of the central lot would remain the same and greater than the existing number of spaces, because the dedicated passenger loading lane has a capacity for at least two vehicles to load and unload passengers. The provision of the dedicated drop off lane combined with District-wide policies that encourage carpooling and vehicle trip reduction would off-set the loss of two parking spaces with implementation of the Phase Two improvements. The availability of public parking on the north parking lot, adjacent parcel and area streets would remain unchanged.

Vehicle Access and Internal Circulation

The Plan includes provisions to increase parking and accommodate student loading/unloading zones on the site in conjunction with the construction of each phase of the new elementary school. The proposed circulation on the site includes a one-way traffic aisle that circles an interior parking island. To reduce the likelihood of internal conflicts between pedestrians and vehicles, the plan includes a designated parent drop-off zone at implementation of Phase One and at Phase Two, a dedicated loading/unloading lane

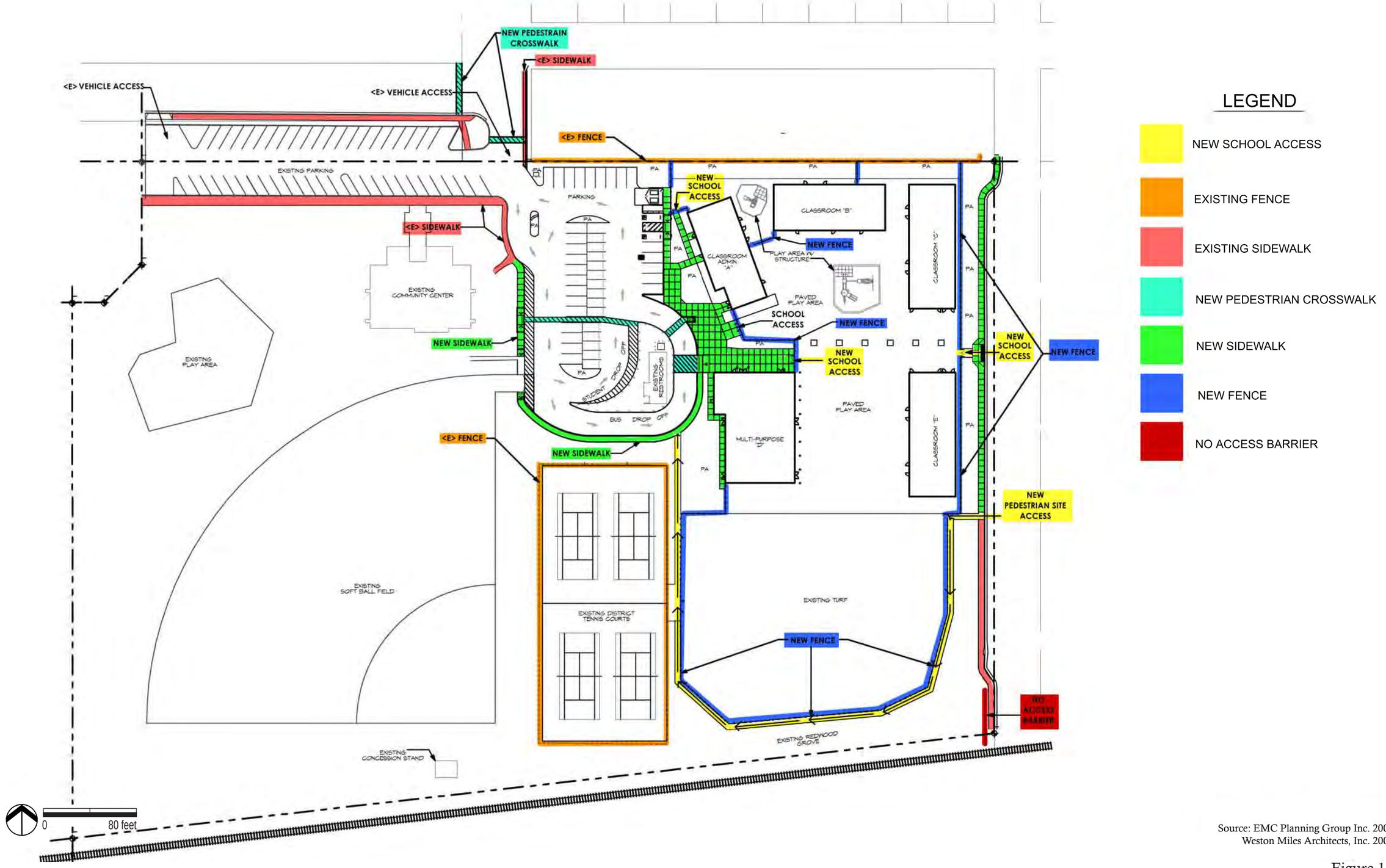
that would accommodate minivans and minibuses, in addition to passenger vehicles. As depicted in Figures 14 and 15, both improvement phases include wide traffic aisles, pedestrian crosswalks and other design features that eliminate and/or reduce potential internal circulation conflicts between pedestrians and vehicles.

Pedestrian and Non-Vehicle Access

The District will provide additional pedestrian facilities and crosswalks to the site and within the neighborhood. As illustrated in Figure 7, Phase One Site Plan (refer to Section 2), the walkway between 47th Street and the central parking lot and community center would be relocated with implementation of the Phase One improvements between the southern boundary of the preschool grounds and the soccer field. No other changes are proposed to existing sidewalks and the pathway along 47th Street during implementation of the Phase One improvements. Phase Two improvements include an extension of the sidewalk on the west side of 47th Avenue, to direct pedestrians around the school grounds to the interior of the site (refer to Figure 8, Section 2). The traffic report recommends that a School Route Plan Map be developed per the guidance contained in the Caltrans Traffic Manual to coordinate the design and placement of pedestrian facilities. The Phase One and Phase Two improvements would also include the provision of bike racks on the site. Existing and proposed access ways to the site are presented in Figure 16, Access Plan.

Railroad Grade Crossing

The existing railroad grade crossing at 47th Avenue north of Portola Drive is conventionally controlled by an automatic crossing gate. Implementation of one or both phases of the Opal Cliffs Elementary School project would increase vehicle, pedestrian and cyclist traffic near this crossing. The traffic report concludes that signalization of the crossing may be necessary to reduce the likelihood of unsafe queuing across the tracks by southbound vehicles, additional congestions on Portola Drive, and to minimize potential conflicts between queued vehicles, pedestrians and cyclists. Further, the report notes that the crossing is located within the proposed school 600-foot zone of influence and improvements to the pedestrian facilities at this crossing should also be considered. The Public Utilities Commission implements signal warrants at train crossings pursuant to Federal Highway Administrations Standards. The report notes that signalization of the intersection would allow vehicles to clear the intersection when a train approaches and recommends coordinating with the PUC and Union Pacific Railroad to determine appropriate intersection controls to reduce vehicle, pedestrian and cyclist conflicts if necessary.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 16
Access Plan

This side intentionally left blank.

Traffic Conditions

At buildout of Phase One, the project would generate 282 weekday vehicle trips with 67 during the AM peak hour, 48 during the mid after noon peak hour and 44 in the PM peak hour. At buildout of Phase Two, the project would generate 1,184 trips with 335 trips occurring during the weekday AM peak hour, 232 occurring in the mid-afternoon peak hour and 161 trips occurring in the PM peak hour. The vehicle trip generation includes trips in and out of the site; for example, during the morning peak hour, Phase One operations can be expected to generate 37 trips to the site and 30 from the site(page 11). The traffic report notes that each project phase would generate traffic that would contribute to the existing unacceptable LOS E and LOS F at the already congested intersection of 45th Avenue and Capitola Road during afternoon and evening peak hours. The traffic report analyzed signalization alternatives including partial and all way stop controls and dedicated right turn lane configurations. None of the alternatives would eliminate the intersection deficiencies, and cause the intersection to operate at an acceptable LOS. Impacts to this intersection would occur with or without the project. The traffic report recommends signalization of this intersection to relieve congestion and achieve LOS A during peak hours, and recommends that the District contribute their proportionate share of traffic impact fees toward this improvement.

The traffic report also studied the effect of project-related traffic generation within the context of buildout of the City of Capitola General Plan in 2015. To account for additional traffic added to the roadways from cumulative projects, existing peak hour volumes were adjusted using growth rates established by the Association of Monterey Bay Area Governments (AMBAG) forecasts and as presented in the city's general plan. According to the traffic report, all of the study intersections would operate at acceptable levels of service under the cumulative scenario with the exception, again of the intersection of 45th Avenue and Capitola Road. The report concludes that the signalization discussed earlier for this intersection would mitigate the intersection to acceptable leves of service.

The 45th Avenue and Capitola Road intersection already operates at an unacceptable LOS and the District Plan or elementary school project would not be entirely responsible for providing corrective improvements to the intersection. The Plan includes policy provisions requiring the payment of fair share traffic impact fees to the City to offset the District's contribution to unacceptable levels of traffic from each phase of improvements.

In a letter dated March 25, 2009, the traffic engineer states that the route to and from the site along Topaz Street to 49th Avenue is not conducive for a large traffic increase due to existing physical constraints to higher speeds such as narrow roadways and public parking availability on both sides of neighborhood streets. The engineer estimates that only about four percent of project-related traffic would utilize 49th Street and two percent; the Topaz Street segment. Refer to the March 25, 2009, Hatch Mott MacDonald letter for additional information. The letter is included in Appendix B.

Neighborhood Quality of Life

The traffic report also evaluated the effects of project-related traffic to the existing quality of life within the neighborhood, using the Traffic Infusion on Residential Environment (TIRE) index. The study incorporates a number of factors including traffic volumes and types, speed, perception of through traffic as a percentage of total traffic, accident experiences, residential building setbacks, parking availability, pavement conditions, pedestrians and cyclists. According to the report, the TIRE method is based upon the theory that a given increase in traffic volume has the greatest impact on residential streets with low traffic volumes, rather than on a street with a high pre-existing traffic volume. The report concluded that all streets within the study area currently operate at relatively high traffic volumes and the introduction of the Phase One school improvements on the site is not likely to substantially affect the perception of traffic in the neighborhood.

After further analysis, the TIRE analysis found that an increase in traffic due to Phase Two operations on Topaz Street between 45th Avenue and 47th Avenue could be noticeable to residents on this street segment during peak hours. According to the traffic engineer approximately two percent of project-related traffic is expected to use this street (Hatch Mott MacDonald 2009). Additionally, the increase in traffic would be most noticeable during peak hours when school is in session. Nevertheless, the engineer has identified specific improvements which would adequately address the increase in project-related traffic in the Jewel Box neighborhood, specifically the installation of a speed bump on Topaz Street between 47th Avenue and 49th Avenue, prior to occupancy of the Phase Two improvements. Implementing Action C-6.1 reflects the recommendation.

The District Plan maintains many of the existing uses and recreational amenities on the site while implementing priority school uses on the ste. Constructed in phases, the school use on the site would gradually increase vehicle trips from existing levels. Current District policy includes "good neighbor" measures to reduce congestion in neighborhoods adjacent to school uses and these existing policies are incorporated into the Plan policies C-5.1 and C-5.2 for the District's Elementary School operations on the site. These policies would be implemented immediately upon completion of the Phase One improvements. Additionally, policy C-6.2 identifies District responsibility to fund the recommended improvement to Topaz Street, prior to the completion of the Phase Two school facility improvements. Implementation of these policies meet the PWP goals of priority school uses, with continued public use of non-school uses on the site, and avoid the need for alternatives such as further reducing or limiting traffic-generating non-school uses of the site.

3.5 Public Works Plan Circulation and Parking Goals and Policies

GOAL 1: Provide safe and adequate off-street parking, vehicle access and internal circulation, and pedestrian access

Policy

C-1 Provide safe and adequate vehicle access, internal circulation, and parking for existing and proposed uses.

C-2 Provide adequate passenger loading and unloading zones for Special Education transportation vehicles.

C-3 Maintain pedestrian and bicycle access across the site that is equal to or greater than current levels.

Implementation

C-1.1 The District will maintain adequate parking on the site pursuant to Department of Education requirements.

C-1.2 During the implementation of the Phase One improvements, the District will reconfigure and resurface the central parking lot to accommodate one lane of directional traffic, a minimum of 46 parking spaces for staff and visitors, including handicapped spaces, a minimum 24-foot backing distance for parking spaces, and a passenger loading area for parents and caregivers bringing or picking up students.

C-1.3 The District will provide marked crosswalks and signage in the central parking lot as illustrated in Figures 7 and 8 of the Plan.

C-2.1 Passenger loading areas shall be designed and placed according to applicable standards, including adequate separation between parking and loading areas, and in locations that avoid or minimize pedestrian travel in vehicle circulation aisles.

C-2.2 During implementation of the Phase Two improvements, the District shall design and construct a dedicated loading zone for parents and Special Education Transportation Services vehicles as identified in this Plan.

C-3.1 The District will maintain a continuous pedestrian pathway adjacent to 47th Avenue between the north and south property lines of the District property.

C-3.2 At implementation of Phase Two, the District will promote walking buddy and walking school bus programs.

C-3.3 The District will prepare a School Route Plan Map per the guidance contained in the CalTrans Traffic Manual to coordinate the design and placement of pedestrian facilities on area streets.

GOAL 2: Minimize project-related traffic congestion on neighborhood residential streets

Policy

C-4 Encourage alternatives to automobiles.

C-5 To the extent feasible, discourage traffic on the smaller east-west residential streets.

C-6 Determine the District's fair share toward payment of Traffic Impact Fees to offset project contributions to existing unacceptable levels of traffic.

Implementation

C-4.1 The District will provide bicycle parking on the school grounds, consistent with the Division of the State Architect Standards for the design of school facilities.

C-4.2 The District will refer parents to the County Transportation Commission carpool programs.

C-5.1 The District will provide ongoing communications directing parents to safe alternative routes to reduce congestion.

C-5.2 The District shall work with the City to coordinate school and community center scheduling to avoid heightening traffic peaks at the beginning and end of the school day.

C-6.1 The District will be responsible for the payment of fair share traffic impact fees for signalization of the intersection 45th Avenue and Capitola Road, to mitigate the District's impact on the intersection by Phase, prior to completion of construction of each Phase.

C-6.2 The District will be responsible for funding the construction of a speed bump on the Topaz Street segment located between 45th Avenue and 47th Avenue, to mitigate the Phase Two increase in traffic. The funding shall be provided by the District prior to occupancy of the Phase Two improvements.

GOAL 3: Safe Railroad Crossing

Policy

C-7 Support safety improvements to the 47th Avenue railroad crossing.

Implementation

C-7.1 The District will work with other agencies, as appropriate, including the Public Utilities Commission, Caltrans, and the Santa Cruz County Transportation Commission to coordinate the design of appropriate traffic and pedestrian controls at the 47th Avenue railroad crossing.

C-7.2 The District will actively communicate potential hazards associated with railroad crossings to parents and students.

C-7.3 The District will work with Caltrans and other agencies, as appropriate, to apply for Safe Routes to School funding to remedy impediments to walking and bicycling within the Opal Cliffs site attendance boundaries.

This side intentionally left blank.

4.0

PARKS AND RECREATION, VISUAL RESOURCES, PUBLIC ACCESS, NATURAL RESOURCES

4.1 Parks and Recreation

Background

Priority uses, as defined by the Coastal Act, include recreation, visitor-serving, and coastal dependent uses. In the City of Capitola, coastal-dependent uses that provide recreational and visitor-serving opportunities are located in areas adjacent to the shoreline, most notably, the Village, the Beach, the Wharf, and New Brighton State Beach. Additional recreational opportunities are located in upland areas, and provide an important support function of the City's coastal open-space areas and natural resources. The District property is currently occupied by a park, and is located in an upland area, northwest of the Village, approximately 800 feet from the coastline. The park is not defined in the City's LCP as a coastal-dependent or visitor-serving use. Located inland from the more heavily frequented beach areas, and as the location for the City's Community Center, Recreation Department, and Community Garden, the District property and its recreational amenities are most attractive to local residents. Insert view of playground with Community center in background

The District property is identified as a Community Park in the City's general plan. Recreational amenities on the site include softball and baseball, tennis, and youth soccer programs. The New Brighton Middle School Vikings soccer team utilizes the soccer field at the park as its home field. The City of Capitola Recreation Department operates its programs from the community center, including recreational programs for all ages. The community garden consists of individual plots made available to the public for a small fee. The Capitola-Soquel Community Activities Agency, which operates a range of senior classes and activities at various locations throughout the City of Capitola, also provides senior programs at the District property and coordinates with Meals On Wheels to provide dining services at the Community Center during the week. The community center is available for group rentals such as meetings and gatherings.

Coastal Act Policies

Policy 30212.5. Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Policy 30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

Local Coastal Program and General Plan Policies

The City's LCP Parks and Recreation policies focus on coastal-dependent and visitor-serving coastal resource areas and are silent with respect to parks that are located in the inland areas of the coastal zone. The City's General Plan, Chapter 5, Open Space, Parks and Recreation, goals and policies related to the District Plan are as follows:

GOAL 4. [To] make full use of school sites as school-parks.

Policy 17. Multiple use of public and quasi-public facilities for park and open space purposes should be made whenever possible.

Policy 19. Joint Power Agreements for the provision of park and recreational activities, such as the Capitola-Soquel Community Activities, shall be encouraged whenever feasible.

Discussion

The District property provides recreational and open space opportunities within a residential neighborhood. Under the Plan, the District will permit the City, at least during the remainder of the original term of the expired lease, to continue to use the portions of the site not in use by the School District, including those portions of the site currently occupied by the community center, existing playground, baseball diamond, and tennis courts. The existing uses on the eastern portion of the site would remain available for public use until the District commences with the proposed elementary school improvements. The City is considering suitable locations to relocate the community garden off the District property.

With implementation of the Elementary School Project Phase One improvements, the soccer field, tennis courts, basketball court and restrooms would remain available for public use on the eastern portion of the site as discussed above. Removal/relocation of the soccer field and basketball court would not be necessary until the second phase of the project, when the pre-school and K-1 classrooms would be expanded to accommodate additional elementary school classrooms and a multi-purpose room. The baseball/softball field on the western portion of the site could potentially be converted to a dual-use field to accommodate

soccer and baseball leagues; however, the District currently allows public use of other school grounds within the City, and the soccer league could also make use of these. The basketball court would be removed to accommodate additional parking on the site and passenger loading areas. The existing public restrooms would remain available to the public throughout Phase One.

The Plan includes provisions and policies that promote the continued use of the site District property as a school/park to serve local residents at least during the original term of the expired lease and increases the parking on the site to accommodate these uses. The Plan is consistent with Coastal Act Sections 30212.5 and 30223, as during that period the existing amenities of the overall site would remain substantially unchanged and available to the public, and the supporting function of recreational opportunities of the site with other coastal recreational and open-space areas would remain unchanged.

The Plan conforms to the basic underlying zoning PF Public Facilities District, the CZ Coastal Zone Combining District "P" and "S" overlays implementing the LCP, and the General Plan designations included in the LCP Land Use Plan Map where they are consistent with the Coastal Act of 1976. The City's General Plan Chapter 5, Open Space, Parks and Recreation, identifies open space areas as one of the City's most important resources, for example, Chapter 5, Goal 4 calls for the "full use of school sites as school-parks". The Plan creates a school use on the site, consistent with the PF-S designation, and reorganizes and maintains recreational amenities on the site, consistent with the PF-P designation.

The Plan includes the following policies and implementation actions that promote the continued use of much of the site as a park with recreational uses and community programs, while creating a new school on the site, consistent with Coastal Act policies and the City's LCP and General Plan designations included in the LCP Land Use Plan Map.

Public Works Plan Parks and Recreation Policies

GOAL 1: Provide a mix of park, recreational, and educational uses within the school/park site

Policy

PR-1 Continue to allow compatible existing park facilities on the site, as outlined in the Plan or as relocated on the site and determined to be feasible to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.

PR-2 Continue to allow compatible shared use of park and school facilities to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.

Implementation

PR-1.1 The District will cooperate with the City and other agencies, as appropriate and feasible, to continue to allow existing open space, recreational uses and community programs on the western portion of the site to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.

PR1.2 At implementation of Phase One, the existing soccer field, tennis courts, basketball court and public restrooms will remain available for public use to the extent consistent with the District's use of the site at least during the remainder of original term of the expired lease.

PR-1.3 At implementation of Phase Two, the District will relocate the soccer field to an alternate suitable location either on the western portion of the site or will make other District playfields available for that use at least during the remainder of original term of the expired lease.

PR-2.1 To the extent deemed feasible for the District, the District will coordinate with the City shared public use of the school playgrounds and field after school hours and when school is not in session, at least during the remainder of the term of the expired lease.

4.2 Visual Resources/Public Access

Background

Public access is generally addressed in two broad categories: active access and passive access. Active access is associated with the physical ability to enter on to a public area and experience its physical amenities; whereas passive access is associated with the perception experienced by exposure to an overall setting or environment. For example, active access may be a formal or informal route such as a stairway, path or sidewalk that is part of or leads to a physical place, in this instance, the Capitola Wharf, Village, bluffs, beach or other public park within the coastal zone. Active access is addressed by the Coastal Act in Sections 30210 and 30252. Coastal Act Section 30251 addresses passive access by identifying visual and scenic qualities of coastal areas as resources of public importance.

Visual Resources

The Coastal Act calls for the provision of maximum access to open space areas and policies in the City's LCP and general plan focus on the preservation of open space areas as public resources and require maintenance of access to them. The most easily recognizable and familiar visual resources in the City of Capitola are its beach and bluff areas. The District property is used as a public community park inland from the City's coastal open space areas. Located within an established urban environment adjacent to the Union Pacific Railroad tracks, the park also contributes to the City's network of formal and informal bicycle and pedestrian routes, and is geographically linked to the City's more recognizable open space resources along the coastline. Existing and planned access routes to coastal areas in the immediate vicinity of the site per the City's LCP include the Union Pacific Railroad right-or-way and neighborhood streets. The bay and coastline are not visible from the District property due to intervening development.

The most prominent character-defining visual features of the District property are its tree-lined playing fields which provide a feeling of open space within the developed neighborhood; however, with its developed ball fields, tennis courts, play areas and the Community Center, the resource value of the park is one of active recreational uses, rather than passive open space. With few buildings on the site the park amenities may contribute to a perception of openness; however, this perception is most likely experienced by residents in the neighborhood, while users of the District property would experience the active recreational value of the public amenities. Due to its location inland from the shoreline, the recreational value of the property is expected to be less familiar to visitors traveling to or along the more popular coastal areas of the City.

The visual quality of the District property is as an urban park with grass expanses and tree-lined playing fields. Development of the project site and future maintenance activities would include landscaping and the periodic replacement of existing ornamental species, including trees as they reach the end of their natural lifespan. The resource value of the site is based primarily upon the use of the site by local residents for park and organized recreational activities, and, correspondingly the Plan policies for visual resources are focused on maintaining the traditional scale and character of the neighborhood and allowing continued use of the park facilities. As presented in Section 2.0, Land Use, and as illustrated on the site plans (Figures 7 and 8) and landscaping and lighting plans (Figures 11-13), the District Plan includes policies and design features to ensure neighborhood compatibility.

Public Access

The District property is accessible from Jade Street to the north and from 47th Street to the east. Defined pedestrian access ways are present between the community center and 47th Street and southward along the periphery of the site, adjacent to 47th Street. Unrestricted pedestrian access to the site is currently

available from all neighborhood streets and the Union Pacific Railroad right-of-way. The property does not provide direct access to beaches or coastal areas; however, the District property also contributes to the City's network of coastal resource open space areas because of its location in proximity to established and planned public access routes to and along the coast.

According to the City's General Plan, the rail right-of-way is often used by pedestrians and cyclists to travel from one side of Capitola to the other, and the eventual conversion of the tracks to a pedestrian trail is contemplated in the City's General Plan and LCP Policies. However, Union Pacific Railroad announced in January 2008 that it would begin prosecuting persons walking on the railroad right-of-way (Mid County Post 2008). Shortly thereafter, the Santa Cruz County Regional Transportation Commission (SCCRTC) negotiated the purchase of the rail line in August 2008. The SCCRTC plans to establish commute and/or recreational passenger service, as well as a parallel multipurpose trail along portions of the rail right-of-way where adequate width exists (SCCRTC 2007). The SCCRTC has not formally determined which sections of the railroad right-of-way are suitable for both the rail operations and a trail.

Proposed Improvements

The Plan includes increased setbacks, height limits and landscaping features that promote neighborhood compatibility and the minimization of impacts to residences adjacent to the proposed school buildings and playground. These features are included in the discussion and policy provisions found in Section 2.0, Land Use, and graphically presented in the Preliminary Landscape Plans, Figures 11 and 12, for both Phases. In addition to the Plan policies discussed in Section 2.0, the Plan includes limits on the locations of new and replacement tree plantings to avoid encroaching into views of coastal areas.

As depicted in Figure 16, Access Plan (Refer to Section 3.0), the District Plan includes access improvements on the site that would reconfigure existing pedestrian walkways, preserve future access opportunities to the Union Pacific Railroad right-of-way from the western portion of the site and expand the central parking lot - all of which will enhance public access to recreational and other community-based programs on the site, and maintain pedestrian and cyclist linkages with the City's existing and planned network of open space resources.

The Plan includes expansion of the central parking lot to accommodate the school use and existing parking availability. Off-street parking availability for all uses will be increased by this improvement. The Plan includes the provision of pedestrian sidewalks and passenger loading areas on the site as depicted on the Phase One and Phase Two Circulation and Parking plans (Figures 14 and 15). The Plan also includes policies that encourage the preservation

of existing opportunities for future access from the railroad tracks and connection to a trail, if one should be installed on the railroad track right-of-way. Existing vehicle access to the District property from Jade Street would be maintained and the Plan includes provisions at each phase of the school project to reconfigure the pedestrian path from 47th Street to the community center (refer to Figure 16, Access Plan, Section 3.0).

Existing Policies and Regulations

Coastal Act Policies

Policy 30210. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Policy 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Policy 30252. The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.

Local Coastal Program and General Plan Policies - Open Space Parks and Recreation

City of Capitola LCP policies relevant to public access and the open-space and visual character of the Soquel Union Elementary School District Opal Cliffs Public Works Plan consist of the following:

Policy 16. Permitted development shall not block or detract from public view to and along Capitola's shoreline.

Policy 33. Maintain a commitment to all existing access walkways and paths to Capitola Beach.

General plan goals, policies and programs relevant to public access and the open-space and visual character of the Soquel Union Elementary School District Opal Cliffs site consist of the following:

GOAL 6. To provide a comprehensive open space system that would geographically serve and link the entire community.

Policy 27. The cycling and pedestrian path system is intended to make joint use of major open space features, the railroad right of way and portions of the road system to achieve the following objectives:

To provide a safe attractive and separate path system for cyclists and pedestrians to travel within neighborhoods, from one part of Capitola to another, and between Capitola and adjoining communities,

To provide alternative means of access to schools, local parks, shopping centers, the Village Center, the waterfront area, and New Brighton State Park.

Policy 28. The City shall develop and maintain a path system from the western city limits to the eastern city limits, following the coastline whenever possible.

Policy 29. The right of way along the Southern [Union] Pacific Railroad tracks shall be utilized to the fullest extent possible for access across the City.

Discussion

The site is not located in an area of the coastal zone identified as highly scenic by the City's LCP. The site is located inland of the shoreline and public views of the coast and Monterey Bay are not present from the site or the immediate vicinity; the nearest public views of the coast are located along East Cliff Drive, about 450 feet southeast of the site. Due to its location outside of the City's immediate coastal resource areas, improvements to the District property would not block or detract from public view to and along Capitola's shoreline. Nevertheless, the Plan includes provisions to avoid planting large trees between school buildings and existing residences to the north to preserve, to the extent feasible, existing views from those residences.

As discussed in Section 2.0, Land Use, Plan policies include provisions for increased setbacks, height limits and landscaping to mitigate the visual effects of replacing less intensive uses (community garden) with classroom buildings and playground areas near adjacent residential uses. Additionally, three ornamental trees on the site are proposed for removal to accommodate construction of both phases of the Elementary School Project, and the Plan policies include tree replacement provisions to minimize affects to the visual character of the site. Plan requirements relative to tree removal are found in the discussion of biological resources in Section 4.3, Biological Resources. Plan requirements for the locations of replacement or new tree plantings are included in the provisions below.

Plan policies related to public access are focused on maintaining the public park and recreational value of the site, maintaining access routes to park amenities, and creating new public educational additional uses on the site that serve local residents. As discussed in Section 2.0, Land Use, the Plan allows the continued use of existing recreational uses on the western portion of the site, with the cooperation of the District, while improving the eastern portion with school uses, consistent with the City's basic underlying zoning district and overlying CZ Coastal Zone Combining District implementing the LCP and General Plan land use designations and allowable uses carried forward into the LCP Land Use Plan. The proposed school uses will be implemented in phases, at the discretion of the District Board, and the Plan includes provisions for the continued access to the property and use of much of the site for recreational activities and other non-school uses during each phase, and after the school is built, as well.

Public Works Plan Policies – Visual Resources and Public Access

GOAL 1: Maintain opportunities for public recreational area linkages with the City's existing and anticipated trail system

Policy

PA-1 Provide public access to the site as illustrated on the Access Plan.

PA-2 Preserve pedestrian access opportunities for future trail connections to and from the Union Pacific Railroad right-of-way where determined to be feasible and safe by the District.

Implementation

PA-1.1 The District will implement public access as illustrated on the Access Plans for each phase in a manner that does not compromise student safety.

PA-2.1 The District will cooperate with the Santa Cruz County Regional Transportation Commission and the City of Capitola to preserve public access opportunities related to the potential conversion of the Union Pacific Railroad right-of-way to a public trail.

GOAL 2: Minimize Visual Impacts to Private Residences

Policy

PA-3 Minimize impacts to any private views of the coast from the residences on Topaz Street, adjoining the north property line of the site.

Implementation

PA-3.1 The District will restrict and maintain all plant materials within the landscaped area located between school buildings and adjacent residences on Topaz Street, to the maximum height of 20 feet, commensurate with the height of school buildings within 40 feet of the north property line of the site.

4.3 Natural Resources

Background

Geology and Hydrology

A geologic and seismic hazards evaluation has been prepared for the proposed pre-school (Phase One) prepared by Pacific Geotechnical Engineering (October 15, 2007), and is included in the District Plan as Appendix C. According to the evaluation, the site is located on a coastal marine terrace at approximately 69 feet above mean sea level. The topography of this terrace slopes gradually southward toward coastal bluffs in the Opal Cliffs area of the City. The Plan area is relatively flat with a change in relief of about five feet, and drainage on the site and in the immediate vicinity of the District property flows generally northeast to Soquel Creek.

According to Steve Jesberg, Public Works Director for the City of Capitola, and Gerardo Vargas with the County of Santa Cruz Public Works Department, storm water in this area of the City is collected in gutters and storm drains and conveyed in underground pipes which discharge into the Monterey Bay at the Opal Cliff Drive outfall. The County and City coordinate implementation of the joint *Santa Cruz County/City of Capitola 2003 Storm Water Management Plan* (SWMP). The SWMP requires the use of Best Management Practices to control the introduction of sediments and urban pollutants into the watershed and ultimately to the Monterey Bay. The site is currently improved with two parking lots, a community garden, paved tennis courts, turf ball fields. No bodies of water or wetlands are present on the site.

Implementation of Plan policies would increase the amount of impervious surfaces on the site and has the potential to increase storm water flows from the site. The plan includes policies and provisions to contain and infiltrate storm drainage through site contouring and the use of bioswales, and to provide pretreatment if necessary prior to discharge into the municipal storm drain system. All drainage improvements on the site would be subject to compliance with the SWMP. For proposed drainage improvements, refer to Section 6.0, Infrastructure.

Biological Resources

The Coastal Act defines an environmentally sensitive habitat area (ESHA) as any area in which plant or animal life or their habitat are either rare or biologically valuable because of their role in an ecosystem, and which could easily be disturbed by human activity and development. Significant natural resource areas present within the City of Capitola are identified in the City's 1989 LCP/General Plan, and consist of the Monterey Bay and beach areas, Soquel Creek and Lagoon, Rodeo Gulch, Soquel Creek Riparian Corridor, Noble Gulch Riparian Corridor, Tannery Creek Riparian Corridor, and the Soquel Creek/ Escalona Gulch Monarch Butterfly Grove. The site is not located in designated ESHA. Due to its location between the Soquel Creek drainage to the east, and the Rodeo Creek drainage to the west, existing and future development on the site has the potential to affect the water quality of these two resource areas and the habitat they support.

Despite its location outside of identified significant resource areas, a biological survey of the District property was conducted by WRA Environmental Consultants on December 31, 2007, to provide current conditions on the site. The results of the survey are presented in the biological resources assessment report which is included in the Plan as Appendix D. Observations made during the 2007 biological survey confirm that the site does not contain nor is it located in or near environmentally sensitive habitat areas or sensitive biological communities. The 2007 WRA biological resources report evaluated the habitat value of the site referencing the Santa Cruz County LCP. Janet Ilse, biologist with EMC Planning Group Inc. reviewed the report, conducted a site visit, and confirmed that the findings of the report do not conflict with the City of Capitola LCP.

No aquatic features are located on the site. The relatively flat site is landscaped with turf and ornamental shrub and tree species, and a community garden. Vegetation at the southern boundary of the site near the Union Pacific Railroad line is reverting to a semi-ruderal state with weedy species. Wildlife species observed during the site visit were noted as those commonly found in urban or developed areas. Although 39 special status species are known to occur in the vicinity of the project area, no wildlife species of special concern were observed during the site visit. No special status plant species were observed on the site. The report concluded that the District property has low potential for providing suitable habitat for special status plant and animal species at present and in the future, and recommends that no future surveys or studies be required on the site.

Several coast redwood (*Sequoia sempervirens*) and liquidambar (*Liquidambar styraciflua*) trees are located on the site. The report concludes that while the redwood trees are an appropriate species for the coastal location, they are not native to the site and were most likely nursery-grown for ornamental landscaping uses. The report also notes that modifications to trees and their canopy in the City of Capitola are typically subject to compliance with the provisions of the City's tree ordinance (Capitola Municipal Code Section 12.12.10). The City's tree ordinance provides for the

protection and enhancement of any tree that is greater than six inches in diameter at a distance of 48 inches above the ground. The trees on the site have habitat value for a variety of nesting/breeding birds, protected under the Migratory Bird Treaty Act, which prohibits the disturbance of breeding birds and their eggs or chicks. An abandoned nest was observed during the site survey, and the report includes recommendations to protect nesting birds and their offspring from disruption during site preparation and construction activities on the District property.

Air Quality

The City of Capitola is located within the Monterey Bay Unified Air Pollution Control District (MBUAPCD), and is subject to the regulations contained in the 2008 Air Quality Management Plan (AQMP). Consistency with the AQMP is determined by the effect of population increases resulting from new development. The Plan does not include residential uses and is consistent with the AQMP. The City's general plan seeks to control development that would "(1) singly or cumulatively cause violation of any State or Federal ambient air quality standard; and/or generate a significant amount of air pollution unaccounted for in the AQMP" (page 44). In addition to the City's general plan policies, construction-related dust and diesel emissions are regulated by the MBUAPCD, and construction of the school facilities on the site would be subject to the standard mitigation and/or conditions of approval required by the MBUAPCD. On May 6, 2009, the District Governing Board adopted a finding of no hazardous air emitting facilities within one quarter-mile of the proposed Opal Cliffs school site.

The District intends to utilize energy conserving appliances and low emission materials, including photovoltaics to offset to the extent feasible, the carbon footprint of the school facility. A greenhouse gas emissions inventory has been prepared to estimate the carbon footprint of the Phase One and Phase Two improvements and to evaluate the extent of energy conserving and emissions reducing improvements which can be feasibly be achieved by the District. The Greenhouse Gas (GHG) Report is included as Appendix L. Additional discussion and PWP policy actions are found in Section 6, Public Services.

Existing Policies and Regulations

Coastal Act Policies

> **Policy 30231.** The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Policy 30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Coastal Act Section 30253 lists the basic requirements for new development in the California coastal zone. Subsection 30253(3) includes additional requirements related to the discussion of air quality as a natural resource.

Policy 30253 (3). New development shall [be] consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

Local Coastal Program and General Plan Policies

The City of Capitola LCP Policies relevant to the Soquel Union Elementary School District Opal Cliffs Public Works Plan are as follows:

Conservation

Policy 8. It shall be the policy of the City of Capitola to require the planting of trees in new development and to protect existing trees by allowing removal only in accordance with the City's Tree Ordinance. The City should encourage new developments to be designed to preserve significant vegetation.

Policy 9. It shall be the policy of the City of Capitola to take measures within its purview to preserve and improve the quality of the waters of Monterey Bay, and to support Marine Habitats, public recreation, and commercial pursuits consistent with sound resource management principles.

Policy 12. Parking lots and storm drains, and storm water runoff culverts shall be improved by installing energy dissipators and sand traps or other types of grease/sediment traps in conjunction with new development or intensification of use.

Policy 13. The City shall, as a condition of new development, ensure that run-off does not significantly impact the water quality of Capitola's creeks and wetlands through increased sedimentation, biochemical degradation or thermal pollution.

The City's LCP policies are incorporated into the General Plan Conservation Element and, in addition to the LCP policies listed above for natural resources, the general plan includes the following policy related to the discussion of air quality.

Policy 7. The City of Capitola will work to assure attainment of both Federal and State ambient air quality standards as identified in the 1989 Air Quality Management Plan.

Discussion

The biological survey, and subsequent review by EMC Planning Group Inc. biologist Janet Ilse, concluded that ESHA, potential ESHA, wetlands or other biologically sensitive aquatic features are not present on the site; therefore, the Plan does not include policies for their protection. However, the site is located upland from sensitive coastal and marine aquatic resource areas within which water quality has the potential to affect the productivity of aquatic organisms and human health. Implementation of each phase of the District's Elementary School Project would increase the amount of impervious surfaces on the site which would increase the amount of storm water runoff capable of affecting down stream areas. Drainage from the central parking lot and soccer field already drain to existing catch basins. The catch basins in the central parking lot will be replaced. The catch basins for the soccer field are located at the southern end of the property near the railroad tracks, and would remain unaffected by either Phase One or Phase Two improvements. Drainage improvements are intended to limit post-development runoff to pre-project levels. Also, construction activities associated with the school facility improvements have the potential to affect water quality in these sensitive downstream areas.

The Plan includes policies and implementing actions in conformance with the City and County standard mitigations and conditions of approval that would substantially lessen or avoid potential impacts to water quality from construction-related activities and increases in impervious surfaces on the site resulting from both construction phases of the proposed elementary school and consistent with this plan. Additionally, turf fields and landscaped areas will be maintained consistent with existing District practices, which include limited application of chemicals.

The removal of three trees is necessary to accommodate the construction of Phase One and Phase Two improvements on the site. The removal of additional trees may be necessary in the future to remove dead or diseased trees that pose hazards to the users of the school grounds and park. Development of the project site and future maintenance activities would include landscaping and the periodic replacement of existing ornamental species as they reach the end of their natural lifespan. The Plan includes provisions consistent with the City's LCP and tree ordinance that would protect the tree canopy, and provide for replacement plantings of trees greater than six inches in diameter at 48 inches above the ground, that are removed or damaged as a result of the proposed elementary school improvements or future activities on the site.

The construction of the school project may also affect nesting birds either in trees proposed for removal or in proximity to construction zones. Disturbances that would cause nesting/breeding adults to abandon the nest or their chicks are typically considered a significant impact. The biological survey includes recommendations to protect nesting birds from tree removal and construction-related disturbances. Typically, tree trimming or removal is prohibited within 300 feet of active nests. These recommendations are reflected in the District Plan goals and policies for biological resources on the site.

Public Works Plan Natural Resource Policies

GOAL 1: Preserve Biological Resources Within the Site

Policy

NR-1 Maintain mature trees along the periphery of the site, except for the three trees to be removed to accommodate the school improvements.

NR-2 Protect nesting birds.

Implementation

NR-1.1 The District will locate Phase One and Phase Two improvements to minimize the loss of mature trees, particularly those trees along the periphery of the site near residences.

NR-1.2 Any tree greater than six inches in diameter at a point 48 inches from the ground that is removed from the site, shall be replaced on the site at a 2:1 ratio, if feasible. If not feasible, the District will contribute to the City's community tree fund to pay for tree replacement planting in suitable locations in other city parks, sensitive habitat areas, or along city streets.

NR-2.1 Prior to site preparation activities and construction of Phase One and Phase Two improvements that commence during the active breeding and nesting season (between February and August), the District will hire a qualified biologist to conduct nesting bird surveys in accordance with Fish and Game and/or Fish and Wildlife protocols.

NR-2.2 No tree may be removed from the site during the active breeding season, if active nests are present within 300 feet of that tree.

GOAL 2: Protect Water Quality in Local Creeks and the Monterey Bay

Policy

NR-3 Ensure that runoff does not significantly impact the water quality of Soquel Creek.

NR-4 Utilize infiltration and natural filtering of storm water run-off to the extent practical.

Implementation

NR-3.1 As a part of construction of Phase One and Phase Two improvements, the District will design and implement renovation of the central parking lot, other paved areas, and building roofs to drain

into landscaped infiltration areas to the greatest extent feasible. Storm water that is not directed to landscaped infiltration areas shall be directed to storm drain improvements, such as energy dissipators, and grease and sediment traps, in compliance with Santa Cruz County Sanitation District and Soquel Creek Water District standards. All storm drain improvements shall be designed to contain storm water runoff to pre-project levels.

NR-4.1 Where feasible, design recreational areas, particularly playfields, to drain to low-use areas for infiltration, and encourage non-chemical maintenance of turf and landscaping for Phase One and Phase Two.

GOAL 3: Promote Clean Air

Policy

NR-5 Encourage alternatives to automobiles.

NR-6 Minimize idling engines.

NR-7 Minimize construction-related dust and equipment emissions.

Implementation

NR-5.1 The District will provide bicycle parking on the school grounds.

NR-5.2 The District will provide transportation services for disabled students to the school facility at implementation of Phase Two.

NR-6.1 The District will minimize idling in passenger loading and unloading areas, by posting signage that advises drivers not to idle while waiting to pick up/drop off passengers. The District will also provide written notice to parents at the beginning of each school year identifying the potential health effects of vehicle emissions and notifying them of the idling restrictions on the site.

NR-7.1 During construction of Phase One and Phase Two improvements, the District will implement control measures to reduce exposure of nearby residences and park users to dust, odors, and diesel equipment emissions, in compliance with MBUAPCD regulations.

5.0

CULTURAL AND HISTORICAL RESOURCES

5.1 Background

Cultural and prehistoric resources have been encountered in the vicinity of the Plan area in the past. In recent history, the entire Plan area was used for agriculture and then acquired by the District. The site was then graded, and landscaped for use by the community as a park and community garden. The District has owned the site since 1956.

A cultural evaluation of the site was conducted by Historic Resource Associates in November, 2007, for the Opal Cliffs Pre-school and Elementary School project. Archival research revealed that no previous studies of the project area had been conducted. On November 8, 2007, the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) conducted a record search (07-660) of the proposed project area (refer to NWIC Record Search). Review of data maps, historic-period maps, and literature for Santa Cruz County indicated that the project area contained no recorded Native American or historic-period resources. The literature review indicated that sidings and buildings associated with the Southern Pacific Railroad were present adjacent to the site circa 1914, but these no longer exist. A record search conducted on November 30, 2007 by the Native American Heritage Commission (NAHC) concluded that there is no evidence of the presence of Native American cultural resources in the project area.

After a careful field inspection of the entire site, no significant paleontological, prehistoric or historic archaeological sites, features, surface indicators, or artifacts were found, nor were any significant historic buildings, structures, or objects identified on the site. According to the California Environmental Quality Act Guidelines, and Section 36 CFR 800.4(d)(1) of the NHPA, since no cultural resource properties were identified, no cultural resource properties will be affected by the proposed undertaking, and no further cultural resources study is recommended.

5.2 Existing Policies and Regulations

Coastal Act Policies

Policy 30244. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

Existing Local Coastal Program and General Plan Policies

The City of Capitola LCP as an element of the General Plan includes the following policies relevant to the Soquel Union Elementary School District Opal Cliffs Public Works Plan:

Policy 24. It shall be the policy of the City of Capitola to provide for the protection, preservation, and proper disposition (where necessary) of archaeological, historical and paleontological resources within Capitola. This policy shall be implemented in cooperation with the landowners, developers, State Historic Preservation Office and the Archaeological Research Center.

Policy 26. The City shall identify architecturally and historically significant structures and provide for their protection. These include special, unique structures in Capitola Village and surrounding bluffs, both public and private.

5.3 Discussion

Based upon the archival research and field observations documented in the Cultural Resources Study, report, the site is not located within a known archaeological site, and no unique paleontological or prehistoric or historic resources are known to be present on the site. The report concludes that it is unlikely that significant archaeological and/or paleontological features may be present on the site. The proposed Opal Cliffs Elementary School project includes excavation to construct footings, foundations, and trenching for utilities, and because the site is in an area where previously undiscovered subsurface prehistoric features have in the past been disrupted by earth-disturbing activities, the Plan includes provisions to protect and minimize disruption to these features should they be inadvertently discovered during excavation on the site.

5.4 Public Works Plan Policies – Cultural Resources

GOAL 1: Protect cultural resources

Policy

CR-1 Take steps to protect unknown cultural resources if discovered.

Implementation

CR-1.1 The District shall be responsible for the appropriate dispensation of previously undiscovered archaeological resources if encountered during construction. Should archaeological resources be discovered at the project site during any phase of construction, the Permittee shall stop work until a mitigation plan, prepared by a qualified professional archaeologist in coordination with interested Native Americans, is completed and implemented. Prior to implementation, the mitigation plan shall be submitted for review and approval by the State Historic Preservation Office. The plan shall provide for reasonable mitigation of the archaeological impacts resulting from the development of the site, and shall be fully implemented.

CR-2.1 The District will ensure that this language is included in all construction documents in accordance with CEQA Guidelines section 15064.5(e), in the event of an accidental discovery or recognition of any human remains in any location other than a dedicated cemetery: "If human remains are found during construction there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of Santa Cruz County is contacted to determine that no investigation of the cause of death is required. If the coroner determines the remains to be Native American the coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent (MLD) from the deceased Native American. The MLD may then make recommendations to the Soquel Union Elementary School District or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in Public Resources Code Section 5097.98. The Soquel Union Elementary School District or its authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance if: a) the Native American Heritage Commission is unable to identify a MLD or the MLD failed to make a recommendation within 24 hours after being notified by the commission; b) the descendent identified fails to make a recommendation; or c) the Soquel Union Elementary School District or it's authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner."

This side intentionally left blank.

6.0

PUBLIC SERVICES, FACILITIES, AND INFRASTRUCTURE

6.1 Background

Water Supply and Distribution

Water Supply

The Soquel Creek Water District (SqCWD) is the domestic water purveyor for most of the City, including the project site. The SqCWD service area encompasses seven miles of shoreline and extends from one to three miles inland into the foothills of the Santa Cruz Mountains. The City of Capitola receives water pumped from the Purisima Aquifer, which provides two-thirds of the SqCWD's annual production (3,600 acre feet) for Capitola, Soquel, and Aptos. The City of Capitola is the only incorporated area in the District.

The SqCWD currently supplies about 5,400 acre feet, or about 1.8 billion gallons of water annually. According to the SqCWD's website, SqCWD receives 100 percent of its water from groundwater. The SqCWD operates 17 production wells with an estimated production capacity of over 15 million gallons per day. The distribution system encompasses approximately 130 miles of pipeline, ranging in diameter from two to 16 inches. Above ground storage facilities include 18 water storage tanks with a total capacity of 7.5 million gallons. Additional information on the SqCWD can be found on the SqCWD website at: http://www.soquelcreekwater.com. According to the SqCWD Urban Water Management Plan 2005 Update, groundwater aquifers are in a state of overdraft and the District has adopted several programs including conservation and a Water Demand Offset Program to reduce or limit pumping to 4,800 acre feet annually while developing a supplemental supply.

The School District improvements would be subject to compliance with conservation and water demand offset program requirements for non-single-family dwellings administered by the SqCWD. The District would comply with the SqCWD Water Use Efficiency Requirements for interior and exterior water fixtures and usage as required, to offset any increase in water demand on the site resulting from implementation of Phase One and Phase Two improvements. The District will provide landscape plans directly to the SqCWD. Upon SqCWD approval, the schoolyards and playgrounds may be exempted from the Water Efficiency Requirements. Table 1, Existing and Proposed Water Demand, compares estimates of existing water demand from the community garden with the anticipated water demand of the proposed Phase One and Phase Two school facility improvements.

Table 1 Existing and Proposed Water Demand

Land Use		Acre-Feet per Year
Existing	Community Garden	2.50 Available
Proposed	Phase One Improvements	0.34
	Remainder After Phase One	2.16 Available
	Phase Two Improvements	1.18
	Remainder After Phase Two	0.98 Available

Source: WM Architects, 2008. EMC Planning Group Inc, 2008

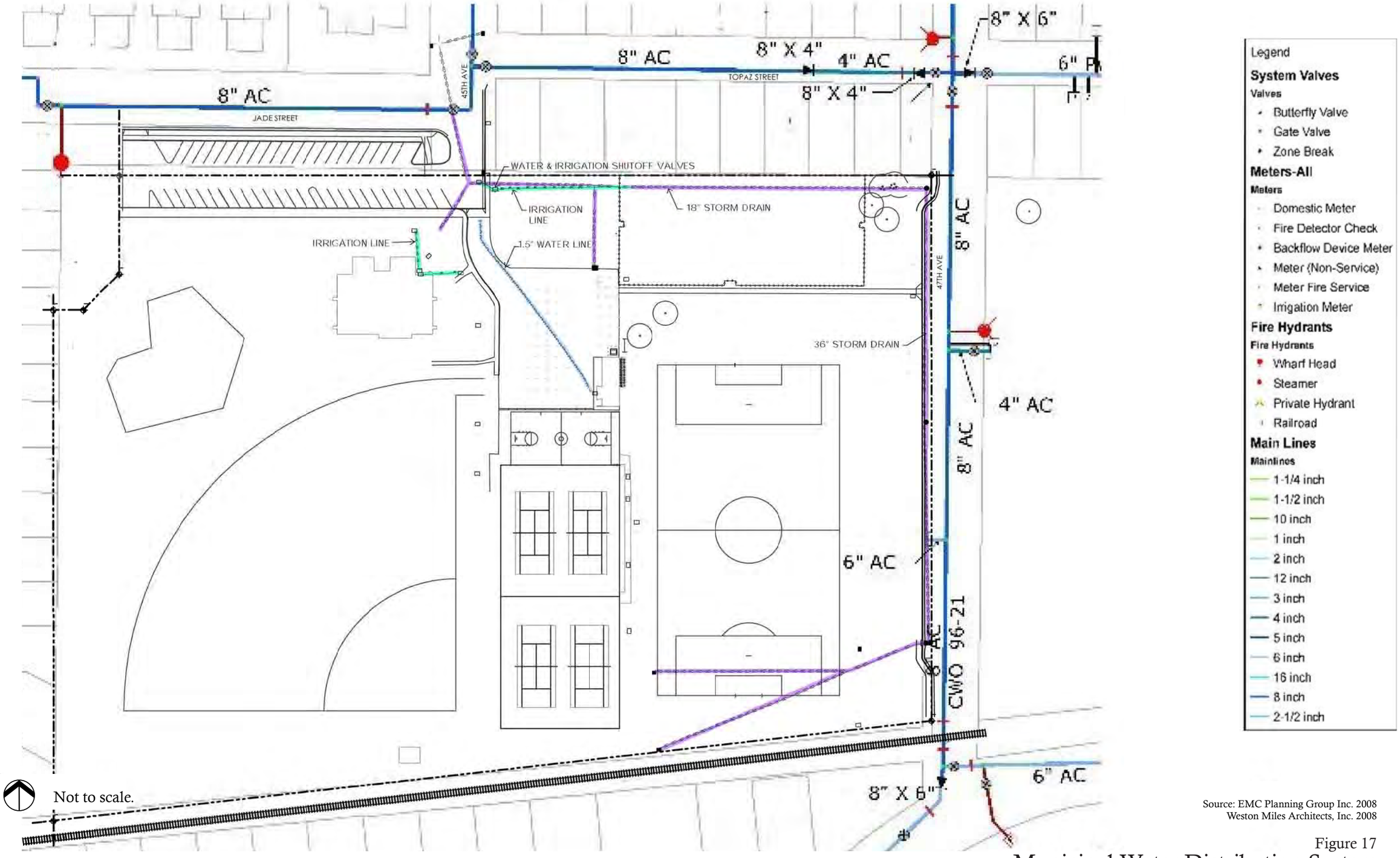
Note: Amounts shown are estimates and may not reflect the precise amount of water use on the site.

As indicated in the table above, the anticipated water demand of Phase One and Phase Two improvements can be accommodated by the amount of water previously used for irrigation purposes in the community garden.

Water Distribution

The District Property is located within the service area of the SqCWD and is currently connected to the municipal distribution system. Existing water demanding uses on the site include the community center, public restrooms, the community garden, irrigated playfields and ornamental landscaping. Existing eight (8) inch water mains are located on Jade Street and Topaz Street to the north and 47th Avenue to the east of the project site. According to the topographic survey (Figure 6, presented in Section 2) three water meters are present on the site serving the community garden, the public restroom facility, and the Community Center.

Each of these facilities are connected to the municipal water main on Jade Street by eight (8) inch pipes. Figure 17, Municipal Water Distribution System, shows the locations of the restroom facility water line and existing water mains in the vicinity of the project site. According to Gary Lamprecht, Operations and Maintenance Manager of the SqCWD, the system capacity is sufficient to provide water to both Phases of the



Not to scale.

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

Figure 17
Municipal Water Distribution System

This side intentionally left blank.

proposed school facility development on the site (telephone conversation. August 18, 2008). All proposed connection improvements would be designed and constructed to SqCWD standards.

Wastewater Services

The City is located within the Santa Cruz County Sanitation District which provides wastewater collection to its Lode Street Facility before conveyance to the City of Santa Cruz wastewater treatment plant located at the Neary Lagoon. The treatment facility has a capacity of 12 million gallons per day (mgd). According to information obtained on the sanitation district's website, current wastewater generation within the entire service area is about five to six mgd per day, which is well within the sanitation district's treatment capacity agreement of eight (8) mgd with the City of Santa Cruz. The District property is located within the existing service area and, as illustrated in the topographic survey (refer to Figure 6 in Section 2), the community center and public restrooms are connected to the sanitary sewer main on Jade Street.

According to Rene Hernandez at the County of Santa Cruz Sanitation District, the proposed Phase One and Phase Two school improvements could also connect to existing eight-inch sewer mains located on Jade Street (telephone conversation, August, 18, 2008). Figure 18, Wastewater System Map, shows the locations and pipe sizes of the City's sanitary sewer system on the District property and in the immediate vicinity of the site. Wastewater infrastructure improvement design and construction would be subject to the County of Santa Cruz Sanitation District standards and performance thresholds.

Storm Drainage

Storm drainage facilities within the City of Soquel consist of a network of gutters and storm drains that collect and convey storm water into Soquel Creek watershed and the Monterey Bay. According to Steve Jesberg, Public Works Director for the City of Capitola, storm water runoff is collected in gutters and storm drains and conveyed south under 47th Avenue, and east along Opal Cliffs Drive into underground pipes which discharge into the Monterey Bay at the Opal Cliff Drive outfall (telephone conversation, August 19, 2008).

The joint *Santa Cruz County/City of Capitola 2003 Storm Water Management Plan* (SWMP) identifies Soquel Creek as one of the two major watersheds in Santa Cruz County (page, 2-4). As such, the County and City jointly administers the SWMP. The SWMP requires the use of Best Management Practices to control the introduction of sediments and urban pollutants into the watershed and ultimately to the Monterey Bay. According to Mr. Geraldo Vargas, County of Santa Cruz Public Works Department, post-development runoff must be equal to or less than pre-development runoff and projects should retain all drainage onsite if feasible and not connect to the existing storm drain system (telephone conversation, August 27, 2008).

According to the geotechnical report prepared for the Opal Cliffs Elementary School project (Pacific Geotechnical Consulting, 2007) the District property is located on a relatively flat marine terrace that

drains generally toward Soquel Creek. According to the topographical survey (Figure 6), drainage on the eastern portion of District property flows southeast toward the railroad right-of-way. As illustrated on the site survey, existing drainage infrastructure on the site consists of an area drain in the north parking lot which conveys storm water off the site to storm drains that convey runoff under Jade Street and 47th Avenue. Three additional catch basins are located near the southern boundary of the site which convey drainage to the 47th Avenue storm drain. Construction of storm drainage improvements related to Phase One and Phase Two improvements on the site would be subject to compliance with the requirements of the SWMP.

Solid Waste

As of May 1, 2007, solid waste collection, including curbside recycling is provided by GreenWaste Recovery Inc., a private firm under contract to the City of Capitola. Solid waste is collected from the City of Capitola and is disposed at the Marina landfill in Monterey County. According to the City of Capitola Public Works Department, the City currently diverts about 51 percent of its solid waste.

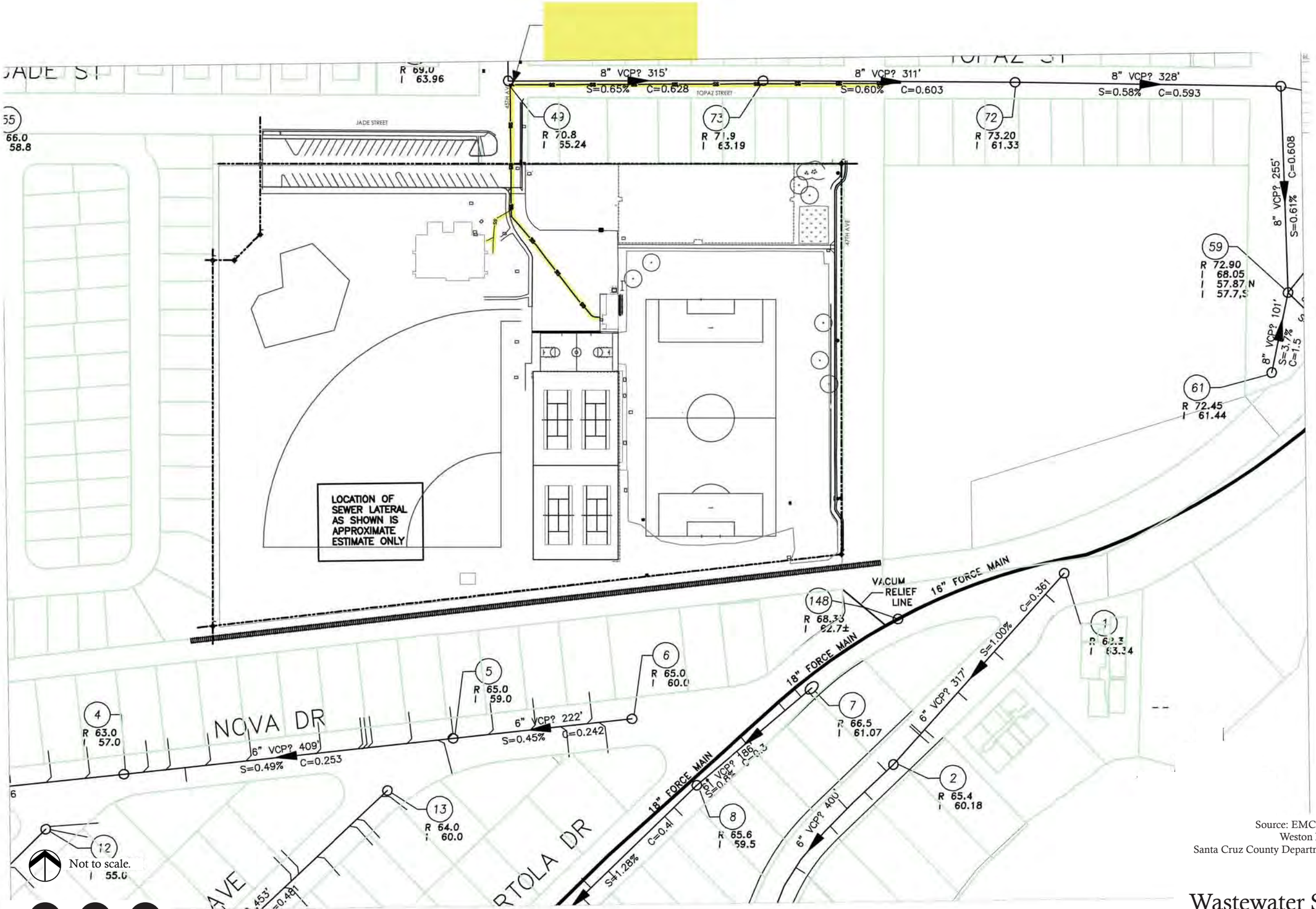
The City of Capitola Public Works Department is a sponsor of the Santa Cruz County Office of Education Public School Resource Program (PSCRP), which aims to support educational programs to support solid waste reduction education and solid waste diversion programs. The Soquel Union Elementary School District participates in the program, and the program will be extended to the Opal Cliffs Elementary School activities to reduce solid waste generation on the site.

Energy

Electricity and natural gas are provided to the site by Pacific Gas and Electric Company.

Greenhouse Gas Emissions and Climate Change

Beginning in the 1990s, the federal and state governments have been setting greenhouse gas emission reduction targets and establishing programs to address climate change. In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return GHG emissions to 1990 levels by 2000. On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed several state agencies to cooperate in the development of a Climate Action Plan. In 2006, the California ia state legislature adopted the California Global Warming Solutions Act of 2006 (AB32). AB32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. The AB 32 Scoping Plan was approved in December 2008 and contains the main strategies California will use to reduce the GHGs that cause climate change, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.



Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008
Santa Cruz County Department of Public Works 2008

Figure 18
Wastewater System Map

SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

The state energy efficiency regulations, which are implemented through the state's Title 24 building energy efficiency standards, were first adopted in 1978. Since that time, California's per-capita energy use has remained essentially level, while the United State's per-capita energy use has increased by 50 percent. The California Energy Commission (CEC) has adopted a policy for all new commercial construction in California to meet zero net energy by 2030 (CEC 2007). The Title 24 energy efficiency regulations were updated with more stringent requirements in January 2010.

In response to comments received from the City of Capitola, a GHG emissions inventory was prepared by EMC Planning Group Inc. The inventory estimates the carbon footprint of the Phase One and Phase Two improvements and evaluates the extent of energy conserving and emissions reducing improvements which can be feasibly be achieved by the District. The project GHG emissions were estimated for construction and operational phases of the project. Construction emissions were estimated using URBEMIS 7G modeling software produced by the Air Resources Board. Landscape maintenance and vehicular emissions associated with the project were also generated using the URBEMIS 7G modeling software. Emissions related to on-site electricity use was estimated using the California Climate Action Registry General Reporting Protocol (January 2009) and default emissions values for electrical generation. The Greenhouse Gas Report is included as Appendix L.

Community Services

Police and Fire Protection

The District property is located within the existing police and fire protection service areas. The City's Police Department is located at 422 Capitola Avenue, at the City Hall complex and a Community Outreach Center substation is located at the Capitola Mall. According to Police Sergeant Mark Gonzales, the Capitola police force currently consists of 23 sworn officers. According to Sergeant Gonzales, the department does not have a specified emergency response time due to the ability of police officers to respond within a few minutes to any location in the city. There are currently no plans to construct another police station in the City of Capitola (phone conversation, August 18, 2008).

The City's general plan states that fire protection services are provided by Central Fire District of Santa Cruz with the majority of Capitola properties served by the fire station located across the street from City Hall at 405 Capitola Avenue.

According to Fire Inspector Mike DeMars, 43 firefighters are stationed at this location and the average emergency response time is between three to five minutes. There are currently no plans for a second fire station within the City. (phone conversation, August 18, 2008). New construction is required to conform to the requirements of the most current version of the California Building Code and Fire Code.

Schools

The project site is owned by the Soquel Union Elementary School District and its use as a park facility is temporarily allowed by the District until the District is prepared to use the site for school buildings. The District operates four schools in the Capitola/Soquel area: Main Street Elementary School, Soquel Elementary School, and Santa Cruz Gardens Elementary School, and a single middle school, New Brighton Middle School. Each of the elementary schools provides kindergarten through fifth grade education programs and the middle school provides sixth grade through eighth grade programs. The School District is currently offering a general preschool program at its Santa Cruz Gardens Elementary School through a private vendor, Campus Kids Connection, Inc. The preschool at Santa Cruz Gardens serves thirty students daily and has a waiting list. The District estimates that several hundred preschool-age children reside within District boundaries. The District currently does not have facility capacity to expand the preschool program, and seeks to provide preschool services and programs with implementation of the Phase One improvements on the site.

6.2 Existing Policies and Regulations

Coastal Act Policies

Policy 30240 (b). Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Policy 30253 (4). New development shall minimize energy consumption and vehicle miles traveled.

Existing LCP and General Plan Goals, Policies and Programs

City of Capitola LCP policies relevant to community services, public facility and infrastructure improvements consist of the following:

Policy 4. It shall be the policy of the City of Capitola to cooperate with other agencies in the County and/or region for master planning, delivery and allocation of available Public Services consistent with the Coastal Act, Sec. 32054 and 32055 (i.e. water, [fire], sewer, schools).

Policy 12. Parking lot and storm drains, and storm water run-off culverts shall be improved by installing energy dissipaters and sand traps or other types of grease/sediment traps in conjunction with new development or intensification of use.

Policy 13. The City shall, as a condition of new development, ensure that run-off does not significantly impact the water quality of Capitola's creeks and wetlands through increased sedimentation, biochemical degradation or thermal pollution.

Policy 15. The City should coordinate with Santa Cruz County and AMBAG to investigate and implement sound watershed management methods for the land within Capitola to:

(a) maintain adequate stream flow for fish, wildlife and riparian vegetation;

(b) control contaminated urban run off; and

(c) encourage water conservation.

Policy 19. The City shall encourage energy and water conservation by supporting public education programs, and shall require low water use fixtures in new developments, as well as, encouraging energy conservation techniques in site development and construction.

General Plan Chapter 7, Safety, includes the following goals, policies and programs relevant to public services, facilities and infrastructure improvements at the District's Opal Cliffs site include the following:

Policy 6. Emergency routes for fire and police shall be accessible at all times and shall be kept free of traffic obstacles.

6.3 Discussion

Water Supply

The project site is located within the existing SqCWD water supply service area and is connected to the municipal water main on Topaz Street. According to the SqCWD requirements for obtaining a Water Demand Offset Determination, existing customers are exempt from this requirement unless a new water meter is requested. The proposed Phase One and Phase Two improvements on the site will connect to the Topaz Street water main via the existing water line and meter connection at the public restroom building or relocate and utilize the community garden meter and supply line once the garden is removed. An additional meter is not required; nevertheless, the District requested a will-serve letter from SqCWD for each phase of the school, to verify that the proposed school uses would not require additional water beyond the amount currently consumed on the site. Copies of the SqCWD will-serve letters are included in Appendix J.

Policies PF-3.1 and PF-3.2 of the District Plan encourage water conservation techniques to reduce consumptive water demand generated by the school use. The proposed Phase One and Phase Two School improvements will be designed and constructed to meet or exceed the SqCWD water conservation requirements. The project includes water-saving fixtures in all buildings, utilizing drought-tolerant landscape plantings and providing low-flow irrigation for all landscaped areas within the school grounds. The

proposed elementary school will be designed to incorporate green building standards including water-conservation features that are intended to reduce water use from existing levels by 25 percent. All water conserving programs and design features would be designed and constructed to meet SqCWD design standards and performance thresholds.

Wastewater Services

The District's Plan includes policies and design features that would minimize water consumption on the site and subsequently minimize wastewater generation on the site, in particular, wastewater generated by the new school. The proposed Phase One and Phase Two school improvements would connect to the municipal sanitary sewer system by tying into the existing sewer lateral of the public restroom building. The County of Santa Cruz Sanitation District has provided a will-serve letter to the District confirming that the proposed school improvements can be accommodated by the existing levels of service. A copy of the will-serve letter is included as Appendix J. All wastewater infrastructure improvements will be designed and constructed to meet the County of Santa Cruz Sanitation District standards and performance thresholds.

Storm Drainage

The project site is connected to the municipal storm drain system by way of an area drain in the central parking lot. Implementation of Phase One and Phase Two improvements on the site would increase the amount of impermeable surfaces on the site and potentially generate runoff that could affect the capacity of the storm drain system and introduce urban pollutants into Soquel Creek. Construction of the proposed improvements would also have the potential to violate water quality standards if construction spoils are not properly disposed of or contained to prevent their migration into the storm drain system during inclement weather.

The proposed Phase One and Phase Two school facility improvements include green building and site planning practices and principles that encourage sustainable levels of development on the site, including design features that would restrict post-development runoff from the site to be equal to or less than predevelopment levels. The proposed improvements include the use of landscaping and permeable paving materials as much as feasible to encourage percolation of runoff into soils. Bioswales are also proposed to capture, filter and retain runoff associated with the Phase One and Phase Two school facility improvements on the site. The District intends that much of the storm water run-off will be infiltrated on-site. Some areas of the site, such as the soccer field, currently drain into existing catch basins and thence into the City's storm water collection system. No changes are proposed in this area and the drainage of the field would be unchanged by the project. However, the District will direct

the new run-off from buildings and paved areas into bioswales as depicted on Figure 19 and this storm water will be captured on-site for infiltration. At implementation of Phase One improvements, pavement of the school playground would be contoured to drain to bioswales on the north and south sides of the grounds. At implementation of Phase Two, the south bioswale would be relocated and placed between the school grounds and the turf playfield and runoff from the central parking lot would be directed to an additional catch basin near the southern end of the lot. The locations of the proposed bioswales for Phase One and Phase Two improvements are presented in Figure 19, Drainage Plans.

Solid Waste Reduction

The District participates in the Public Schools Resource Program, an award winning program, sponsored in part by the Capitola Department of Public Works. The program is designed to support green practices including zero-waste efforts in public schools. As such, a substantial increase in solid waste generation is not anticipated with the implementation of the Plan; nonetheless the Plan includes waste reduction provisions to achieve that end.

Energy Conservation and Related Emissions

The combined policy provisions of this PWP will reduce energy consumption and related emissions associated with greenhouse gases and climate change for the school uses on the site. Implementation of the PWP policies are sufficient to reduce project-related increases in energy consumption and related greenhouse gas emissions, meet the PWP goals of priority school uses with continued public use of the site, and avoid the need for alternatives such as further reducing energy demand or greenhouse gas emissions of non-school uses of the site.

Facility Demand

The District's Plan intends to achieve sustainable energy consumption by achieving energy efficiency beyond Title 24 requirements for all new construction on the site. Annual power usage for both Phase One and Phase Two was estimated by the project architect to enable the preparation of the Greenhouse Gas (GHG) Emissions Inventory by EMC Planning Group Inc 2009 (Refer to Appendix L). The annual Phase One power demand for the project is estimated to be 205,979 (kilowats per hour (kwh) and the annual Phase Two demand is estimated to be 343,227 kwh. Total project demand for electricity is estimated to be 549,206 kwh per year. According to the GHG Emissions Inventory (page 6), the District intends to generate a portion of its electrical needs through on-site photovoltaic panels. According to the project architect, at least half of the project's electrical demand could be met through on-site solar electricity, which would significantly reduce energy consumption and related emissions (Miles. Correspondence March 23, 2009).

The proposed elementary school buildings are intended to meet California High Performance School requirements, which are the equivalent of LEED-Certified silver to gold level buildings. The proposed Phase One and Phase Two improvements include design features such as building orientation and placement to maximize passive solar cooling, heating and lighting, use of light colored roofing materials that reflect heat,

or other "cool" roofing materials including high albedo materials, materials that provide air circulation, attic ventilation construction to prevent summer heat from penetrating buildings, and energy efficient lighting including LED and straight tube and compact fluorescents. Additional design features to be implemented if determined to be feasible by the District include: the use of photovoltaic systems (solar energy absorption panels and associated equipment) and/or solar water heating systems, the installation of only Energy-Star rated appliances as feasible, and energy efficient heating and cooling systems with automated control systems.

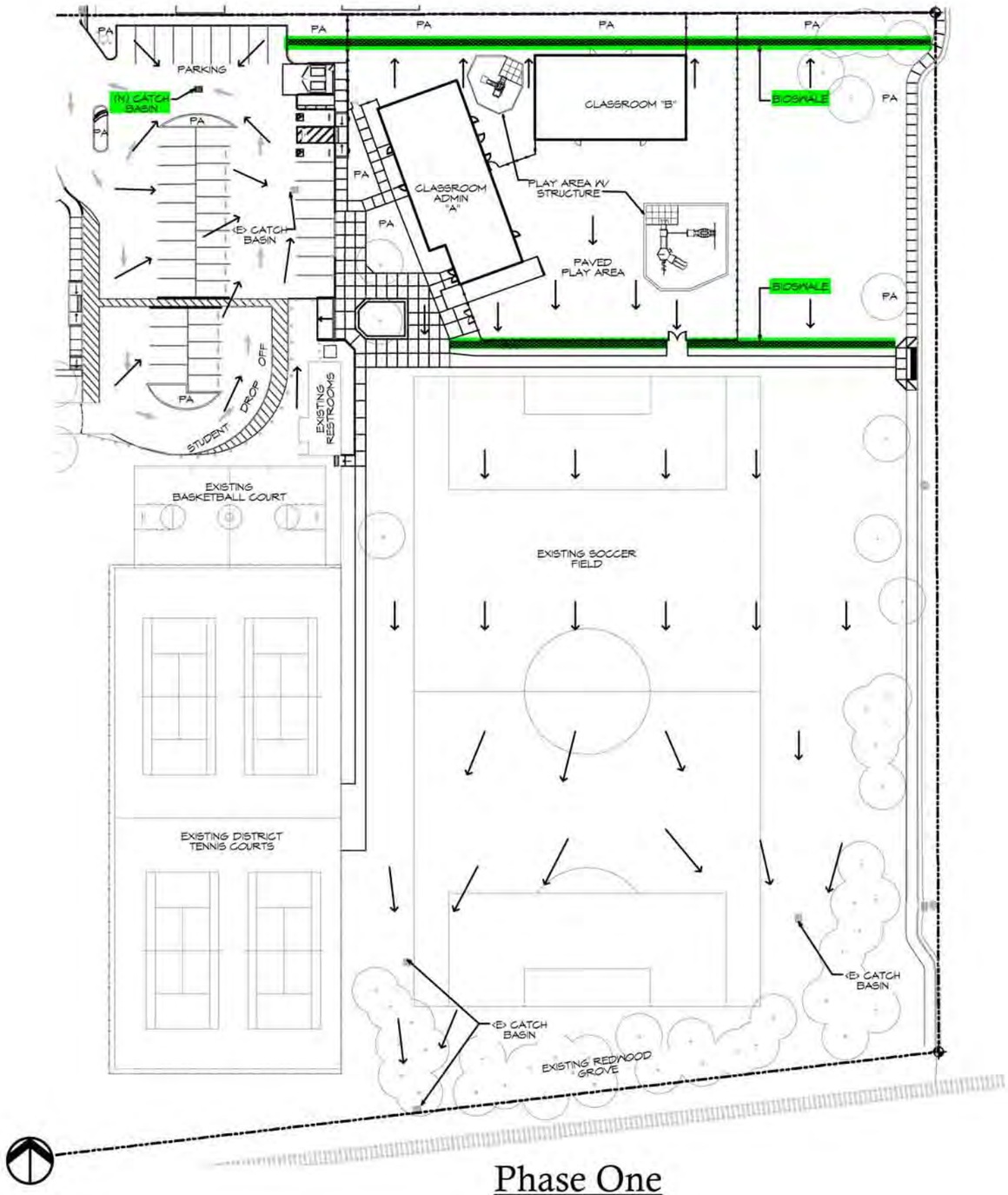
Mobile Sources of Energy Consumption

According to the GHG report, modeling software estimates that the project would result in 6,086 total vehicle miles traveled each year (at build-out of the Phase Two improvements), and that total CO2 emissions would be about 1,033.18 tons per year. However, the modeling software analyzed 365-day cycles and the school year includes only about 180 class days, therefore; the daily traffic generation would actually occur only about half the days of the year. The annual vehicle miles traveled and corresponding annual emissions, adjusted to 50 percent of the values estimated by by the model are 3,043 miles and about 517 tons of CO2, respectively.

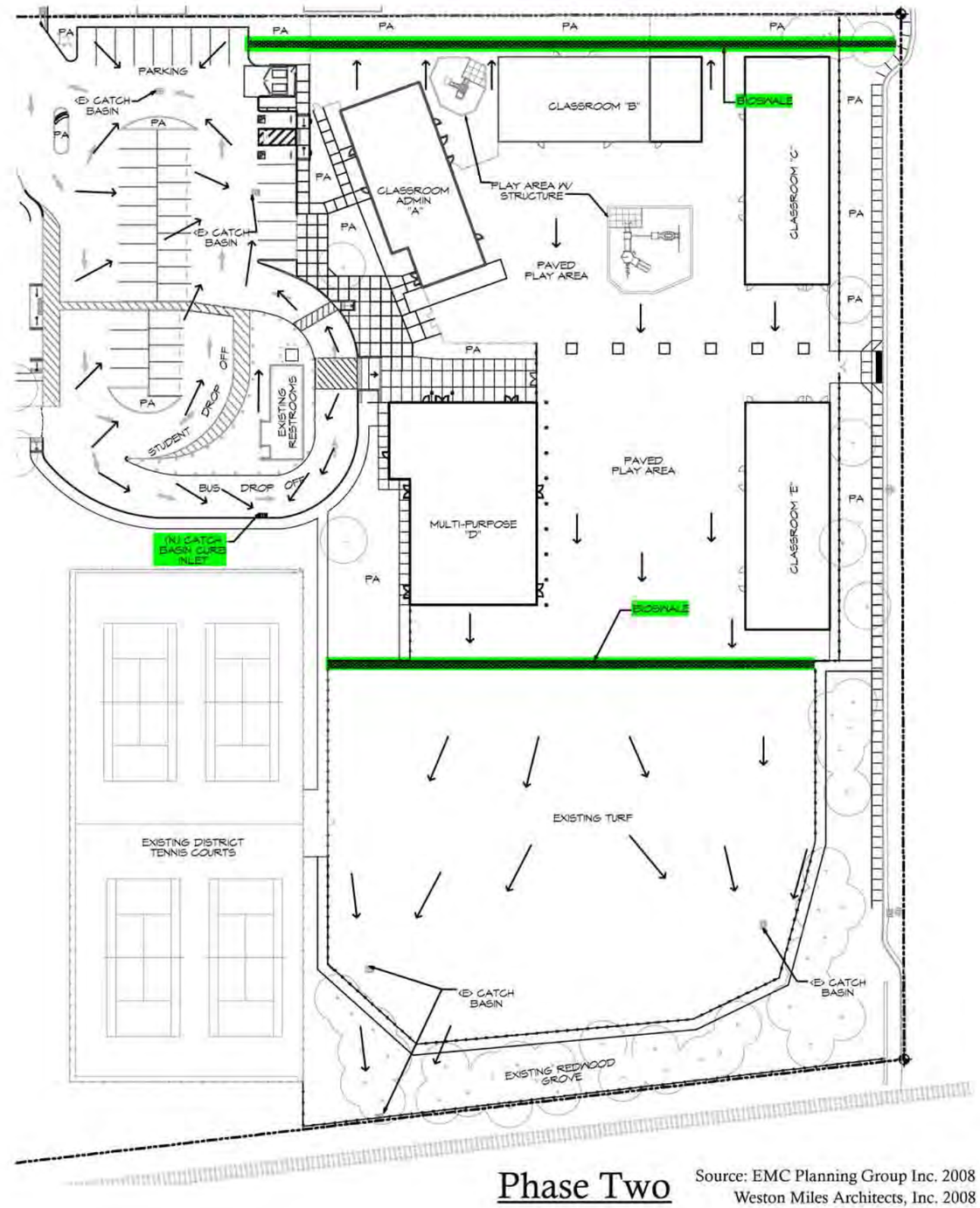
The PWP includes policies that reduce the overall vehicle miles travelled and related emissions. The proposed project provides a preschool program within the District boundary and provides an opportunity to reduce vehicle miles travelled for parents who currently transport children beyond District boundaries for preschool programs. The site is located in a neighborhood with bike lane facilities and crosswalks that promote cycling and pedestrian traffic. As discussed in Section 3.0 Circulation, and reflected in policy actions of Section 3.0 of this PWP, the District also actively encourages alternative transportation activities such as carpooling, cycling, walking buddy and walking school bus programs, and will prepare a School Route Plan Map to coordinate the design and placement of pedestrian facilities off the site. Additional policy actions prescribed in this PWP, Subsection 4.3, Natural Resources, include provisions to reduce emissions from engine idling during the construction and operational activities of both Phase One and Phase Two school improvements.

Community Services

The District property is also located within the existing service areas for the police and fire protection services and a school use on this site is not anticipated to substantially affect response times. The Department of Education requires school districts to prepare and keep current a Safety Plan for all District facilities. The District Safety Plan includes protocols for maintenance of access routes and safe environments on school grounds. With implementation of Phase One and Phase Two school facility improvements, the District will amend its existing Safety Plan to include new elementary school facility.



Phase One



Phase Two

Source: EMC Planning Group Inc. 2008
Weston Miles Architects, Inc. 2008

NOT TO SCALE

Figure 19
Drainage Plans
SUESD Opal Cliffs Public Works Plan

This side intentionally left blank.

6.4 Public Facilities and Infrastructure Goals and Policies

GOAL 1: Provide adequate water supply and water, wastewater, and storm drainage connections

Policy

PF-1 Utilize Soquel Creek Water District and Santa Cruz County Sanitation District services.

PF-2 Sustainable storm drainage practices shall be implemented on the site as feasible and described in this Plan.

PF-3 Conserve water resources.

PF-4 Utilize drought tolerant landscape plantings.

Implementation

PF-1.1 The District will obtain written verification from the Soquel Creek Water District and the Santa Cruz County Sanitation District that water supply and wastewater services are available to serve the new school facilities on the site.

PF-1.2 The District will be responsible for connecting new school buildings that require water or sewer connections to the Soquel Creek Water District water lines and the Santa Cruz County Sanitation District wastewater lines.

PF-2.1 At implementation of Phase One improvements, the District will renovate the existing central parking lot and design new paved areas and building roofs to drain into landscaped infiltration areas, to the extent feasible.

PF-2.2 Prior to the implementation of Phase One and Phase Two improvements, the District will design storm drain improvements pursuant to the requirements and design standards of the joint County/City Storm Water Management Plan, and consistent with the Preliminary Landscape Plans as depicted in Figures 11 and 112, Phase One and Phase Two Landscaping Plans.

PF-3.1 To conserve water, the District will design Phase One and Phase Two landscape plans to avoid unnecessary turf, utilize the most drought resistant turf varieties, and set irrigation for early morning hours to minimize evaporation.

PF-3.2 The District will install water conserving fixtures in all new school facilities pursuant to Soquel Creek Water District Standards.

PF-4.1 The District will specify low water use plantings in Phase One and Phase Two landscape areas, and to the extent feasible, eliminate irrigation of these areas.

GOAL 2: Provide a safe environment and adequate emergency access

Policy

PF-5 Facilitate a safe environment within the site.

Implementation

PF-5.1 At implementation of each school Phase, the District will include the site in the District Safety Plan prior to submission of plans to the Division of the State Architect.

PF-5.2 The District will identify locations of emergency vehicle and pedestrian access/egress routes to and from school grounds, locations of on-site emergency equipment, procedures during an emergency within school buildings, and provide emergency ingress information and keys/codes to the Capitola Police Department and Capitola Fire Department to assist with emergency response and comply with City of Capitola police and fire service safety provisions and standards.

PF-5.3 The District will post the site as a drug and smoke-free environment pursuant to applicable state regulations.

GOAL 3: Appropriately dispose of waste

Policy

PF-6 Promote recycling and minimize disposal in landfills.

Implementation

PF-6.1 The District will continue to participate in the Santa Cruz County Office of Education Public School Resource Program, to the extent that program remains available to the District.

PF-6.2 The District will specify in construction bids that waste material is to be recycled, and to the extent feasible, recycled or similar sustainable building materials shall be utilized.

GOAL 4: Promote Energy Conservation and Reductions in Greenhouse Gas Emissions

Policy

PF-7 Minimize vehicle miles traveled.

PF-8 Facilitate conservation of electricity.

Implementation

PF-7.1 The District will provide pre-school programs for children within the District boundary to reduce vehicle trips to other school districts.

PF-8.1 As part of design and construction of Phase One and Phase Two improvements the District shall comply with applicable Title 24 energy conservation requirements for public uses.

PF-8.2 The District will provide windows and/or skylights for natural day lighting of buildings and utilize high efficiency artificial lighting.

PF-8.3 The District will utilize Energy Star rated appliances to the extent feasible.

PF-8.4 The District will utilize photovoltaic electrical generation to the extent feasible. Photovoltaic arrays may be freestanding or incorporated into building design, but in no case shall be placed within setbacks or exceed height restrictions as prescribed by this PWP.

This side intentionally left blank.

7.0

HAZARDS

7.1 Background

Fire Hazards

The District property is located in an established urban neighborhood within the Central Fire District service area and can be served by existing levels of service as described in Section 6.0, Public Services and Infrastructure. Subsequently, the risk of fire hazards are reduced in the vicinity of the site.

Flooding, Geologic, and Seismic Hazards

The City of Capitola is located on a series of coastal marine terraces which consist generally of semi-consolidated deposits of sand and gravel. Lowlands along Soquel Creek, the Capitola Village Area, and Noble Gulch lie within the 100-year floodplain. According to the Draft Tsunami Response Plan (County of Santa Cruz Office of Emergency Services August 30, 2005), the site is outside an expected tsunami hazard zone. The high cliffs to the west of Capitola effectively protect the site from tsunami hazards. The District property is not located within the 100 year flood or tsunami zones identified in the City's General Plan, nor is the site located in an area subject to landslides or mud flows.

The City is located in a seismically active area of the central coast and the primary geological hazards affecting the City are associated with exposure of persons and property to seismic events. Primary seismic hazards are ground shaking and surface rupture along earthquake faults and secondary hazards result from the interaction of ground shaking with soil and bedrock conditions. Secondary hazards include liquefaction, subsidence, landslides, tsunamis or seiches. The general plan notes that there are no active faults within the City of Capitola; however, several faults are located nearby in the Santa Cruz Mountains and in the Monterey Bay. According to the general plan, about half of the City, including the District

Plan area, is located within an area of high seismic shaking hazards. The general plan requires the preparation of geologic/engineering report for development of buildings for public uses in this area. A geotechnical investigation was prepared for the Opal Cliffs Elementary School Project in October of 2007 and is the basis for the following discussion on geologic and seismic hazards. The report, prepared by Pacific Geotechnical Consultants is included as Appendix C to this Plan.

The District property is relatively flat and is located atop a marine terrace, generally at about 69 feet above mean sea level, and about 800 feet from the nearest coastal bluff edge. According to the geotechnical report, the site is located in an area that is identified on the Santa Cruz County liquefaction potential map as having a low liquefaction potential. Due to the low liquefaction potential for the site, the report concludes that the potential for lateral spreading is also low on the site. The report also noted that no groundwater is located beneath the site and therefore, the potential for subsidence is very low.

The geotechnical investigation determined that the site is not located within an Alquist-Priolo Earthquake fault zone, nor within any local fault zones mapped by the County of Santa Cruz. The closest fault to the project site is the Monterey Bay-Tularcitos fault located in the Monterey Bay about nine miles from the site. Available records reveal that historic earthquakes that have caused damage in the vicinity of the site have occurred along the San Andreas, Calaveras, and Hayward faults. Based upon soil borings and a probabilistic seismic hazard model, the report concludes that the potential for ground shaking at the site is high.

Hazardous Materials

The City's Hazardous Materials Ordinance regulates the transport, storage and use of hazardous materials. In the event of spills, the city cooperates with Santa Cruz County and the Central Fire District of Santa Cruz to respond to hazardous materials spills. The Plan does not allow the use, transport or storage of hazardous materials other than those typically associated with construction and elementary school and recreational program operations.

The District property is located adjacent to an active branch line of the Union Pacific Railroad, which is currently used for freight transport between Davenport to the north and Watsonville to the south. Freight materials include coal and lumber transferred from another line and cement from the RMC Pacific Materials Cement plant in Davenport, north of Santa Cruz. According to a Railroad Risk Analysis prepared for the proposed school site by Rail Technology Incorporated (2006), the railroad right-of-way is about 30-40 feet wide in the vicinity of the school site; freight service typically operates three times per week, and the maximum train speed in the vicinity of the site is 20 miles per hour. Union Pacific

Railroad operates all of its trains in compliance with the Federal Railroad Administration and California Public Utilities Commission. The Risk Analysis is included as Appendix F.

In addition to the Railroad Risk Analysis, a Phase One Environmental Site Assessment was conducted on the site by Diablo Green Consulting Inc. (2007). According to the report, the site is not located on any list of hazardous materials sites. The report notes that the site is located in an area of homes that appear to have been developed in the 1960s prior to the elimination of lead-based paint and the use of lead additives in fuel, and lead may be present in areas of the site that adjoin older homes. The report also documents the community garden use, and notes the potential presence of residual pesticides and/or herbicides associated with the garden use of the property. The investigations associated with the report did not reveal the presence of any other hazardous materials or substances known to have been used on or near the site. The report is included as Appendix G.

Noise

According to the City of Capitola General Plan, the most significant source of noise in the City of Capitola is traffic-related, with the greatest noise levels occurring near Highway One. Areas adjacent to major arterial routes such as 41st Avenue would also be exposed to increased levels of traffic-related noise. According to the Noise element of the City's general plan, normally acceptable levels of noise exposures are as follows:

- Single-Family Residential, Mobile Home uses: 60dB
- School uses: 70dB
- Outdoor Playground, Neighborhood Park: 70dB

The District property is located in a neighborhood and is surrounded by residential uses which generally are not exposed to substantial traffic-related noise. The general plan diagram, Future Transportation Sound Levels 2005, indicates the neighborhood is located within the 60dB noise contour, while the District property is developed with uses that typically generate noises in the 60dB-70dB range. The School District also requires a 45dB threshold for interior noise and a maximum 70dB for exterior noise. Acoustical studies were prepared for the site and proposed improvements by Charles M. Salter and Associates on October 3, 2007, November 13, 2008. The studies are included in Appendix H.

The City does not have adopted performance criteria or noise level standards for new sources of noise. The acoustical study identifies objective criteria for the perception of change in noise levels in increments of one dB, three dB and five dB. The perception of change is presented in the following table.

Table 2 Thresholds for Identifying Substantial Increases in Noise Levels

Increase in Noise Level	Perception of Change
+ 5 dB	Noticeable
+ 3 dB	Just noticeable
+ 1 dB	Not Noticeable

Source: Charles M. Salter and Associates, 2008, EMC Planning Group Inc, 2008.

According to the acoustical study, increases in ambient noise of 5dB or more would be noticeable and have the potential to prompt a negative response from residents exposed to the change.

Existing Noise Levels. In the vicinity of the site, traffic-related noise from vehicles travelling on 47th Avenue is expected to be the most substantial source of noise in the neighborhood. According to the acoustical analysis, existing noise levels on the site were determined to be less than 60dB in most locations, but were measured at 63dB at the northeast corner of the site adjacent to 47th Avenue (Salter and Associates, 2008). Additionally, during train pass-by on the nearby tracks, sound levels spiked to 73 dB near the existing community garden when the train horns were used (Salter and Associates 2007). Current train operations consist of two trips per day, Monday, Wednesday and Friday, and occur during daylight hours. Exposure to noise generated by the train is intermittent and short term, occurring only twice per day.

Noise Generation. The Phase One and Phase Two school improvements would increase noise levels on the site. The acoustical studies identified several sources for project-related increases in noise levels: traffic, mechanical equipment such as heating and cooling units, and child noise. Traffic noise levels in the surrounding community for the Phase One and Phase Two improvements were estimated using peak hour trip generation estimates provided in the traffic study (Higgins 2008) prepared for the proposed improvements. Child noise would be expected during outdoor activities.

7.2 Existing Policies and Regulations

Coastal Act Policies

Policy 30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Coastal Act Section 30253 lists the basic requirements for new development in the California coastal zone. Applicable subsections that are relative to the discussion of hazards are as follows:

Policy 30253. New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. Add photo of a construction site with an inspector checking plans

Local Coastal Program and General Plan Policies

The City of Capitola Local Coastal Program includes the following city-wide policies that are relevant to the Soquel Union Elementary School District Public Works Plan.

Policy 12. The City shall require all new building plans, for public use structures or multi-residential (more than three units), to conform with the Uniform Building Code construction standards.

Policy 13. It shall be the policy of the City of Capitola to adequately plan for natural hazards in new development, reduce risks to life and property, and revise all plans and the Zoning Ordinance to be in conformance with all the policies of the Coastal Act relating to hazards and shoreline structures.

Implementation. Require geologic/engineering reports in areas of high seismic shaking for structures subject to public use or multi-residential as required by the UBC.

Policy 14. All geologic/engineering reports required by the City pursuant to the policies of this component shall be prepared according to the guidelines for practice issued by the California Division of Mines and Geology, specifically CDMG notes Numbers 37 (Guidelines on Geologic/Seismic Reports), 43 (Recommended Guidelines for Determining the Maximum Probable Earthquakes), 44 (Recommended Guidelines for Preparing Engineering Geologic Reports) and interpretive Guidelines for Bluff Top Development.

In addition to the City's LCP policies, the General Plan Noise Element includes the following goals, policies and programs that are relevant to the District Plan.

GOAL: Minimize vehicular and stationary noise sources and noises emanating from temporary activities.

Policy 2. Ensure that new development or proposed changes to development mitigate noise to acceptable levels.

GOAL: Ensure that land uses and the noise environment are compatible.

Policy 8. Require an acoustic study for all proposed projects which may have a noise exposure greater than normally acceptable as indicated by Land Use Compatibility Standards. Noise exposure is defined by the future Ldn contour lines in the General Plan maps.

Policy 9. Require sound reduction measures where indicated as necessary to maintain compatibility of land uses.

Policy 10. Where possible, use measures such as landscaping mounds to avoid the use of obtrusive sound reduction walls.

7.3 Discussion

Fire Hazards

The District property is not located in an area of high fire hazards. Nevertheless, the District Plan intends to provide a safe environment on the site with adequate emergency access. To that end Policy PF-5, identified in Section 6.0, Public Facilities and Infrastructure, provides guidance to facilitate a safe environment within the site and minimize risks associated with fire hazards. Implementation measures listed in Section 6.0 extend the District Safety Plan to the site, provide emergency protocol information and access routes to the Capitola Fire Department in compliance with fire service safety provisions and standards. Design and construction of Phase One and Phase Two improvements are subject to applicable building and fire codes for public buildings, and the construction drawings are subject to the approval of the State Architect.

Flooding, Geological, and Seismic Hazards

The Plan area is not located within a flood plain or in an area of the City that is subject to tsunami or risks of seiche. The Plan maintains existing uses on the site for which the risk of exposure to hazards would remain unaffected by the implementation of Plan policies. The proposed buildings would be designed and constructed pursuant to state requirements and the most current version of the Uniform Building Code to meet adopted seismic safety requirements. As such the Plan is consistent with the provisions of Coastal Act Sections 30232 and 30253.

Hazardous Materials

The Plan would not expose people or property to hazards associated with the transport of hazardous materials on the nearby Union Pacific Railroad tracks. According to the Railroad Risk Analysis report, rail cars containing hazardous materials are not routinely carried on this line. Hazardous materials shipped in railcars are subject to the strict requirements of the Hazardous Materials Transportation Act and railcars intended for that use are designed with very high crash worthiness standards. The report concludes that the risk of a derailment that would expose people or property to hazardous materials is very low due to the infrequency of transport, low maximum speed of train on this line, proximity of local emergency responders to the school site, and high visibility along the tracks near the park. The report concludes

that railroad operations would pose a minimal risk to park users and the new school; nevertheless, several recommendations are included to further reduce any risks associated with contained freight operations on the railroad line. The report recommends that the Union Pacific Railroad be notified of the opening date of the school and duration of operations, so that train engineers are aware the presence of children on the site. These recommendations are incorporated into the Plan policies and implementing actions for the site. The Plan also provides for the installation of fencing around the school grounds to prevent conflicts between schoolchildren and the railroad tracks. Refer to the Figure11, Land Use Mitigation Plan, for an illustration of proposed improvements.

Other Potential Hazards

According to the Phase One Environmental Site Assessment conducted on the site, there is a potential for the presence of lead in soils and residual pesticides/herbicides that may occur on the project site associated with the age of the surrounding neighborhood and the presence of the community garden on the site. The report includes recommendations to reduce the hazards associated with exposure to lead and residual pesticides which include testing and abatement if necessary. The City will be responsible for the abatement of any residual pesticides/herbicides on the site. The Plan incorporates policies and implementing actions to determine if unacceptable levels of hazardous substances are present on the site, and to undertake appropriate corrective action if necessary. In addition to residual pesticides and herbicides associated with past use of the site. Continued pesticide and herbicide use on the site would be controlled by the District pursuant to adopted District policies for the application, storage and disposal of these materials in conformance with State regulations for school facilities. The Plan includes policies and implementing actions that ensure the appropriate guidelines will be followed during routine operations and maintenance of landscaped areas.

Noise

The Plan area is located in an established low-density residential neighborhood on a site that is currently developed with park and recreation uses. The site is bordered by an active branch line of the Union Pacific Railroad, although service on the tracks is infrequent. The Plan places the school improvements on the opposite side of the site to minimize exposure of school children to hazards and noise associated with the train. Placement of a school use on the site would generate an increase in the ambient noise levels due to an increase in project related traffic, mechanical equipment noise and child noise during outdoor activities. The acoustical studies identify the noise levels at nearby residences between the school grounds and Topaz Street as the most sensitive receptors to an increase in noise generated by the project.

Traffic Noise. The anticipated increase in noise levels for Phase One and Phase Two improvements are presented in Table 3 of the 2008 acoustical study (p 4). As depicted in the table, most of the study locations would not experience a substantial increase in noise levels due to traffic. During Phase One, traffic

noise would increase by 3dB near the entrance of the site south of the intersection of 45th Avenue and Jade Street. At Phase Two, the noise level at this location would increase an additional 5dB, and the placement of a sound barrier between adjacent residences on Topaz Street and the school parking lot entrance, would become necessary to reduce traffic related noise increases to less than 5dB for the combined Phase One and Phase Two improvements.

Mechanical Equipment Noise. The acoustical study estimates that mechanical noise associated with the Phase One and Phase Two uses, would result in an increase of only 2dB over the lifetime of the project. Noise generated by theses sources are not likely to impact nearby residences.

Child Noise. At implementation of both phases, child noise would be the dominant noise source on the site during outdoor play. According to the acoustical study, most of the site would not experience a substantial increase in ambient noise levels; however, increases of 5dB or more would occur at the property line between the residences on Topaz Street and the adjoining school playground area. The study recommends the installation of a sound wall along the north property line to adequately reduce the increase in noise to less than 5dB. In a subsequent conversation, the noise consultant confirmed that solid wood fencing would provide an adequate noise barrier (telephone conversation with consultant, December 2008). Policy Section 2.0 of the District Plan includes provisions for landscaping and a 20-foot buffer zone between the school buildings/play equipment and the north property line, which will reduce noise levels at the residences off Topaz Street.

Cumulative Noise Level Increases. Combined, project related traffic, mechanical and child noise on the site would cause an unacceptable increase in ambient noise near the entrance of the school parking lot and for the residences between Topaz Street and the school grounds. The studies recommend installation of a sound wall or solid fencing of a minimum six feet in height along the north property line and properly shielded mechanical equipment to attenuate the cumulative noise increase to less than 5dB. Also, at the implementation of Phase Two, the study recommends relocating the preschool play structure out of the line of sight of the residences. The provisions of Policies HZ-3.1 – HZ-3.4 combined, incorporate the study recommendations, and address cumulative levels of noise generated by the proposed Phase One and Phase Two improvements.

Noise Exposure. Placement of a school in proximity to an active railroad line could routinely but briefly expose schoolchildren to unacceptable levels of noise associated with passing trains. The use of the tracks is infrequent and the acoustical studies prepared for the project did not identify substantial effects to the exterior areas of the site. The studies recommend that installation of insulated windows and exterior

doors would effectively mitigate sound levels to meet the District building interior threshold for noise. Plan Policies HZ-3.5 and HZ-3.6 require school classrooms to be located at the north end of the site, away from the tracks and require construction methods to attenuate interior sound levels to meet applicable District thresholds.

Construction of the Phase One and Phase Two improvements have the potential to expose nearby residences and park users to unacceptable levels of noise over a relatively short period of time. Policy HZ-3.7 include performances standards and thresholds to reduce exposures to construction noise.

7.4 Public Works Plan Policies and Implementing Actions

GOAL 1: Student and Park User Safety

Policy

HZ-1 Protect students from potential hazards on or near the site.

Implementation

HZ-1.1 The District will undertake soil testing to determine if unacceptable levels of lead are present. The testing and any necessary corrective action will be conducted pursuant to state requirements for the treatment of hazardous materials.

HZ-1.2 The District will communicate the school opening and annual operations with Union Pacific Railroad to make them aware of additional children on the site.

HZ-1.3 As a part of implementation of the Phase One improvements, the District will provide and maintain fencing around the perimeter of the school grounds.

HZ-1.4 At implementation of Phase Two, the District will provide a fence (with protected openings to provide pedestrian access) around the perimeter of the school grounds. To promote the safety of school children, pedestrian openings shall not be placed along the southern perimeter.

HZ-1.5 The District will control herbicide and pesticide use on the entire site as required by law.

GOAL 2: Provide Safe Structures

Policy

HZ-2 The District will construct buildings in accordance with current state standards.

Implementation

HZ-2.1 The District will conduct appropriate soil and/or geotechnical investigations, as necessary for structural design recommendations prior to the preparation of design and construction drawings, for school facilities and obtain the approval of the State Architect for all buildings.

GOAL 3: Minimize Exposure to Excessive Noise Levels

Policy

HZ-3 Minimize exposure of nearby residences, students, and park users to excessive noise.

Implementation

HZ-3.1 Prior to occupancy of the Phase One school buildings, the District will construct and maintain a six-foot solid fence on the property line between the residences on Topaz Street and playground equipment/areas in order to reduce child-generated noise to adjacent residences.

HZ-3.2 The District will not place playground equipment/areas within the 20-foot landscaped buffer zone along the north property line of the school grounds in order to reduce noise to adjacent residences.

HZ-3.3 Exterior mounted mechanical equipment shall be properly shielded or placed out of the line of sight from the residences on Topaz Street.

HZ-3.4 The District will construct and maintain a solid fence no less than six feet in height on the property line between the residences on Topaz Street and the school entrance/central parking lot to reduce noise associated with school traffic to the adjacent residences.

HZ-3.5 The District will design the site plan for the school to place classrooms at the northern end of the site, away from the railroad tracks.

HZ-3.6 Construction of Phase One and Phase Two improvements shall include wall insulation with a minimum Standard Transmission Class (STC) rating of 45, and minimum STC rating of 28 for doors and window assemblies, and a minimum STC rating of 28 for construction grade window panes.

HZ-3.7 The District will include the following language on all construction documents:

a. Construction shall be limited to weekdays between 7 AM and 7 PM, and on Saturdays between 8 AM and 6 PM, with no activity on Sundays and holidays;

b. All internal combustion engine-driven equipment shall be equipped with mufflers that are in good condition and appropriate for the equipment; and

c. Stationary noise-generating equipment shall be located as far as possible from sensitive receptors at the residences on Topaz Street and users of the adjoining park.

8.0

PUBLIC WORKS PLAN PREPARATION

8.1 Report Authors

Lozano Smith

Judd Jordan, Attorney-at- Law

Micah Nilsson, Attorney-at-Law

Soquel Union Elementary School District

Sherree Brown, Assistant Superintendent Business Services

EMC Planning Group Inc. – Plan Preparation

Michael J. Groves, AICP, Senior Principal

Teri Wissler Adam, Principal

Sally Rideout, Senior Planner and Project Manager

Richard James, AICP, Principal Planner

Janet Ilse, Biologist/Senior Planner

Christine Bradley, Associate Planner

Weston Miles Architects, Inc. – Project Architect

Lesley L. Miles, AIA, LEED AP

Higgins Associates/Hatch Mott MacDonald – Traffic Impact Analysis

Keith B. Higgins, CE, TE

Jennifer Ellis, PE

8.2 Persons Contacted

Susan Craig, Coastal Planner, California Coastal Commission Central Coast District Office

Dan Carl, District Manager, California Coastal Commission Central Coast District Office

John Akeman, Associate Planner, City of Capitola Community Development Department

Danielle Uharriet, Planning Technician, City of Capitola Community Development Department

Mike DeMars, Fire Inspector, Central Fire District of Santa Cruz

Mark Gonzales, Sergeant, City of Capitola Police Department

Gary Lamprecht, Operations and Maintenance Manager, Soquel Creek Water District

Rene Hernandez, Santa Cruz County Sanitation District

Steve Jesberg, Public Works Director, City of Capitola Public Works Department

Geraldo Vargas, Engineering Technician, Santa Cruz County Department of Public Works

8.3 Sources

City of Capitola. *City of Capitola General Plan*. 1989.

City of Capitola. *City of Capitola Local Coastal Program*. 1981.

City of Capitola. *City of Capitola Zoning Ordinance*. 2007.

City of Capitola Recreation Department website. http://www.capitolarecreation.com

Charles M. Salter Associates Inc. *Opal Cliffs School – Phase One, Environmental Noise Study*. October 3, 2007.

Charles M. Salter Associates Inc. *Opal Cliffs School Site Noise Impact Study*. December 5, 2008

DGC Associates. *Phase I Environmental Site Assessment, 4400 Jade Street*. September 25, 2007

EMC Planning Group Inc. *Opal Cliffs Public Works Plan Final Greenhouse Gas Emissions Report*. May 13, 2009

Hatch Mott MacDonald. *Opal Cliffs School Traffic Impact Analysis Final Report*. April 10, 2009.

Historic Resource Associates, *Cultural Resources Study of the Opal Cliffs Project 4400 Jade Street, Capitola*. December 2007

Mid County Post. *A Right to the Rails: Future of Corridor at Stake as Union Pacific Targets Trespassers*. February 5, 2008.

Pacific Geotechnical Engineering. *Geologic and Seismic Hazards Evaluation, Proposed Opal Cliffs Preschool*. October 15, 2007.

Rail Technology, Inc. *Railroad Risk Analysis for Soquel Union Elementary School District Proposed School Site in Capitola*. December 7, 2007.

Santa Cruz County Regional Transportation Commission. *Santa Cruz Branch Rail Line Acquisition Fact Sheet*. Updated January 2007.

Santa Cruz County Department of Public Works website. http://www.dpw.co.santa-cruz.ca.us

Santa Cruz County Sanitation District. Will-Serve correspondence. November 5, 2008.

Sherree Brown. Email correspondence. June 30, 2008.

Soquel Creek Water District. *Urban Water Management Plan Update*. 2005. Found online at: http://www.soquelcreekwater.com/District_Reports_online/Final%20UWMP%202005.pdf

State of California Superior Court of Santa Cruz County. *Soquel Union School District v City of Capitola*. December 2002

WRA Environmental Consultants, *Biological Resources Assessment 4400 Jade Street*. December 31, 2007.

This side intentionally left blank.

FINAL GREENHOUSE GAS REPORT

Soquel Union Elementary School District - Opal Cliffs

PREPARED FOR

Soquel Union Elementary School District

Revised January 20, 2010

FINAL

Greenhouse Gas Report

Soquel Union Elementary School District - Opal Cliffs

PREPARED BY
EMC Planning Group Inc.
301 Lighthouse Avenue, Suite C
Monterey, CA 93940
Tel 831.649.1799
Fax 831.649.8399
contactus@emcplanning.com
www.emcplanning.com

Revised January 20, 2010

This document was produced on recycled paper.

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1

1.1 Greenhouse Gas Emissions and Climate Change 1-1

1.2 Project Characteristics 1-3

2.0 EMISSIONS ESTIMATES 2-1

2.1 Methodology 2-1

2.2 Construction Emissions 2-1

2.3 Vehicular Emissions 2-2

2.4 Building Emissions 2-3

3.0 EMISSIONS SUMMARY 3-1

4.0 REFERENCES 4-1

Appendix

Urbemis 2007 Version 9.2.4 Combined Annual Emissions Reports

Tables

Table 1 Construction CO_2 Emissions Summary 2-2

Table 2 Annual Vehicular CO2 Equivalents Emissions at Build-out 2-3

Table 3 Electricity Generation GHG Emissions 2-4

Table 4 GHG Emissions Summary (Metric Tons CO_2 Equivalents) 3-2

This side intentionally left blank.

1.0
INTRODUCTION

1.1 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Climate Change Understanding and Effects

The potential for human activities to have a significant effect upon the Earth's atmosphere and climate has become increasingly understood over the past several decades. It is now generally agreed that the emission of certain gases into the atmosphere has increased since the beginning of the industrial revolution to the point where the resulting changes to the Earth's atmosphere are affecting the Earth's climate.

Global climate change is caused by greenhouse gas (GHG) emissions, which are caused by several activities, including combustion of fossil fuels, deforestation, and land use change. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and certain hydro- and fluorocarbons. This phenomenon, known as the "greenhouse effect," keeps the Earth's atmosphere near the surface warmer that it would be otherwise and allows for successful habitation by humans and other forms of life.

Fossil fuel combustion releases carbon that has been stored underground into the active carbon cycle, thus increasing concentrations of GHGs in the atmosphere. Emissions of GHGs in excess of natural ambient concentrations are theorized to be responsible for the enhancement of the greenhouse effect and contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and

temperatures near the surface. The three leading contributors to greenhouse gas emissions in California are on-road transportation (36 percent), electricity generation (23 percent, of which about half is generated out of state); and industry (20 percent).

According to California Energy Commission global warming could have the following effects on the state's environment at various locations:

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento-San Joaquin River Delta due to ocean expansion;
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths and infectious diseases and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

Emissions Reduction Targets and Programs

Beginning in the 1990s, the federal and state governments have been setting greenhouse gas emission reduction targets and establishing programs to address climate change. In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return GHG emissions to 1990 levels by 2000. On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed several state agencies to cooperate in the development of a Climate Action Plan. In 2006, the California state legislature adopted the California Global Warming Solutions Act of 2006 (AB32). AB32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. The AB 32

Scoping Plan was approved in December 2008 and contains the main strategies California will use to reduce the GHGs that cause climate change, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

The state energy efficiency regulations, which are implemented through the state's Title 24 building energy efficiency standards, were first adopted in 1978. Since that time, California's per-capita energy use has remained essentially level, while the United State's per-capita energy use has increased by 50 percent. The California Energy Commission (CEC) has adopted a policy for all new commercial construction in California to meet zero net energy by 2030 (CEC 2007). The Title 24 energy efficiency regulations were updated with more stringent requirements in January 2010.

The U.S. Energy Independence and Security Act of 2007 (EISA) specifies a zero-energy use target for 50 percent of the nation's commercial buildings by 2040, and for all U.S. commercial buildings by 2050.

1.2 PROJECT CHARACTERISTICS

The Opal Cliffs Public Works Plan calls for the development of a pre-school/elementary school in two phases. Phase One is the development of a preschool, kindergarten and first grade classrooms with an administration building to serve about 80 total students. Phase Two is the development of classrooms and ancillary facilities for grades 1 through 5 with a total of about 400 students. The existing community garden and soccer field would be removed. The Opal Cliffs Public Works Plan includes provisions to allow the non-school uses of existing park facilities for at least until the end of the original term of the terminated lease with the City of Capitola, provided these uses do not conflict with school uses.

This side intentionally left blank.

2.0 EMISSIONS ESTIMATES

2.1 METHODOLOGY

GHG emissions were estimated for construction and operational phases of the project. Construction emissions were estimated using URBEMIS 7G Version 9.2.4 modeling software produced by the Air Resources Board. Landscape maintenance and vehicular emissions associated with the project were also generated using the URBEMIS 7G modeling software. Emissions related to on-site electricity use was estimated using the California Climate Action Registry General Reporting Protocol version 3.1 (January 2009) and default emissions values for electrical generation. Assumptions used are noted in each discussion below.

GHG emissions inventories are expressed in metric tons. The outputs from URBEMIS 7G are expressed in tons ("U.S. tons" or "short tons") and the results of the electrical demand calculations are expressed in pounds. These results are converted into metric tons in each table.

2.2 CONSTRUCTION EMISSIONS

URBEMIS 7G modeling software directly estimates CO_2 emissions from construction activities. For purposes of the greenhouse gas emissions projection, it is assumed that each phase will result in disturbance of about 2.5 acres of land and that each phase will result in about one acre of asphalt paving. Each phase is assumed to consist of fine grading, paving, building construction, and painting. Phase One of the project is assumed to be developed during 2010 and, although Phase Two may never be constructed, for purposes of modeling CO_2 emissions during construction, Phase Two is assumed to be constructed during 2015.

Based on these assumptions the URBEMIS 7G Version 9.2.4 modeling indicates that the project would result in 74.26 tons of CO_2 emissions during the first construction phase and 73.09 tons of CO_2 emissions during the second construction phase. Most of these emissions would result from grading and paving activities. Total construction emissions would be about 147.35 tons.

Table 1 Construction CO_2 Emissions Summary

Phase	CO_2 Emissions U.S. Tons	CO_2 Emissions Metric Tons
Phase One Construction	74.26	67.35
Phase Two Construction	73.09	66.29
Total	147.35	133.64

Source: URBEMIS 7G, California Climate Action Registry 2009, and EMC Planning Group Inc. 2009

2.3 VEHICULAR EMISSIONS

URBEMIS 7G directly estimates CO_2 emissions. URBEMIS 7G also provides an estimate of total vehicle miles traveled, which can be used to estimate emissions of CH_4 and N_2O. The traffic report estimates that the project will generate 2.96 daily trips per student (282 trips during Phase One and 902 additional trips during Phase Two). Based on these assumptions the URBEMIS 7G modeling software estimates that the project would result in 6,086 total vehicle miles traveled each year (at project build-out), and that total CO_2 emissions would be about 1,033.18 tons per year. However, because the school year includes only about 180 class days, the daily traffic generation would actually occur only about half the days of the year. Therefore, the annual vehicle miles traveled and annual emissions have been adjusted to 50 percent of the values estimated by URBEMIS (3,043 miles and 517 tons of CO_2).

CH_4 and N_2O emissions are based on per mile factors of 0.06 grams and 0.05 grams respectively. Therefore, CH_4 emissions would be 183 grams and N_2O emissions would be 152 grams each year. CH_4 is converted to CO_2 equivalents by multiplying by a factor of 21. N_2O emissions are converted to CO_2 equivalents by multiplying by a factor of 310. Therefore, annual CH_4 and N_2O emissions expressed as CO_2 equivalents would be 3,843 grams and 47,167 grams respectively.

URBEMIS 7G modeling software returned an estimate of 0.25 tons per year of CO_2 from landscape maintenance operations.

Table 2 summarizes vehicular CO_2 equivalent emissions.

Table 2 Annual Vehicular CO2 Equivalents Emissions at Build-out

GHG	Derivation/Calculation of Estimate	CO_2 Equivalents
CO_2	URBEMIS 7G (adjusted to 50 percent of annual)	517
CH_4	VMT x 0.06 g/mile x 21 equivalence conversion x 907,185 g/ton	0.004
N_2O	VMT x 0.05 g/mile x 310 equivalence conversion x 907,185 g/ton	0.052
Total	U.S. Tons	517.10
	Metric Tons	468.97

Source: URBEMIS 7G, California Climate Action Registry 2009, and EMC Planning Group Inc. 2009.

2.4 BUILDING EMISSIONS

Operational building emissions will result from electrical generation that occurs off-site at PG&E facilities or at facilities from which PG&E purchases electrical power. GHG emissions from electrical generation vary depending on the source of power. This estimate uses a CO_2 emission factor that is published by PG&E and accounts for PG&E's current energy generation portfolio. Other factors are used for CH_4 and N_2O. The factors used are 0.524 pounds CO_2 per kwh, 0.0000067 pounds CH_4 per kwh, and 0.0000037 pounds N_2O per kwh. Estimated annual power usage was estimated by the project architect in kvah (kilo volt-amp hours) and converted to kilowatt hours (kwh) using a power factor of 0.85. The annual Phase One power demand for the project is estimated to be 205,979 kwh and the annual Phase Two demand is estimated to be 343,227 kwh. Total project demand for electricity is estimated to be 549,206 kwh per year.

Using the estimated annual electricity demand, and the current standard emissions factors, the project is estimated to result in emissions of about 287,784 pounds of CO_2, four pounds CH_4, and two pounds N_2O- per year from power generation. Table 3 summarizes the calculations for electricity-related GHG emissions and expresses the result in pounds of CO_2 equivalents.

Table 3 Electricity Generation GHG Emissions

GHG	Derivation/Calculation of Estimate	CO_2 Equivalents
CO_2	549,206 kwh x 0.524 lbs/kwh	287,784
CH_4	549,206 kwh x 0.0000067 lbs/kwh x 21 equivalence conversion	84
N_2O	549,206 kwh x 0.0000037 lbs/kwh x 310 equivalence conversion	630
Total	Pounds	288,498
	U.S. Tons	144.25
	Metric Tons	130.83

Source: California Climate Action Registry 2009 and EMC Planning Group Inc. 2009.

3.0
EMISSIONS SUMMARY

Table 4 provides a summary of GHG emissions from each identified source, and converts the emissions inventory into metric tons of CO_2 equivalents. One U.S. ton is equal to 0.907 metric tons. One pound is equal to 0.000454 metric tons. The construction phase results in the greatest CO_2 emissions, equal to about nine years of operational emissions. Although the project would result in CH_4 and N_2O emissions, those emissions round to much less than one metric ton, and are not included in Table 4.

The project proposes to generate a portion of its electrical needs through on-site photovoltaic panels. It is estimated that at least half of the project's electrical demand could be met through on-site solar electricity. Most of the neighborhoods near the project site are built at medium density and sidewalks and bike lanes are common. This factor encourages walking and bicycling, and it is likely that a higher than average percentage of students will arrive by non-motorized means. URBEMIS 7G results suggest that the presence of sidewalks and bike lanes in the area could reduce vehicle trips by more than five percent.

Table 4 GHG Emissions Summary (Metric Tons CO_2 Equivalents)

Source/GHG	Single Year Emissions	Ongoing Annual Emissions
Phase One Construction		
CO_2	67	--
Phase Two Construction		
CO_2	66	--
Vehicles		
CO_2	--	469
CH_4	--	0
N_2O	--	0
Electricity		
CO_2	--	131
CH_4	--	0
N_2O	--	0

Source: URBEMIS 7G, California Climate Action Registry 2009, and EMC Planning Group Inc. 2009.

4.0
REFERENCES

California Air Pollution Control Officers Association. *CEQA and Climate Change.* January 2008.

California Air Resources Board. *AB 32 Scoping Plan.* December 2008.

California Air Resources Board. *URBEMIS2002 Software Program Instructions*.

California Climate Action Registry. *General Reporting Protocol.* Version 3.1, January 2009.

California Department of Justice Office of Attorney General web site (California Department of Justice 2008).

California Energy Commission. *2007 Integrated Energy Policy Report* (CEC-100-2007-008-CMF). 2007.

California Energy Commission. *Global Climate Change: In Support of the 2005 Integrated Energy Policy Report*. 2005.

California Environmental Protection Agency. *Climate Action Team Report to Governor Schwarzenegger and the Legislature.* March 2006)

California Office of Planning and Research. *Technical Advisory on CEQA and Climate Change*. June 2008.

Pacific Gas and Electric Company. *Carbon Footprint Calculator Assumptions*.

Weston Miles Architects. Email from Lesley Miles to Sally Rideout, EMC Planning Group Inc. et al. re Opal Cliffs Solar Study Sq. Ft.; March 24, 2009.

Weston Miles Architects. Opal Cliffs School Site Plans for Phase One and Phase Two, 2008.

This side intentionally left blank.

APPENDIX

URBEMIS 2007 VERSION 9.2.0
COMBINED ANNUAL EMISSIONS REPORTS

1/19/2010 3:46:52 PM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Projects\CS Projects\300-399 Series\CS-378 (Opal Cliffs Elementary School CDP)\Deliverables\GHG Report\Opal Cliffs Urbemis Model.urb9

Project Name: Opal Cliffs School for GHG emissions

Project Location: Santa Cruz County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.40	0.69	0.53	0.00	0.04	0.04	0.08	0.01	0.04	0.05	74.26
2010 TOTALS (tons/year mitigated)	0.37	0.69	0.53	0.00	0.01	0.04	0.05	0.00	0.04	0.04	74.26
Percent Reduction	7.52	0.00	0.00	0.00	75.98	0.00	33.71	75.03	0.00	11.63	0.00
2015 TOTALS (tons/year unmitigated)	0.37	0.47	0.44	0.00	0.04	0.03	0.06	0.01	0.03	0.03	73.09
2015 TOTALS (tons/year mitigated)	0.37	0.47	0.44	0.00	0.04	0.03	0.06	0.01	0.03	0.03	73.09
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.04	0.00	0.14	0.00	0.00	0.00	0.25
TOTALS (tons/year, mitigated)	0.04	0.00	0.14	0.00	0.00	0.00	0.25
Percent Reduction	0.00	NaN	0.00	NaN	NaN	NaN	0.00

1/19/2010 3:46:52 PM

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.17	0.96	8.52	0.00	0.84	0.16	450.27
TOTALS (tons/year, mitigated)	1.12	0.91	8.03	0.00	0.79	0.15	424.22
Percent Reduction	4.27	5.21	5.75	NaN	5.95	6.25	5.79

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.21	0.96	8.66	0.00	0.84	0.16	450.52
TOTALS (tons/year, mitigated)	1.16	0.91	8.17	0.00	0.79	0.15	424.47
Percent Reduction	4.13	5.21	5.66	NaN	5.95	6.25	5.78

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

1/19/2010 3:46:52 PM

2010	0.40	0.69	0.53	0.00	0.04	0.04	0.08	0.01	0.04	0.05	74.26
Fine Grading 05/28/2010-06/11/2010	0.02	0.14	0.08	0.00	0.04	0.01	0.04	0.01	0.01	0.01	12.94
Fine Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.02	0.14	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.36
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Asphalt 07/05/2010-08/11/2010	0.03	0.17	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.42
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.17	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.71
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59
Building 07/05/2010-10/22/2010	0.05	0.38	0.31	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.53
Building Off Road Diesel	0.05	0.37	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	35.74
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Building Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.68
Coating 09/30/2010-11/05/2010	0.30	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Architectural Coating	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37

1/19/2010 3:46:52 PM

2015	0.37	0.47	0.44	0.00	0.04	0.03	0.06	0.01	0.03	0.03	73.09
Fine Grading 05/28/2015-06/11/2015	0.01	0.10	0.06	0.00	0.04	0.00	0.04	0.01	0.00	0.01	12.94
Fine Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.36
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Asphalt 07/05/2015-08/11/2015	0.02	0.12	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.82
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.12	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.22
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Paving Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 07/05/2015-10/22/2015	0.04	0.25	0.25	0.00	0.00	0.01	0.01	0.00	0.01	0.01	43.95
Building Off Road Diesel	0.03	0.24	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	35.29
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11
Building Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.56
Coating 09/30/2015-11/05/2015	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Architectural Coating	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37

Phase Assumptions

Phase: Fine Grading 5/28/2010 - 6/11/2010 - Phase 1 grading

Total Acres Disturbed: 1.3

Maximum Daily Acreage Disturbed: 0.32

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

1/19/2010 3:46:52 PM

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 5/28/2015 - 6/11/2015 - Phase 2 grading

Total Acres Disturbed: 1.3

Maximum Daily Acreage Disturbed: 0.32

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/5/2010 - 8/11/2010 - Phase 1 paving

Acres to be Paved: 0.32

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/5/2015 - 8/11/2015 - Phase 2 paving

Acres to be Paved: 0.32

Off-Road Equipment:

1/19/2010 3:46:52 PM

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 7/5/2010 - 10/22/2010 - Phase 1 building

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 7/5/2015 - 10/22/2015 - Phase 2 building

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 9/30/2010 - 11/5/2010 - Phase 1 coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 100

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 9/30/2015 - 11/5/2015 - Phase 2 coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 100

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

1/19/2010 3:46:52 PM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.37	0.69	0.53	0.00	0.01	0.04	0.05	0.00	0.04	0.04	74.26
Fine Grading 05/28/2010-06/11/2010	0.02	0.14	0.08	0.00	0.01	0.01	0.01	0.00	0.01	0.01	12.94
Fine Grading Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.02	0.14	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.36
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Asphalt 07/05/2010-08/11/2010	0.03	0.17	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.42
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.17	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.71
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59
Building 07/05/2010-10/22/2010	0.05	0.38	0.31	0.00	0.00	0.02	0.02	0.00	0.02	0.02	44.53
Building Off Road Diesel	0.05	0.37	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	35.74
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Building Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.68
Coating 09/30/2010-11/05/2010	0.27	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Architectural Coating	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37

1/19/2010 3:46:52 PM

2015	0.37	0.47	0.44	0.00	0.04	0.03	0.06	0.01	0.03	0.03	73.09
Fine Grading 05/28/2015-06/11/2015	0.01	0.10	0.06	0.00	0.04	0.00	0.04	0.01	0.00	0.01	12.94
Fine Grading Dust	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.36
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Asphalt 07/05/2015-08/11/2015	0.02	0.12	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.82
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.12	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.22
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Paving Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49
Building 07/05/2015-10/22/2015	0.04	0.25	0.25	0.00	0.00	0.01	0.01	0.00	0.01	0.01	43.95
Building Off Road Diesel	0.03	0.24	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	35.29
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11
Building Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.56
Coating 09/30/2015-11/05/2015	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Architectural Coating	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/28/2010 - 6/11/2010 - Phase 1 grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

1/19/2010 3:46:52 PM

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Architectural Coating 9/30/2010 - 11/5/2010 - Phase 1 coating

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products							
Architectural Coatings	0.03						
TOTALS (tons/year, unmitigated)	0.04	0.00	0.14	0.00	0.00	0.00	0.25

1/19/2010 3:46:52 PM

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products							
Architectural Coatings	0.03						
TOTALS (tons/year, mitigated)	0.04	0.00	0.14	0.00	0.00	0.00	0.25

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Elementary school	1.17	0.96	8.52	0.00	0.84	0.16	450.27
TOTALS (tons/year, unmitigated)	1.17	0.96	8.52	0.00	0.84	0.16	450.27

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Elementary school	1.12	0.91	8.03	0.00	0.79	0.15	424.22

1/19/2010 3:46:52 PM

TOTALS (tons/year, mitigated)	1.12	0.91	8.03	0.00	0.79	0.15	424.22

Operational Mitigation Options Selected

Residential Mitigation Measures

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was NOT selected.

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.79%

Inputs Selected:

The Number of Intersections per Square Mile is 200

The Percent of Streets with Sidewalks on One Side is 5%

The Percent of Streets with Sidewalks on Both Sides is 95%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 80%

Operational Settings:

Does not include correction for passby trips

Includes the following double counting adjustment for internal trips:

1/19/2010 3:46:52 PM

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2010 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Elementary school		1.29	students	400.00	516.00	2,652.24
					516.00	2,652.24

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.6	2.0	97.1	0.9
Light Truck < 3750 lbs	18.7	2.7	92.5	4.8
Light Truck 3751-5750 lbs	19.9	1.0	98.5	0.5
Med Truck 5751-8500 lbs	6.9	1.4	98.6	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.2	0.0	66.7	33.3
Lite-Heavy Truck 10,001-14,000 lbs	0.8	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.1	9.1	18.2	72.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	5.1	68.6	31.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	7.7	84.6	7.7

1/19/2010 3:46:52 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Rural Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				10.0	5.0	85.0

Operational Changes to Defaults

Hatch Mott MacDonald

OPAL CLIFFS SCHOOL
CAPITOLA, CALIFORNIA

TRAFFIC IMPACT ANALYSIS

Final Report

Prepared For

Soquel Union Elementary School District
Capitola, CA

April 10, 2009

Hatch Mott MacDonald

TABLE OF CONTENTS

1 INTRODUCTION 1

1.1 Project Description 1
1.2 Scope of Work 2
1.3 Traffic Operation Evaluation Methodologies and Level of Service Standards 3

2 EXISTING TRAFFIC CONDITIONS 5

2.1 Existing Traffic Network 5
2.2 Existing Traffic Data 6
2.3 Existing Conditions Intersection Operations 6
2.3.1 Intersection Operations 6
2.3.2 Intersection Mitigations 6

3 EXISTING PLUS PROJECT (PHASE 1) TRAFFIC CONDITIONS 8

3.1 Project Trip Generation (Phase 1) 8
3.2 Project Trip Distribution and Assignment (Phase 1) 8
3.3 Existing Plus Project (Phase 1) Condition Intersection Operations 9
3.3.1 Intersection Operations 9
3.3.2 Intersection Mitigations 9

4 EXISTING PLUS PROJECT (PHASE 2) TRAFFIC CONDITIONS 10

4.1 Projects Trip Generation (Phase 2) 10
4.2 Project Trip Distribution and Assignment (Phase 2) 10
4.3 Existing Plus Project (Phase 2) Condition Intersection Operations 11
4.3.1 Intersection Operations 11
4.3.2 Intersection Mitigations 11

5 CUMULATIVE PLUS PROJECT (PHASE 2) TRAFFIC CONDITIONS (YEAR 2015) 12

5.1 Cumulative Buildout Growth 12
5.2 Cumulative Plus Project (Phase 2) Condition Intersection Operations 12
5.2.1 Intersection Operations 12
5.2.2 Intersection Mitigations 12

6 NEIGHBORHOOD QUALITY OF LIFE 14

7 EVALUATION OF PROJECT SITE PLAN 16

7.1 Vehicle Access and Internal Circulation 16
7.2 Pedestrian Access 16
7.3 On-Site Parking Evaluation 17
7.4 Student Drop-Off / Pick-Up Operations 17

8 RAILROAD GRADE CROSSING CONSIDERATIONS 19

9 REFERENCES 21

9.1 List of References 21
9.2 List of Contacts 21

Hatch Mott MacDonald

LIST OF EXHIBITS

1. PROJECT LOCATION MAP

2A. PROPOSED PARKING LAYOUT – PHASE 1
2B. PROPOSED PARKING LAYOUT – PHASE 2

3. STUDY INTERSECTIONS

4. EXISTING AM [MID AFTERNOON] (PM) CONDITIONS PEAK HOUR VOLUMES

5. STUDY INTERSECTION LEVELS OF SERVICE

6. RECOMMENDED INTERSECTION IMPROVEMENTS

7A. PROJECT TRIP GENERATION
7B. PROJECT TRIP DISTRIBUTION

8A. PROJECT TRIP ASSIGNMENT – PHASE 1
8B. EXISTING PLUS PROJECT – PHASE 1 AM [MID AFTERNOON] (PM) PEAK HOUR VOLUMES

9A. PROJECT TRIP ASSIGNMENT – PHASE 2
9B. EXISTING PLUS PROJECT – PHASE 2 AM [MID AFTERNOON] (PM) PEAK HOUR VOLUMES

10. CUMULATIVE PLUS PROJECT – PHASE 2 AM [MID AFTERNOON] (PM) PEAK HOUR VOLUMES

11A. SOQUEL UNION ELEMENTARY SCHOOL BOUNDARY MAP
11B. OPAL CLIFFS SCHOOL PROPOSED ATTENDANCE AREA BOUNDARY MAP

12. STUDY ROADWAY SEGMENTS' TIRE INDEX VALUES

13. OPAL CLIFFS SCHOOL INFLUENCE ZONE MAP

Hatch Mott MacDonald

LIST OF APPENDICES

A1. LEVEL OF SERVICE DESCRIPTIONS - SIGNALIZED INTERSECTIONS

A2. LEVEL OF SERVICE DESCRIPTIONS – UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL (AWSC)

A3. LEVEL OF SERVICE DESCRIPTIONS – UNSIGNALIZED INTERSECTIONS WITH SIDE STREET STOP CONTROL ONLY

B. INTERSECTION LEVEL OF SERVICE CALCULATIONS – EXISTING CONDITIONS

C. INTERSECTION LEVEL OF SERVICE CALCULATIONS – EXISTING PLUS PROJECT – PHASE 1

D. INTERSECTION LEVEL OF SERVICE CALCULATIONS – EXISTING PLUS PROJECT – PHASE 2

E. INTERSECTION LEVEL OF SERVICE CALCULATIONS – CUMULATIVE PLUS PROJECT – PHASE 2

F. NEIGHBORHOOD TRAFFIC-RELATED QUALITY OF LIFE CONSIDERATIONS

G. PEAK HOUR SIGNAL WARRANTS

H. INTERSECTION NEAR A HIGHWAY-RAIL GRADE CROSSING SIGNAL WARRANTS

Hatch Mott MacDonald

1 INTRODUCTION

This Traffic Impact Analysis (TIA) presents the potential traffic impacts from the proposed Opal Cliffs School project in Capitola, California. The project site is located in the Opal Cliffs area, south of Jade Street and Topaz Street, between Circle Drive and 47th Avenue, and is known to the public as Jade Street Park. **Exhibit 1** shows the project location map.

The acreage, which is located within a residential neighborhood, is owned by the Soquel Union Elementary School District (SUESD), who has allowed the City of Capitola to use it for parkland for many years. The existing facilities located on the site include the Community Center, baseball and soccer fields, tennis courts, a basketball court, community garden area, play area, and two parking areas. The Community Center is the primary site for the City of Capitola recreation classes. It is also available for small gatherings and meetings. SUESD will permit the City of Capitola to continue to use the portions of the site, not in use by SUESD, to serve local residents at least during the remainder of original term of the expired lease.

1.1 Project Description

SUESD proposes to construct a new preschool / elementary school. The proposed Opal Cliffs School is to be implemented in two phases. The first phase consists of the installation of portable buildings, play areas, courtyards and improvements to the existing central parking lot on 2.4-acres, in a portion of the northeastern quarter of the site. The expanded parking lot would be available for users of the recreational facilities on the site after school hours. The parking lot would be expanded from 26 existing stalls to 46 stalls including two ADA accessible spaces, and would include a curbside pickup/drop-off zone near the administration building and existing public restroom.

The majority of the Phase 1 improvements are limited to the northeast portion of the site in an area that is currently used for a community garden. Under Phase 1 conditions, all existing facilities at the park, including the community center, are to remain and operate as they do under existing conditions, with the exception of the community garden. The City is considering suitable locations to relocate the community garden off the District property. The existing public restrooms would remain available to the public throughout Phase 1.

At buildout, the Phase One improvements will house a pre-school, kindergarten, first grade, and administrative offices (K-1). The estimated student population for the Phase One improvements is 40 pre-school students and 40 elementary school students. Operation and maintenance of the facility would require approximately eight employees consisting of on-site faculty and staff. The proposed parking layout plan for Phase 1 improvements is included as **Exhibit 2A.**

Phase 2 includes the construction of three additional buildings: two classroom buildings and one multi-purpose building. This phase consists of the construction of additional classroom wings to expand the facility from pre-school and K-1 to a full pre-school and kindergarten through fifth grade (K-5) elementary school if, and when, enrollment warrants. The estimated student population of the K-5 facility is 80 pre-school students and 320 elementary students for a total student body of 400 students. Approximately 19-27 faculty members and staff are needed for a facility of this size.

Additionally, Phase 2 improvements include replacing the soccer field with a fenced playground and eliminating the basketball court to accommodate reconfiguration of the central parking lot. Phase 2 improvements to on-site parking include enlarging the circulation area to allow a dedicated loading zone at the southern end of the central lot and reducing the number of spaces in the central parking lot from 46 spaces to 44 spaces to accommodate the dedicated loading area. The proposed parking layout plan for Phase 2 improvements is included as **Exhibit 2B.**

The existing baseball / softball field on the western portion of the site could potentially be converted to a dual-use field to accommodate soccer and baseball leagues; however, SUESD currently allows public use of other school grounds within the City, and the soccer league could also make use of these.

1.2 Scope of Work

This traffic study analyzes potential traffic impacts that may be associated with the development of the project site. The traffic study includes a traffic impact analysis on intersection traffic operations during the weekday AM, Mid-Afternoon, and PM peak hours. The study analyzes traffic conditions under these development scenarios:

- Existing Conditions
- Existing Plus Project (Phase 1) Conditions
- Existing Plus Project (Phase 2) Conditions
- Cumulative Plus Project (Phase 2) Conditions

Quantitative Levels of Service (LOS) analysis has been performed for the study intersections for all development scenarios. Intersection operations were evaluated using the city-wide Traffix model.

The following intersections were analyzed. Recommendations for improvements and mitigation measures to offset the traffic impacts from the proposed project are provided.

Project intersections:

1. 41st Avenue / Jade Street – Brommer Street
2. 45th Avenue / Jade Street - Topaz Street
3. 45th Avenue / Capitola Road
4. 47th Avenue / Topaz Street
5. 47th Avenue / Portola Drive

Project intersection locations are shown on **Exhibit 3**.

Based on Phase 1 and Phase 2 proposed parking layouts (**Exhibit 2A** and **Exhibit 2B**, respectively), an analysis of vehicle access and internal circulation, pedestrian access, and student drop-off and pick-up operations are provided. Additionally, an on-site parking evaluation and considerations for the existing railroad grade crossing located on 47th Avenue, north of Portola Drive are provided.

The neighborhood quality of life under Existing Plus Project (Phase 1), Existing Plus Project (Phase 2), and Cumulative Plus Project (Phase 2) conditions using the "TIRE" index was analyzed for the following four street segments:

1. Jade Street between 41st Avenue and 45th Avenue
2. Topaz Street between 45th Avenue and 47th Avenue
3. 45th Avenue between Capitola Road and Jade Street
4. 47th Avenue between Topaz Street and Portola Drive

1.3 Traffic Operation Evaluation Methodologies and Level of Service Standards

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept. LOS is a quantitative description of an intersection and roadway's operation, ranging from LOS A to LOS F. Level of service "A" represents free flow un-congested traffic conditions. Level of service "F" represents highly congested traffic conditions with what is commonly considered unacceptable delay to vehicles on the road segments and at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes. LOS descriptions for signalized intersections, un-signalized intersections with all-way stop control, and un-signalized intersections with two-way stop control are shown in ***Appendices A1, A2 and A3,*** respectively.

The traffic operations of the intersections were evaluated using the Traffix analysis software (Version 7.8), based on the *Highway Capacity Manual 2000* methodologies for signalized and un-signalized intersections. Intersection operations are based upon the average vehicular delay at the intersection. The average delay is then correlated to a level of service. For side street stop controlled intersections, the vehicle delay for side street traffic is analyzed. LOS for each side street movement is based on the distribution of gaps in the major street traffic stream and driver judgment in selecting gaps. When using the HCM 2000 method for the analysis of signalized and all-way stop controlled intersections, the overall intersection delay is used to determine LOS.

The City of Capitola has established LOS C as the general threshold for acceptable overall traffic operations for signalized and un-signalized intersections.

Peak hour signal warrants were analyzed for the unsignalized intersections, as taken from the *California Manual on Uniform Traffic Control Devices For Streets and Highways (MUTCD)*, (Section 4C.04, Warrant 3, Peak Hour), California Department of Transportation, September 26, 2006. Peak hour signal warrants are included in ***Appendix G***.

The Traffic Infusion on Residential Environment (TIRE) index is a measure of the impact of traffic on residents along a street. The TIRE index scale ranges from 0 to 5 depending on daily traffic volume. An index of 0 represents the least infusion of traffic and 5 the greatest, and thereby, the poorest residential environment. Typical street types associated with the various index levels are shown on the TIRE index chart included in ***Appendix F.***

TIRE is based on the theory that a given increase in traffic volume has a greater impact on residential environment along a residential street with a low traffic volume than along a street with a high pre-existing volume. TIRE effects are separate from noise and air pollution impacts. TIRE represents the effect of traffic on the safety and comfort of human activities such as walking, cycling, and playing on or near a street and on the freedom to maneuver vehicles in and out of residential driveways.

The TIRE Index Table gives TIRE values associated with various daily traffic volume ranges. A street with a TIRE value of three or greater is considered to function primarily as a traffic street and exhibit significantly impaired residential environment. The projected difference between a pre- and post-project TIRE value in the predicted impact of the project on residential environment. Any projected change of 0.1 or greater would be noticeable to residents.

2 EXISTING TRAFFIC CONDITIONS

This chapter presents a description of the existing traffic network, existing traffic volumes, intersection levels of service, and an overview of traffic flow conditions within the study area.

2.1 Existing Traffic Network

Roadways serving the study area include Capitola Road, Brommer Street, Portola Drive, 41st Avenue, 47th Avenue, and Highway 1. Direct project access is provided by Jade Street, and 45th Avenue.

Highway 1 is a state highway within Santa Cruz County, providing access to San Francisco to the north, and Monterey to the south, via Santa Cruz, Capitola, Aptos, and Watsonville. Within much of Santa Cruz County, it is oriented in an east-west alignment, although the interregional alignment of Highway 1 is designated north-south. In the vicinity of the project, it is a four-lane freeway west of 41st Avenue and east of the Porter Street-Bay Avenue interchange, and a four-lane freeway with auxiliary lanes in each direction between 41st Avenue and Porter Street-Bay Avenue. The speed limit on Highway 1 is 65 miles per hour (MPH).

Capitola Road is a four-lane east-west arterial west of 45th Avenue, and a two-lane roadway to the east, with a posted speed limit of 25 MPH. Bike lanes are currently provided on both sides of Capitola Road

Jade Street is a two-lane east-west local street which runs between 41st Avenue to the west, and 45th Avenue to the east. Jade Street, west of 41st Avenue, becomes Brommer Street, and east of 45th Avenue, becomes Topaz Street. Parking is currently provided on the north side and portions of the south side of Jade Street. Bike lanes are currently provided along both sides of the street. The posted speed limit along Jade Street is 25 MPH.

Topaz Street is a two-lane east-west local street which runs between 45th Avenue to the west, and 49th Avenue to the east. On street parking is currently allowed along both sides of Topaz Street. The posted speed limit is 25 MPH.

41st Avenue is a north-south arterial street within the City of Capitola and central Santa Cruz County. It is a six-lane divided roadway between Highway 1 and Capitola Road, a four-lane divided roadway between Capitola Road and Brommer Street – Jade Street, and transitions to a two-lane roadway south of Brommer Street – Jade Street. Bike lanes are currently provided on both sides of 41st Avenue. The speed limit on 41st Avenue north of Brommer Street – Jade Street is 35 MPH, and 25 MPH to the south.

45th Avenue is a two-lane north-south local street which runs between Capitola Road to the north, and Jade Street – Topaz Street to the South. Parking is currently provided on both sides of 45th Avenue. A series of three speed humps are located along 45th Avenue at

an approximate spacing of 300 feet. The posted speed limit along 45th Avenue is 25 MPH.

47th Avenue is a two-lane north-south local street which runs between Grace Street to the north, and Portola Drive to the South. Parking is currently provided on the west side of 47th Avenue, between Topaz Street and Portola Drive. Several speed bumps are located along 47th Avenue, south of Capitola Road. An at grade railroad crossing is located on 47th Avenue, north of the 47th Avenue / Portola Street intersection. The speed limit along 47th Avenue is 25 MPH.

2.2 Existing Traffic Data

Traffic volumes at all intersections were collected by Higgins Associates – A Division of Hatch Mott MacDonald on June 3, 2008. Intersection traffic counts were collected during the weekday AM (i.e. 7:00 – 9:00am), Mid-Afternoon (i.e. 1:30 – 3:30), and PM (i.e. 4:00 – 6:00pm) peak hours at the existing study intersections. June 3rd was a local election day for which the Capitola Community Center was a polling location. Because of the election, traffic volumes were re-collected at the 45th Avenue / Jade Street – Topaz Street intersection on June 11, 2008. These volumes were compared to those previously collected, and determined to have insignificant variation. Therefore, the traffic volumes collected on June 3, 2008, were used to establish existing traffic flow conditions. The existing peak hour traffic volumes are presented on **Exhibit 4.**

2.3 Existing Conditions Intersection Operations

2.3.1 Intersection Operations

Intersection levels of service under existing conditions are summarized on **Exhibit 5**. Recommended intersection improvements are summarized on **Exhibit 6**. All of the study intersections operate at acceptable levels of service except for the 45th Avenue / Capitola Road intersection. This intersection currently operates at LOS D during the Mid-Afternoon peak hour and LOS E during the PM peak hour.

The LOS calculations can be found in ***Appendix B***.

2.3.2 Intersection Mitigations

45th Avenue / Capitola Road

The 45th Avenue / Capitola Road intersection operates at LOS B during the AM peak hour, LOS D during the Mid-Afternoon peak hour, and LOS E during the PM peak hour.

The 45th Avenue / Capitola Road intersection is currently all-way stop controlled, and operating deficiently. Under Existing Conditions, the PM peak hour signal warrant is met. It is therefore, recommended that this intersection be signalized. Signalization is a more effective control of traffic at the intersection due to the through traffic along

Capitola Road being significantly higher than the approaching traffic volume on 45th Avenue. This improvement would improve the intersection traffic operation to an LOS A for the AM, Mid-Afternoon and PM peak hours.

Peak hour signal warrants are included in ***Appendix G***.

3 EXISTING PLUS PROJECT (PHASE 1) TRAFFIC CONDITIONS

This section describes project trip generation, project trip distribution and assignment, Existing Plus Project (Phase 1) operating conditions, and potential project impacts for Phase 1.

3.1 Project Trip Generation (Phase 1)

SUESD proposes to construct Opal Cliffs School, a new pre-school / elementary school, which is to be implemented in two phases. The first phase includes a pre-school program, Kindergarten and 1st grade classrooms, as well as administrative offices. The anticipated student population for Phase 1 is 40 preschool students and 40 elementary school students, for a total student body of 80.

Exhibit 7A contains the trip generation estimate for Phase 1 of the study project which was estimated using ITE's *Trip Generation*, 7th Edition. Trip generation rates published in this manual for an elementary school are based on data obtained from the 1970's to the 2000's.In that era most of the children walked to school. Bus service was usually provided to students living beyond a specified distance from the school. These rates tend to be low compared to the trips generated by elementary schools today, due to the time frame in which the data was collected, and the trend from many children walking to school in previous decades, toward the majority of children today being driven to school. Additionally, SUESD will not be providing bus service, except for special needs children. Therefore, a factor of two was applied to the ITE trip generation rates to obtain rates that are more comparable to the number of trips generated by today's elementary schools.

Phase 1 of the study project would generate 282 weekday daily trips; with 67 trips (37 in, 30 out) occurring during the weekday AM peak hour, 48 trips (22 in, 26 out) occurring during the MID Afternoon peak hour, and 44 trips (22 in, 22 out) occurring during the PM peak hour.

3.2 Project Trip Distribution and Assignment (Phase 1)

The distribution of project trips was determined using the number of housing units and their location within the proposed Opal Cliffs School attendance boundary area, and our knowledge of the local street system within the City of Capitola. It was assumed that each housing unit would have an equal likelihood of having a student enrolled at the proposed school. The number of housing units and their location within the proposed school attendance boundary (Transportation Area Zone, TAZ) were obtained from the AMBAG Regional Travel Demand Model. **Exhibit 7B** illustrates the project trip distribution. The project trips for Phase 1 are shown in **Exhibit 8A**. The project trips were added to the existing traffic volumes to create Existing Plus Project (Phase 1) traffic volumes. These traffic volumes are shown on **Exhibit 8B.**

The SUESD boundary map is included as **Exhibit 11A**. The proposed Opal Cliff School attendance boundary map is included as **Exhibit 11B**. The attendance boundary used in this TIA is an estimated boundary provided by the applicant.

3.3 Existing Plus Project (Phase 1) Condition Intersection Operations

3.3.1 Intersection Operations

Intersection levels of service under Existing Plus Project (Phase 1) conditions are summarized on **Exhibit 5**. Recommended intersection improvements are summarized on **Exhibit 6.** All of the study intersections would operate at acceptable levels of service except for the 45th Avenue / Capitola Road intersection. This intersection operates at LOS D during the MID Afternoon peak hour and LOS E during the PM peak hour.

The LOS calculations can be found in ***Appendix C***.

3.3.2 Intersection Mitigations

45th Avenue / Capitola Road

Under Existing Plus Project (Phase 1) conditions, the 45th Avenue / Capitola Road intersection operates at a deficient level, and the PM peak hour signal warrant is met. The intersection operates at LOS D during the Mid-Afternoon peak hour and LOS E during the PM peak hour. The project will add traffic to the 45th Avenue / Capitola Road intersection. However, the signalization at this intersection discussed under Existing Conditions would be sufficient to mitigate the intersection to acceptable levels of service. The project would be responsible for its share in the cost of the implementation of this improvement.

Signalization is a more effective control of traffic at the intersection due to the through traffic along Capitola Road being significantly higher than the approaching traffic volume on 45th Avenue. Additionally, the construction of Phase 1 of the Opal Cliffs School is anticipated to increase the pedestrian traffic at this intersection. Pedestrians attempting to cross the intersection would be better accommodated by a signalized intersection rather than the existing all-way stop control.

Peak hour signal warrants are included in ***Appendix G***.

4 EXISTING PLUS PROJECT (PHASE 2) TRAFFIC CONDITIONS

This section describes project trip generation, project trip distribution and assignment, Existing Plus Project (Phase 2) operating conditions, and potential project impacts for Phase 2.

4.1 Projects Trip Generation (Phase 2)

Phase 2 includes the construction of additional classrooms and a multi-purpose room. Additionally, Phase 2 improvements include replacing the soccer field with a fenced playground, and the removal of the existing basketball courts. The existing baseball / softball field on the western portion of the site could potentially be converted to a dual-use field to accommodate soccer and baseball leagues. All other park facilities are to remain and operate as they would under Phase 1 conditions. The estimated student population for Phase 2 is 80 preschool students and 320 elementary school students, for a total student body of 400.

The proposed parking layout plan for Phase 2 improvements is included as **Exhibit 2A. Exhibit 7A** contains the trip generation estimate for Phase 2 of the study project.

Phase 2 of the study project would generate 1,184 weekday daily trips; with 335 trips (184 in, 151 out) occurring during the weekday AM peak hour, 232 trips (105 in, 126 out) occurring during the Mid-Afternoon peak hour, and 161 trips (81 in, 80 out) occurring during the PM peak hour.

4.2 Project Trip Distribution and Assignment (Phase 2)

The distribution of project trips is the same as Phase 1, which was determined using the number of housing units and their location within the proposed Opal Cliffs School attendance boundary area, and our knowledge of the local street system within the City of Capitola. It was assumed that each housing unit within the attendance boundary would have an equal likelihood of having a student enrolled at the proposed school. The number of housing units and their location within the proposed school attendance boundary were obtained from the land use forecast information from within the AMBAG Regional Travel Demand Model. **Exhibit 7B** illustrates the project trip distribution. The project trips for Phase 2 are shown in **Exhibit 9A**. The project trips were added to the existing traffic volumes to create Existing Plus Project (Phase 2) traffic volumes. These traffic volumes are shown on **Exhibit 9B.**

The SUESD boundary map is included as **Exhibit 11A**. The proposed Opal Cliff School attendance boundary map is included as **Exhibit 11B**. The attendance boundary used in this TIA is an estimated boundary provided by the applicant.

4.3 Existing Plus Project (Phase 2) Condition Intersection Operations

4.3.1 Intersection Operations

Intersection levels of service under Existing Plus Project (Phase 2) conditions are summarized on **Exhibit 5**. Recommended intersection improvements are summarized on **Exhibit 6.** All of the study intersections would operate at acceptable levels of service except for the 45th Avenue / Capitola Road intersection. This intersection operates at LOS D during the Mid-Afternoon peak hour and LOS E during the PM peak hour.

The LOS calculations can be found in ***Appendix D***.

4.3.2 Intersection Mitigations

45th Avenue / Capitola Road

Under Existing Plus Project (Phase 2) conditions, the 45th Avenue / Capitola Road intersection operates at a deficient level, and peak hour signal warrants are met during the Mid-Afternoon peak hour and the PM peak hour. The intersection operates at LOS D during the Mid-Afternoon peak hour and LOS E during the PM peak hour. Phase 2 of the project will add traffic to the 45th Avenue / Capitola Road intersection. However, the signalization at this intersection discussed under Existing Conditions would be sufficient to mitigate the intersection to acceptable levels of service. The project would be responsible for its share in the cost of the implementation of this improvement.

Signalization is a more effective control of traffic at the intersection due to the through traffic along Capitola Road being significantly higher than the approaching traffic volume on 45th Avenue. Additionally, the construction of Phase 2 of the Opal Cliffs School is anticipated to increase the pedestrian traffic at this intersection. Pedestrians attempting to cross the intersection would be better accommodated by a signalized intersection rather than the existing all-way stop control.

Peak hour signal warrants are included in ***Appendix G***.

5 CUMULATIVE PLUS PROJECT (PHASE 2) TRAFFIC CONDITIONS (YEAR 2015)

This section describes Cumulative Plus Project (Phase 2) traffic conditions.

5.1 Cumulative Buildout Growth

Traffic volumes on the study road network are expected to increase over time, as new projects are developed within the Capitola area. Future traffic in Capitola will primarily increase as a result of growth in the County. To account for the additional traffic that will be added to the road network from cumulative projects, existing peak hour volumes were increased using growth rates established by the Association of Monterey Bay Area Governments (AMBAG) forecasts and as presented in the City of Capitola General Plan. Traffic volumes under cumulative conditions were estimated by applying an annual growth rate of 1.11 percent to the existing volumes. The rate accounts for expected growth as outlined by the General Plan Buildout Year of 2015. Phase 2 Project trips were then added to obtain Cumulative Plus Project (Phase 2) traffic conditions. The project trips for Phase 2 are shown in **Exhibit 9A**. Cumulative Plus Project (Phase 2) traffic volumes are shown on **Exhibit 10.**

5.2 Cumulative Plus Project (Phase 2) Condition Intersection Operations

5.2.1 Intersection Operations

Intersection levels of service under Cumulative Plus Project (Phase 2) conditions are summarized on **Exhibit 5**. Recommended intersection improvements are summarized on **Exhibit 6.** All of the study intersections would operate at acceptable levels of service except for the 45th Avenue / Capitola Road intersection. This intersection operates at LOS E during the Mid-Afternoon peak hour and LOS F during the PM peak hour.

The LOS calculations can be found in ***Appendix E***.

5.2.2 Intersection Mitigations

45th Avenue / Capitola Road

Under Cumulative Plus Project (Phase 2) conditions, the 45th Avenue / Capitola Road intersection operates at a deficient level, and peak hour signal warrants are met during the Mid-Afternoon peak hour and the PM peak hour. The intersection operates at LOS E during the Mid-Afternoon peak hour and LOS F during the PM peak hour. Phase 2 of the project will add traffic to the 45th Avenue / Capitola Road intersection. However, the signalization at this intersection discussed under Existing Conditions would be sufficient to mitigate the intersection to acceptable levels of service. The project would be responsible for its share in the cost of the implementation of this improvement.

Signalization is a more effective control of traffic at the intersection due to the through traffic along Capitola Road being significantly higher than the approaching traffic volume on 45th Avenue. Additionally, the construction of Phase 2 of the Opal Cliffs School is anticipated to increase the pedestrian traffic at this intersection. Pedestrians attempting to cross the intersection would be better accommodated by a signalized intersection rather than the existing all-way stop control.

Peak hour signal warrants are included in ***Appendix G***.

6 NEIGHBORHOOD QUALITY OF LIFE

Several studies have been made regarding the effects of traffic on the quality-of-life in residential neighborhoods. The variables affecting these impacts include traffic volumes, type, or makeup, of traffic (i.e. passenger cars, trucks, motorcycles, emergency vehicles, etc.), traffic speed, perception of through traffic as a percentage of total traffic, adequacy of street alignment (i.e. horizontal and vertical curvature), accident experience, on-street parking, residential dwelling set backs from the street, pedestrian traffic, and street pavement conditions (which would add to traffic noise as the pavement deteriorates). Other factors that may be a contributor to neighborhood nuisance levels include socio-economic status of the neighborhood, and expectations of the residents regarding traffic volumes.

The Traffic Infusion on Residential Environment (TIRE) index is a measure of the impact of traffic on residents along a street. The TIRE index scale ranges from 0 to 5 depending on daily traffic volume. An index of 0 represents the least infusion of traffic and 5 the greatest, and thereby, the poorest residential environment. Typical street types associated with the various index levels are shown on the TIRE index chart included as ***Appendix F.***

TIRE is based on the theory that a given increase in traffic volume has a greater impact on residential environment along a residential street with a low traffic volume than along a street with a high pre-existing volume. TIRE effects are separate from noise and air pollution impacts. TIRE represents the effect of traffic on the safety and comfort of human activities such as walking, cycling, and playing on or near a street and on the freedom to maneuver vehicles in and out of residential driveways.

The TIRE Index Table gives TIRE values associated with various daily traffic volume ranges. A street with a TIRE value of three or greater is considered to function primarily as a traffic street and exhibit significantly impaired residential environment. The projected difference between a pre and post project TIRE value in the predicted impact of the project on residential environment. Any projected change of 0.1 or greater would be noticeable to residents.

The neighborhood quality of life under Existing Plus Project (Phase 1) and Existing Plus Project (Phase 2) conditions using the TIRE index was analyzed for the following four street segments:

1. Jade Street between 41st Avenue and 45th Avenue
2. Topaz Street between 45th Avenue and 47th Avenue
3. 45th Avenue between Capitola Road and Jade Street
4. 47th Avenue between Topaz Street and Portola Drive

The Average Daily Traffic (ADT) and the associated TIRE index for each of the study segments are included as **Exhibit 12**.

Under Existing Plus Project (Phase 1) conditions, all study segments' TIRE index values remain unchanged. According to the TIRE index methodology, the increase in traffic volume along the study segments, due to phase 1 of the project, would not be noticeable to residents.

Under Existing Plus Project (Phase 2) conditions, three of the four study segments' TIRE index values increase by 0.1 or greater. The index value for Jade Street increases from 3.7 under Existing Conditions to 3.8 under Existing Plus Project (Phase 2) Conditions. The index value for Topaz Street, between 45th Avenue and 47th Avenue, increases from 3.2 under Existing Conditions to 3.3 under Existing Plus Project (Phase 2) Conditions. The index value for 45th Avenue, between Capitola Road and Jade Street – Topaz Street, increases from 3.5 under Existing Conditions to 3.6 under Existing Plus Project (Phase 2) Conditions. The effect of the project traffic would therefore be noticeable to the residents along these roadway segments. However, all study roadway segments have an existing TIRE index of 3.0 or greater, meaning that they operate as collector streets under current conditions, and the impact of the project on the neighborhood quality of like is not expected to be great.

Under Cumulative Plus Project (Phase 2) conditions, the TIRE index values for the study segments along Jade Street, Topaz Street, and 45th Avenue remain unchanged from Existing Plus Project (Phase 2) conditions. The TIRE index value for 47th Avenue, between Topaz Street and Portola Drive increases from 3.4 under Existing Plus Project (Phase 2) conditions to 3.5 under Cumulative Plus Project (Phase 2) conditions.

7 EVALUATION OF PROJECT SITE PLAN

7.1 Vehicle Access and Internal Circulation

The project will have one driveway at the 45th Avenue / Jade Street – Topaz Street intersection. This is an existing all-way stop controlled intersection, and would operate acceptably through Existing Plus Project (Phase 2) Conditions.

The existing Community Center parking area has one driveway entrance off of Jade Street, east of 45th Avenue, and is oriented parallel to Jade Street. This parking area allows one way travel towards its exit, which intersects with the proposed school parking lot access road immediately south of the 45th Avenue / Jade Street intersection.

The project site plan for Phase 1 indicates the construction of additional paved parking area, with landscape islands. The circulation of vehicles is one-way in a counter-clockwise pattern for the majority of the parking area. At the entrance a small planting area is proposed, separating entering and exiting vehicles.

The project site plan for Phase 2 indicates that, in addition to the improvements proposed under Phase 1, an extended student pick-up / drop-off area is proposed to be constructed. It is noted that the proposed drop-off / pick-up area is shown to be constructed around the existing restroom facilities for the park. It is recommended that at least one crosswalk be installed for pedestrian access to the existing restrooms facilities.

7.2 Pedestrian Access

The California MUTCD states that a marked pedestrian crosswalk may be yellow if the nearest point of the crosswalk is not more than 600 feet from a school building or school grounds. Additionally, a marked crosswalk may be yellow if the nearest point of the crosswalk is not more than 2,800 feet from a school building or school grounds and there are no intervening crosswalks other than those contiguous to the school grounds, and it appears that the facts and circumstances require special marking for the protection and safety of persons attending the school. A school influence zone of 600 feet from the proposed school boundary is shown on **Exhibit 13.**

There are existing sidewalk facilities along the north side of Jade Street between 41st Avenue and 45th Avenue, on the south side of Jade Street along the Community Center parking lot frontage, and the west side of 45th Avenue between Capitola Road and Jade Street – Topaz Street. Portions of the east side of 45th Avenue have existing sidewalk facilities; however the facilities are not continuous along the entire segment. No sidewalk facilities exist on either side of the Topaz Street study segment, nor along either side of the 47th Avenue study segment. There is however, a dirt pathway along the west side of 47th Avenue between Topaz Street and Portola Drive.

School pedestrian facilities should be confirmed with representatives of the Soquel Union Elementary School District. It is recommended that a School Route Plan Map, in

accordance with the *Caltrans Traffic Manual*, be developed prior to finalizing the locations of the pedestrian facilities.

The project frontage along 47th Avenue lacks sidewalk, although there is an existing dirt path. The project site plan would add a sidewalk along the project frontage portion of 47th Avenue. The project site plan also proposes a walkway between the southern boundary of the project and the existing soccer field.

Phase 2 of the project would extend the sidewalk along 47th Avenue further to the south.

7.3 On-Site Parking Evaluation

Both Phase 1 and Phase 2 improvements include improvements to the existing parking area located east of the Community Center. Phase 1 improvements include the construction of additional paved parking area, with landscape islands. Phase 1 improvements would increase the marked parking stalls from 26 existing stalls to 46 stalls, including 2 ADA accessible stalls.

Phase 2 includes additional improvements to the on-site parking area to accommodate an internal student drop-off / pick-up area. The construction of the new drop-off / pick-up area would reduce the number of parking stalls from 46 under Phase 1 conditions to 44 under Phase 2 conditions. While the Phase 2 improvements reduce the overall number of parking stalls by 2, the capacity of the parking lot is increased due to the student drop-off / pick-up zone, which is proposed to be approximately 250 feet in length. The project site plan could potentially accommodate additional 90 degree parking stalls along the west side of the parking lot, north of the student drop-off / pick-up zone entrance.

The existing parking area east of the Community Center is currently utilized by visitors to the park. With the exception of the community garden, the existing park facilities are to remain and operate as they do under existing conditions. The shared use of the acreage between the park facilities and the proposed school grounds, results in a close proximity of the park facilities and the proposed school. This close proximity could create the potential for visitors to one facility parking in the parking area for the other facility. No improvements to the Community Center parking area are proposed.

7.4 Student Drop-Off / Pick-Up Operations

Student drop-off / pick up zones are an important part of school design. The provision of adequate zones minimizes illegal parking, the blocking of school driveways, and queue spillback from the site onto adjacent roadways.

Student drop-off / pick-up should occur in designated and clearly marked zones in order to minimize the potential for pedestrian / vehicle conflicts. Vehicular circulation of student drop-off / pick-up zones should be one-way in a counter-clockwise direction. Students should be loaded and unloaded directly to the curb/sidewalk and should not be

required to cross a vehicular path before entering the school campus. Safety personnel should be present during drop-off / pick-up operations to assist children to and from their vehicles.

Several studies regarding the design and operation of student drop-off / pick-up zones have been performed. Providing adequate on-site stacking length is important to traffic safety and operations within and around the school site. A study from Nevada reported the required length of a drop-off / pick-up area for a school shall be at least five car lengths, or one car length for every 50 students, whichever results in the greater number (with no more than 12 car lengths required at 25 feet per car).[1] According to a study of Texas elementary and middle schools, the recommended on-site stacking length for an elementary school with a student population of less than 500, is 400 to 750 feet.[1]

The site plan for Phase 1 of the project indicates a student drop-off / pick-up zone along the western perimeter of the parking lot as well as at the southeast corner of the parking lot. A striped walkway is provided that connects the sidewalk and drop-off / pick-up zone along the western perimeter to the north end of the drop-off / pick-up zone at the southeast corner. This walkway would allow students dropped off on the west side of the parking lot, a delineated and more direct route to the school campus. The length of the designated drop-off / pick-up zone is approximately 180 feet. During peak drop-off / pick-up times, it is anticipated that the length of the drop-off / pick-up zone, as proposed would be sufficient for Phase 1. A minimum 24 feet of clear backup distance is recommended for perpendicular parking.

In addition to the drop-off / pick-up zones constructed under Phase 1, an exclusive student drop-off / pick-up lane, approximately 250 feet in length, is proposed as part of Phase 2 of the project. This lane would be accessed at the south side of the parking lot, loop around the existing restroom facilities, and then merge back to the parking lot. It is recommended that the travel lane be wide enough to accommodate a pick-up / drop-off lane as well as a through lane for vehicles to pull out into and circulate through the drop-off / pick-up area. A distance of approximately 80 feet would be available for stacking vehicles waiting to enter the drop-off pick-up zone, prior to those vehicles backing up into the 45th Avenue / Jade Street - Topaz Street intersection. During peak drop-off / pick-up times, it is anticipated that the length of the drop-off / pick-up zone, as proposed for Phase 2 would be sufficient.

1. Traffic Operations and Safety at Schools: Recommended Guidelines, Texas Transportation Institute, 2004

8 RAILROAD GRADE CROSSING CONSIDERATIONS

There is an existing railroad crossing located on 47th Avenue north of Portola Drive. Existing warning devices at this locating include the conventional railroad crossbuck and automatic crossing gates used to control the vehicular grade crossing. At-grade crossings present inherent hazards to the traveling public. The planned development of the Opal Cliffs School is likely to increase vehicular traffic, as well as pedestrian and bicycle activity at the railroad crossing.

The increase in vehicular traffic along 47th Avenue could create operational problems at the railroad crossing due to southbound vehicles queuing back across the tracks. Southbound 47th Avenue is stop controlled at Portola Drive with approximately two vehicle lengths of storage south of the railroad crossing. The Federal Highway Administration (FHWA) has published a Notice of Proposed Amendment (NPA) to the Manual on Uniform Traffic Control Devices (MUTCD) 2003 Edition. It contains a new signal warrant for intersections located near railroads. Although the warrant will not be official until the next publication of the MUTCD, it is still being implemented by the Public Utilities Commission (PUC) on a case by case basis.

The train arrival times are unknown; therefore, the highest traffic volume hour of the day was used to determine whether the signal warrant is met. Additionally, the minor street approach volume may be multiplied by up to three adjustment factors based upon the average number of trains per day, the percentage of high occupancy buses on the minor street approach, and the percentage of tractor trailer truck on the minor street approach. Based upon conversations with Union Pacific Railroad (UPRR) staff, a daily train count of two was used. It was assumed that the percentage of high-occupancy buses and tractor trailer trucks on the minor street approach is 0% and less than 2.5% respectively.

Based upon these assumptions, the signal warrant for an intersection near a rail grade crossing would be met under all scenarios analyzed which include Existing, Existing Plus Project (Phase 1), Existing Plus Project (Phase 2), and Cumulative Plus Project (Phase 2). Intersection near railroad grade crossing signal warrants are included in ***Appendix H.***

Signalization of the intersection would allow vehicles to clear the intersection when a train is approaching. Alternatively, the stop controls at the intersection could be reassigned to make the 47th Avenue approach a non-stopping approach. Coordination with the PUC and UPRR will be required for determining intersection control and pedestrian crossing design. Impacts due to the Portola Drive / Opal Cliff Drive intersection, which is all-way stop controlled and located approximately 160 feet to the east, should be considered when determining the intersection control at the 47th Avenue / Portola Drive intersection.

Due to the location of the railroad crossing within the Opal Cliffs School 600 foot zone of influence, improvements to the pedestrian facilities at the crossing should be considered. Improvements should better warn the public of potential train-pedestrian conflicts, and may include active warning devices, pedestrian channelization treatments, and/or swing

gates.

Active warning devices may include both visual and audio warning devices such as flashing lights and bells. Channelization of pedestrians can be accomplished in a variety of ways including paved sidewalks or paths; delineation through the use of changes in pavement texture, materials, landscaping, or striping indicating the limits of the pedestrian pathway; and barriers including fencing or railing. Swing gates are gravity operated gates that must be pulled toward an approaching pedestrian in order to enter the trackway area.

An appropriate design of a pedestrian at-grade railroad crossing should be based on pedestrian activity, pedestrian accident history, train operations, sight distance and geometry, among other factors. Parents and students should be educated about the potential hazard area.

9 REFERENCES

9.1 List of References

1. ITE's *Trip Generation*, 7th Edition, 2003
2. AMBAG Model

9.2 List of Contacts

1. Soquel Union Elementary School District, applicant
2. Weston Miles Architects, Inc., architect
3. EMC Planning Group

SOURCE: THOMAS GUIDE

EXHIBIT 1
PROJECT LOCATION MAP

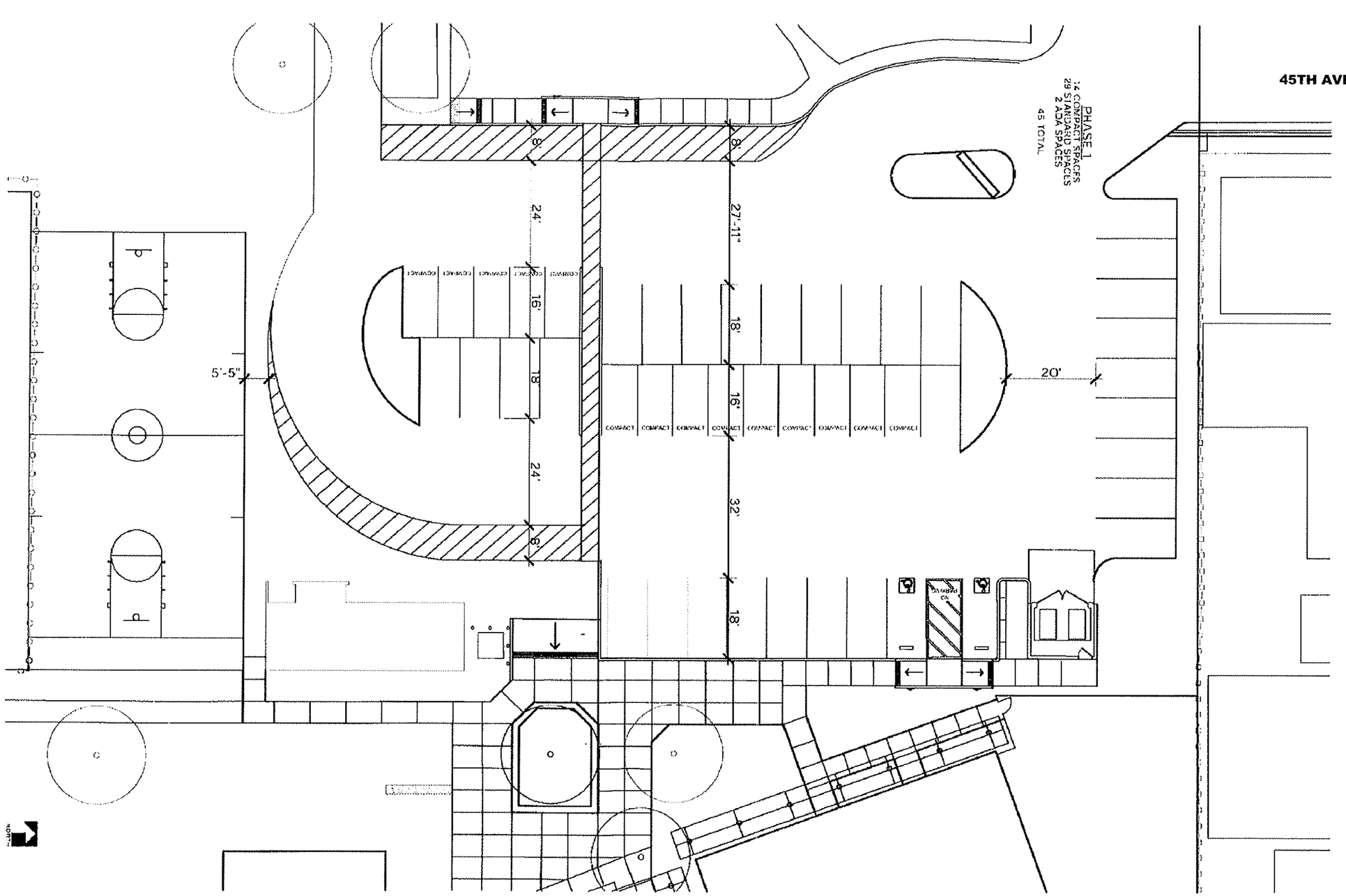


EXHIBIT 2A
PROPOSED PARKING LAYOUT
PHASE 1

SOURCE: WESTON MILES ARCHITECTS, AUGUST 2008.

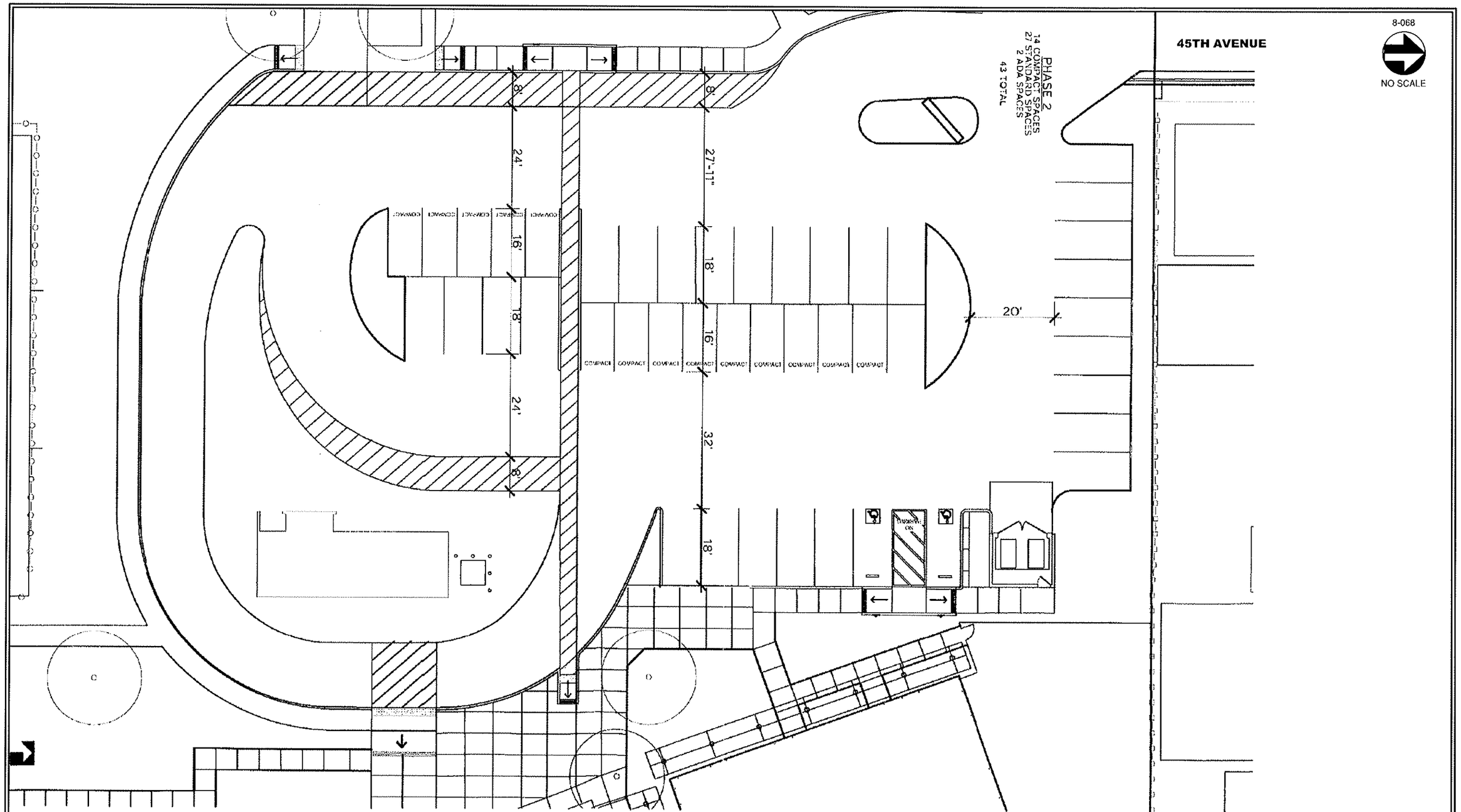


EXHIBIT 2B
PROPOSED PARKING LAYOUT
PHASE 2

SOURCE: WESTON MILES ARCHITECTS, AUGUST 2008.

HIGGINS ASSOCIATES – A Division of Hatch Mott MacDonald

Drawing: J:\2008\051-100\8-068\8-068 Ex-1-3 Location, Site, Intersections.dwg
Layout: EX-2B PHASE 2 Dec 12, 2008, 8:52am

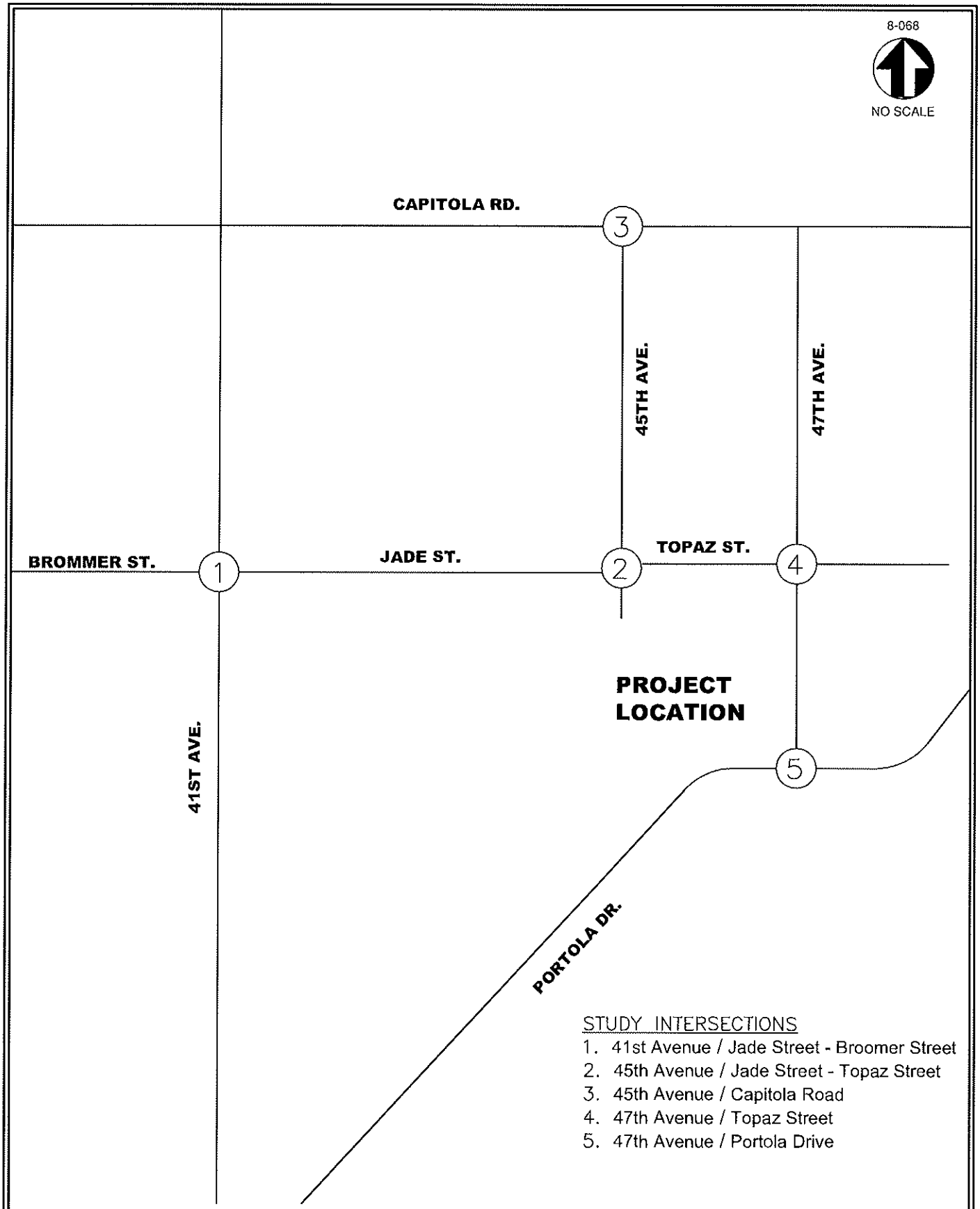


EXHIBIT 3
STUDY INTERSECTIONS

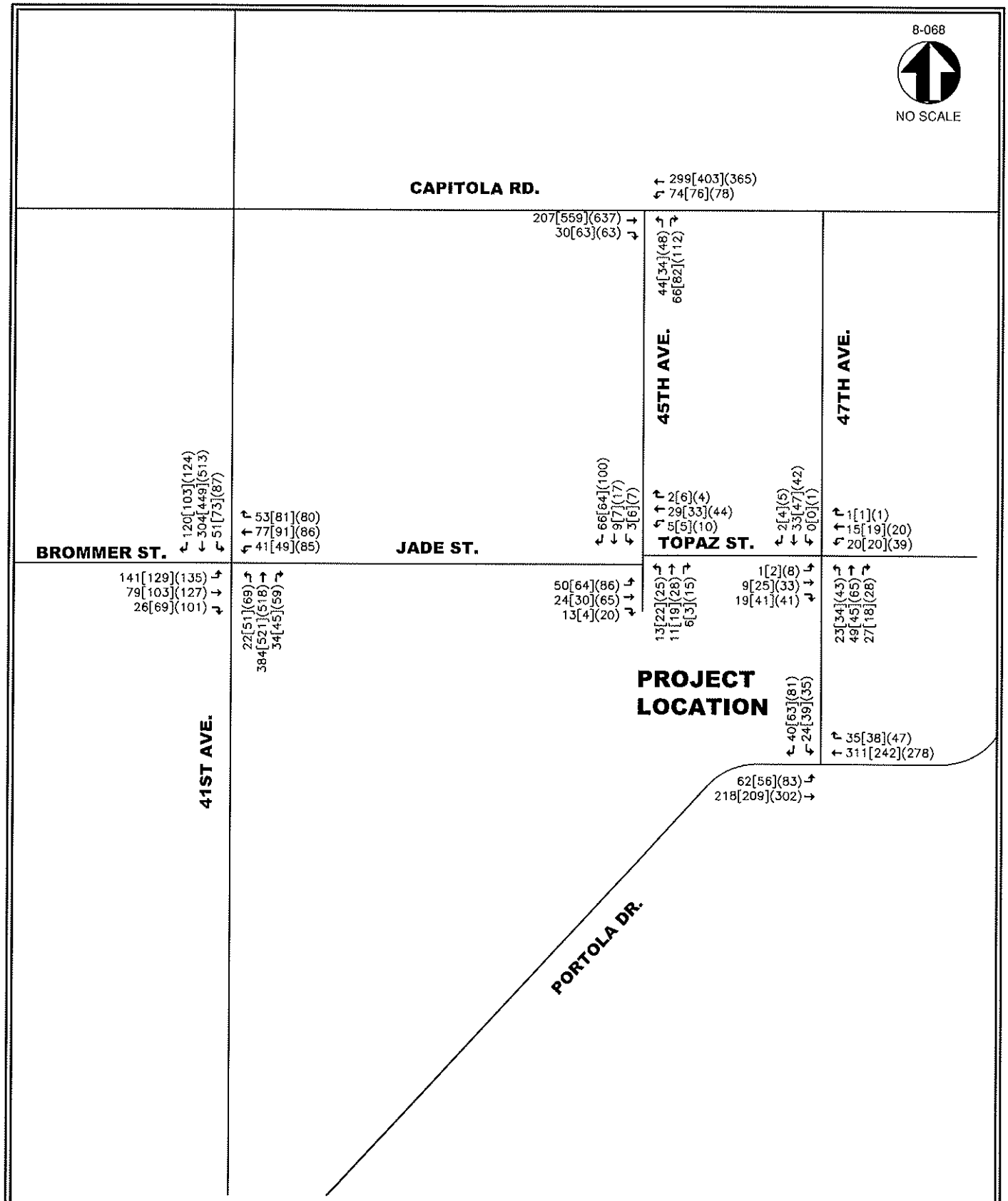


EXHIBIT 4
EXISTING CONDITIONS
AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions						Existing Plus Project (Phase 1) Conditions						Existing Plus Project (Phase 2) Conditions						Cumulative Plus Project (Phase 2) Conditions					
						AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	41st Avenue	Jade Street - Brommer St.	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L/T, 1-R WB 1-L/T, 1-R	Signal	C	**21.9**	**C**	**22.2**	**C**	**23.7**	**C**	**22.1**	**C**	**22.3**	**C**	**23.8**	**C**	**22.8**	**C**	**22.8**	**C**	**24.3**	**C**	**23.0**	**C**	**23.1**	**C**	**25.0**	**C**
2	45th Avenue	Jade Street - Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	**7.5**	**A**	**7.7**	**A**	**8.3**	**A**	**7.7**	**A**	**7.9**	**A**	**8.6**	**A**	**9.1**	**A**	**9.0**	**A**	**9.2**	**A**	**9.0**	**A**	**8.7**	**A**	**9.3**	**A**
3	45th Avenue	Capitola Road	NB 1-L/T/R EB 1-T, 1-R WB 1-L/T	All-Way Stop	C	**11.3**	**B**	**27.1**	**D**	**37.1**	**E**	**11.7**	**B**	**27.9**	**D**	**38.3**	**E**	**13.4**	**B**	**33.1**	**D**	**41.7**	**E**	**14.4**	**B**	**47.7**	**E**	**59.4**	**F**
				Mitigation: ***Signalize***		*7.7*	***A***	*6.2*	***A***	*7.8*	***A***	*8.1*	***A***	*6.7*	***A***	*8.1*	***A***	*9.7*	***A***	*8.0*	***A***	*9.0*	***A***	*9.8*	***A***	*8.2*	***A***	*9.4*	***A***
4	47th Avenue	Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	**7.5**	**A**	**7.6**	**A**	**7.8**	**A**	**7.6**	**A**	**7.6**	**A**	**7.9**	**A**	**7.9**	**A**	**7.8**	**A**	**8.0**	**A**	**7.8**	**A**	**7.9**	**A**	**8.1**	**A**
5	47th Avenue	Portola Drive	SB 1-L/T/R EB 1-L/T WB 1-T/R	Side-Street Stop (Worst Case)	C	**2.1** 14.1	**A** B	**2.7** 12.5	**A** B	**2.9** 14.6	**A** B	**2.2** 14.8	**A** B	**2.8** 12.8	**A** B	**3.0** 15.1	**A** C	**3.0** 17.6	**A** C	**3.3** 13.9	**A** B	**3.4** 16.4	**A** C	**2.8** 16.3	**A** C	**3.4** 14.9	**A** B	**3.5** 17.2	**A** C

NOTES:
L, T, R = Left, Through, Right.
NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.
Analysis performed using 2000 Highway Capacity Manual methodologies.

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions	Existing Plus Project (Phase 1) Conditions	Existing Plus Project (Phase 2) Conditions	Cumulative Plus Project (Phase 2) Conditions
1	41st Avenue	Jade Street - Brommer St.	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L/T, 1-R WB 1-L/T, 1-R	Signal	C	None Recommended	None Recommended	None Recommended	None Recommended
2	45th Avenue	Jade Street - Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	None Recommended	None Recommended	None Recommended	None Recommended
3	45th Avenue	Capitola Road	NB 1-L/T/R EB 1-T, 1-R WB 1-L/T	All-Way Stop	C	Signalize	Signalize	Signalize	Signalize
4	47th Avenue	Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	None Recommended	None Recommended	None Recommended	None Recommended
5	47th Avenue	Portola Drive	SB 1-L/T/R EB 1-L/T WB 1-T/R	Side-Street Stop (Worst Case)	C	None Recommended	None Recommended	None Recommended	None Recommended

EXHIBIT 6
RECOMMENDED INTERSECTION IMPROVEMENTS

PROJECT TRIP GENERATION

	ITE LAND USE CODE	PROJECT SIZE	WEEKDAY DAILY TRIPS	AM PEAK HOUR TOTAL PEAK HOUR	AM PEAK HOUR % OF ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	MID AFTERNOON PEAK HOUR TOTAL PEAK HOUR	MID AFTERNOON PEAK HOUR % OF ADT	MID AFTERNOON PEAK HOUR IN	MID AFTERNOON PEAK HOUR OUT	PM PEAK HOUR TOTAL PEAK HOUR	PM PEAK HOUR % OF ADT	PM PEAK HOUR IN	PM PEAK HOUR OUT
TRIP GENERATION RATES[1]															
Day Care Center (per student)[2]	565		4.48	0.82	18%	53%	47%	0.66	15%	47%	53%	0.82	18%	47%	53%
Elementary School (per student)[3,5]	520		2.58	0.84	33%	55%	45%	0.56	22%	45%	55%	0.30	12%	52%	48%
PHASE 1															
Day Care Center	565	40 students[4]	179	33	18%	18	15	26	15%	12	14	32	18%	15	17
Elementary School	520	40 students[4]	103	34	33%	19	15	22	22%	10	12	12	12%	7	5
TOTAL (PHASE 1)		**80** students[4]	**282**	**67**		**37**	**30**	**48**		**22**	**26**	**44**		**22**	**22**
PHASE 2															
Day Care Center	565	40 students[4]	179	33	18%	18	15	26	15%	12	14	33	18%	15	17
Elementary School	520	280 students[4]	723	235	33%	129	106	157	22%	71	86	84	12%	44	40
SUBTOTAL (PHASE 2)		**320** students[4]	**902**	**268**		**147**	**121**	**183**		**83**	**100**	**117**		**59**	**58**
TOTAL (PHASE 2)		**400** students[4]	**1,185**	**335**		**184**	**151**	**231**		**105**	**126**	**161**		**81**	**80**

Notes:
1. Trip generation rates published by Institute of Transportation Engineers (ITE), "Trip Generation," 7th Edition, 2003, except where otherwise noted.
2. ITE does not provide trip generation rates for a day care center during the MID Afternoon peak hour. MID Afternoon activities are assumed to be at 80% of the PM peak rate.
3. ITE does not provide trip generation rates for an elementary school during the PM street peak hour. PM activites are anticipated to operate similarly to a middle or junior high school, and thus the PM peak hour trip activity is estimated based upon ITE trip rates for a Middle School/Junior High School (Land Use #522).
4. School populations provided by project applicant and associated representatives.
5. A factor of 2 has been applied to the ITE trip generation rates for an elementary school.

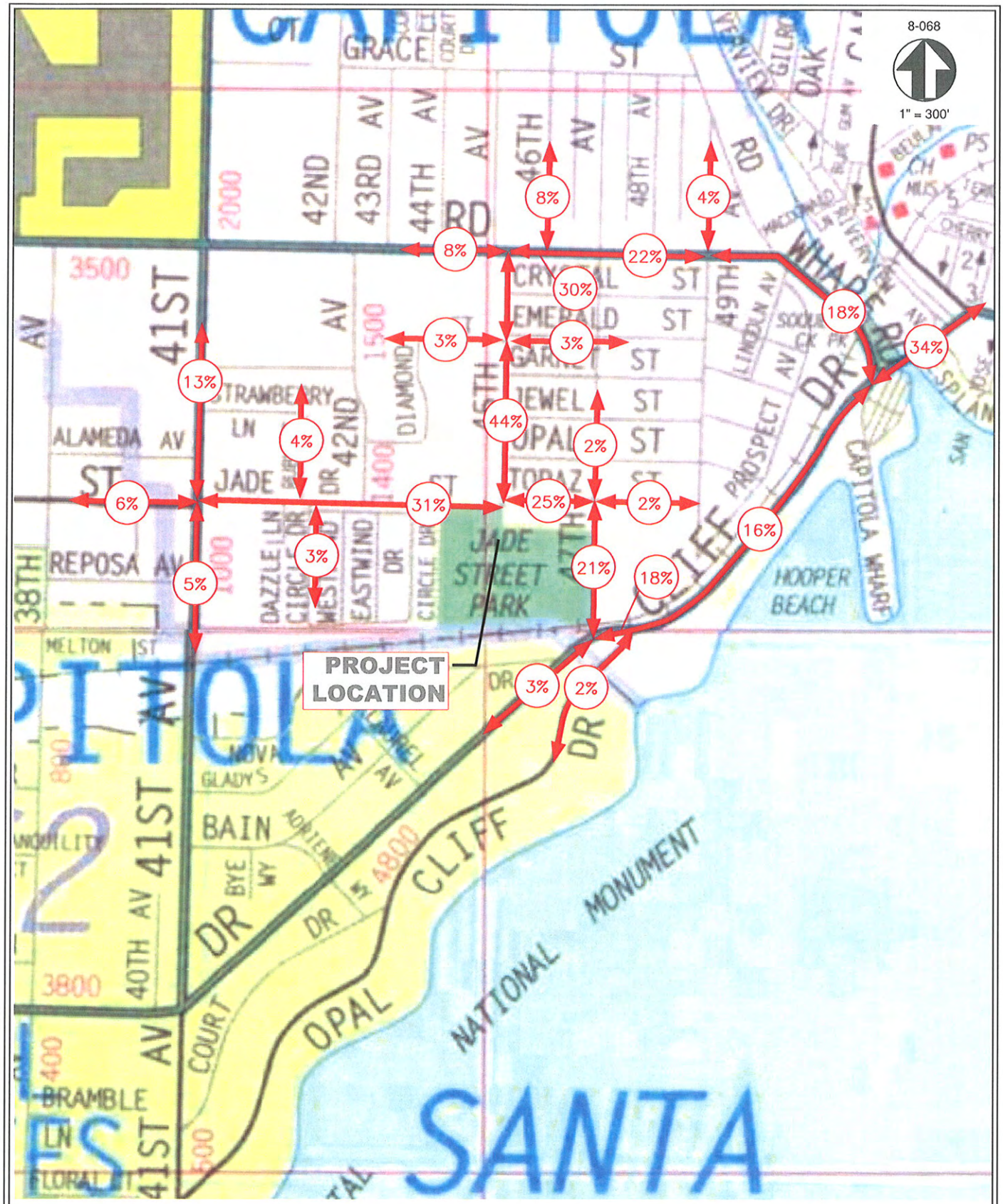


EXHIBIT 7B
PROJECT TRIP DISTRIBUTION

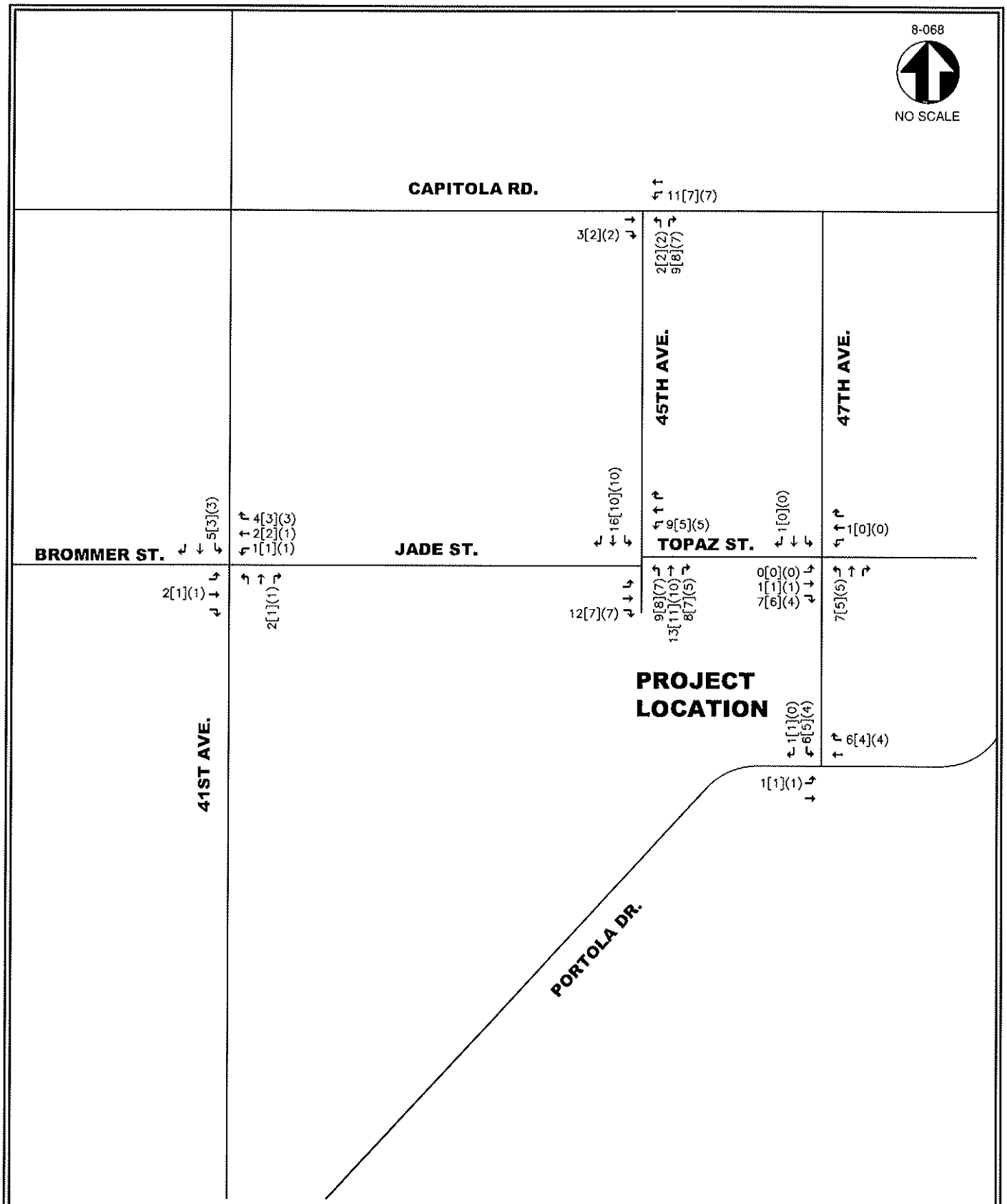


EXHIBIT 8A
PROJECT TRIP ASSIGNMENT
PHASE 1 - AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

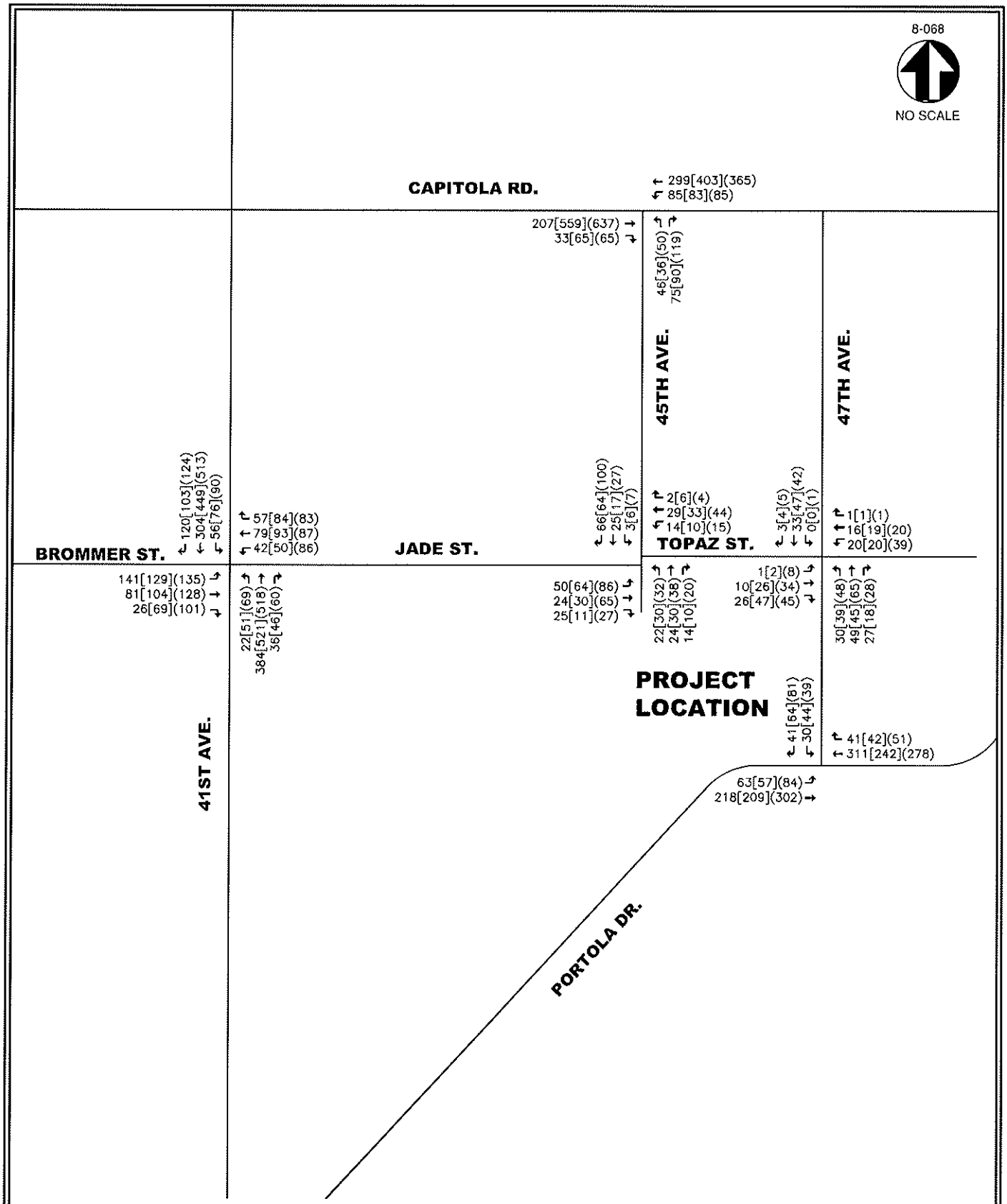


EXHIBIT 8B
EXISTING PLUS PROJECT CONDITIONS
PHASE 1 - AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

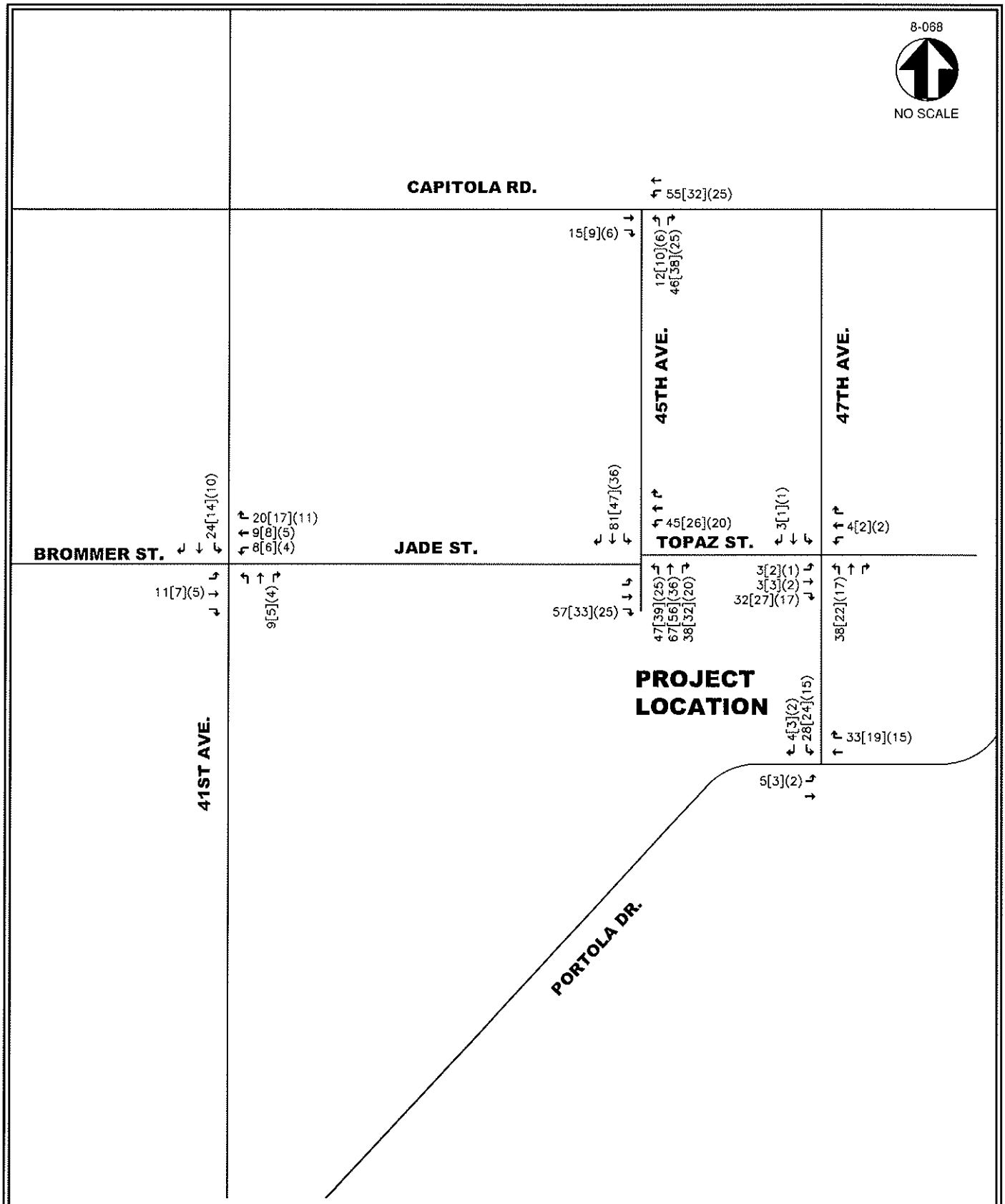


EXHIBIT 9A
PROJECT TRIP ASSIGNMENT
PHASE 2 - AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

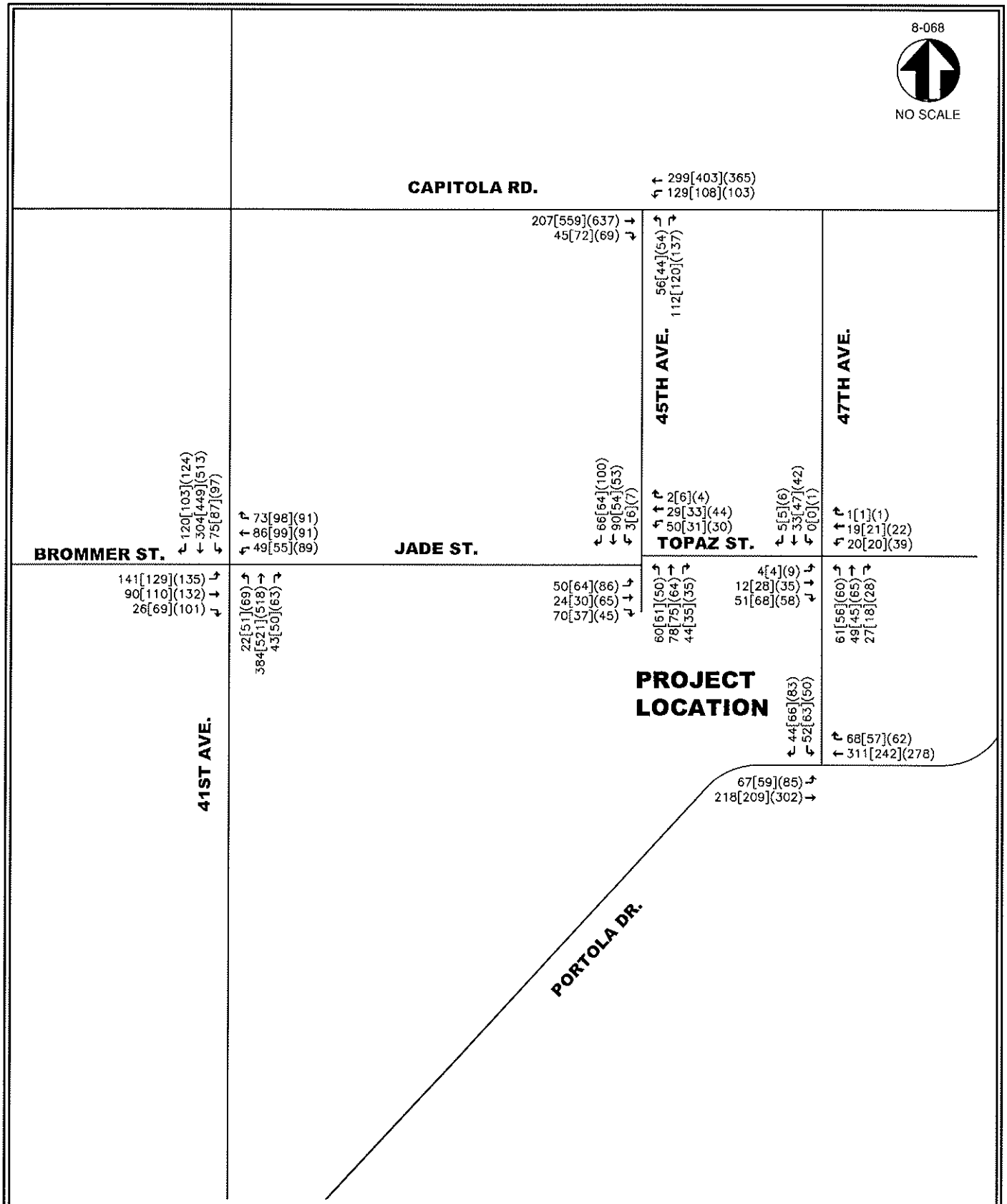


EXHIBIT 9B
EXISTING PLUS PROJECT CONDITIONS
PHASE 2 - AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

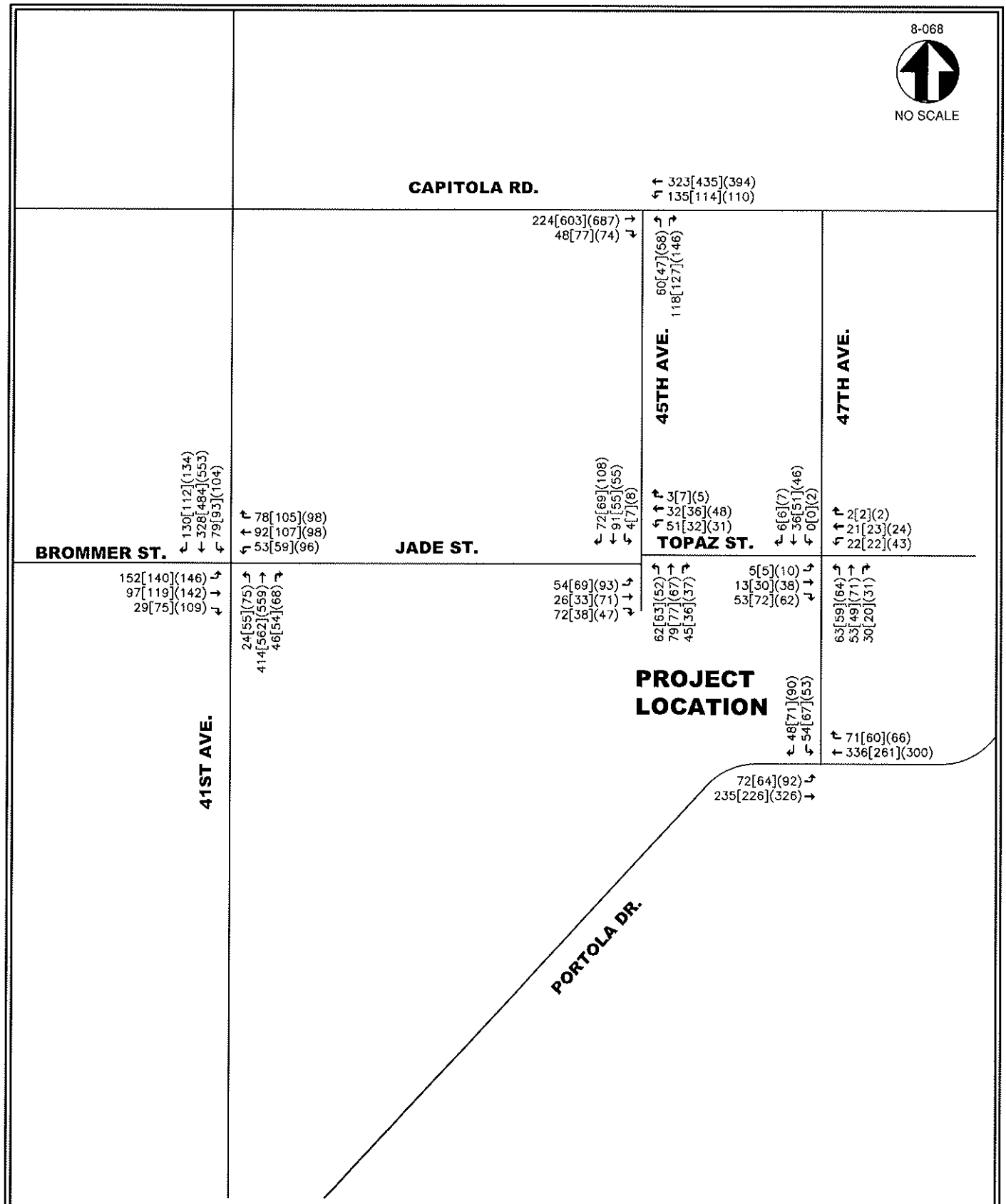


EXHIBIT 10
CUMULATIVE PLUS PROJECT CONDITIONS
PHASE 2 - AM[MID](PM) PEAK-HOUR VOLUMES

NOTE: XX[YY](ZZ) = AM[MID](PM)

8-068

NO SCALE

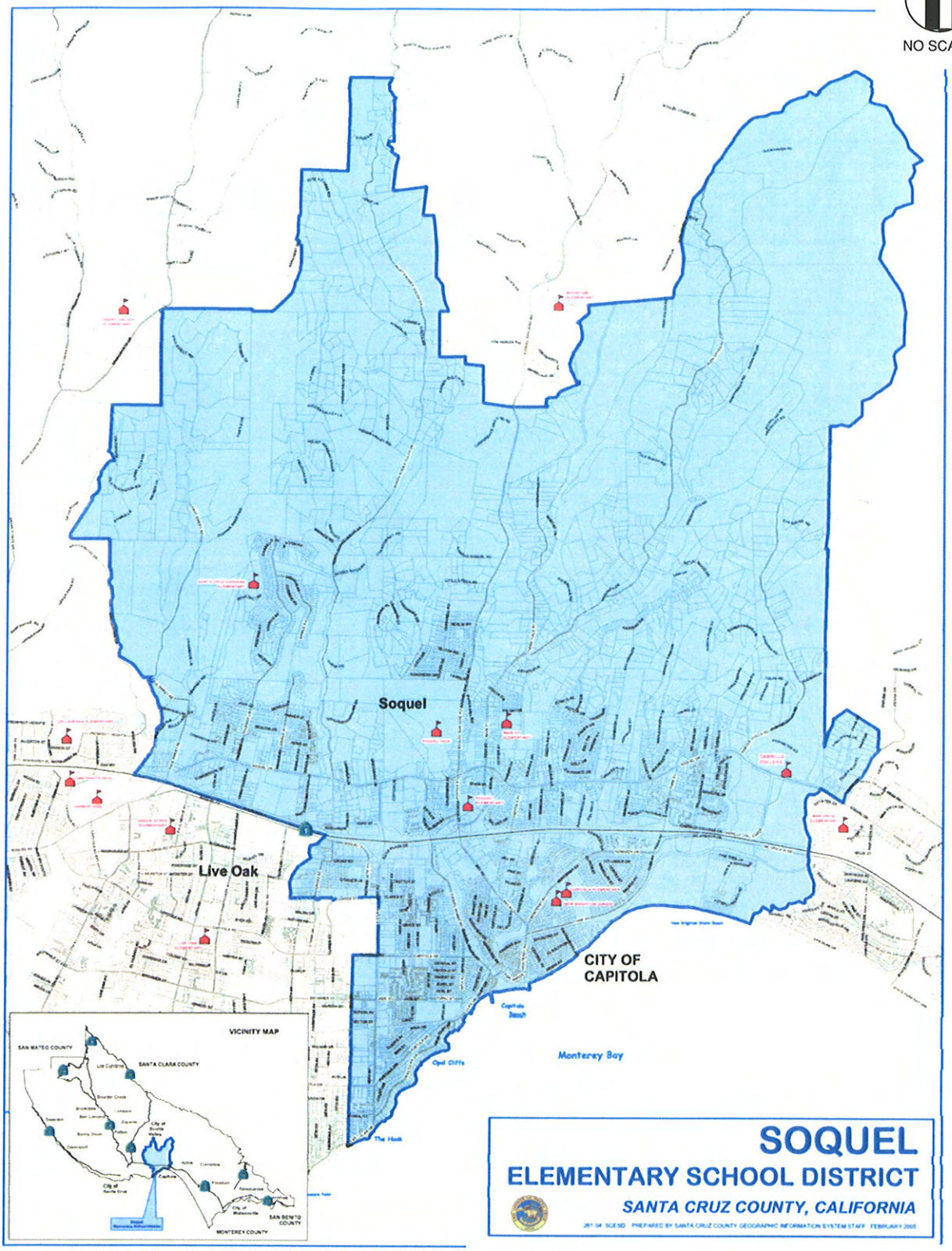
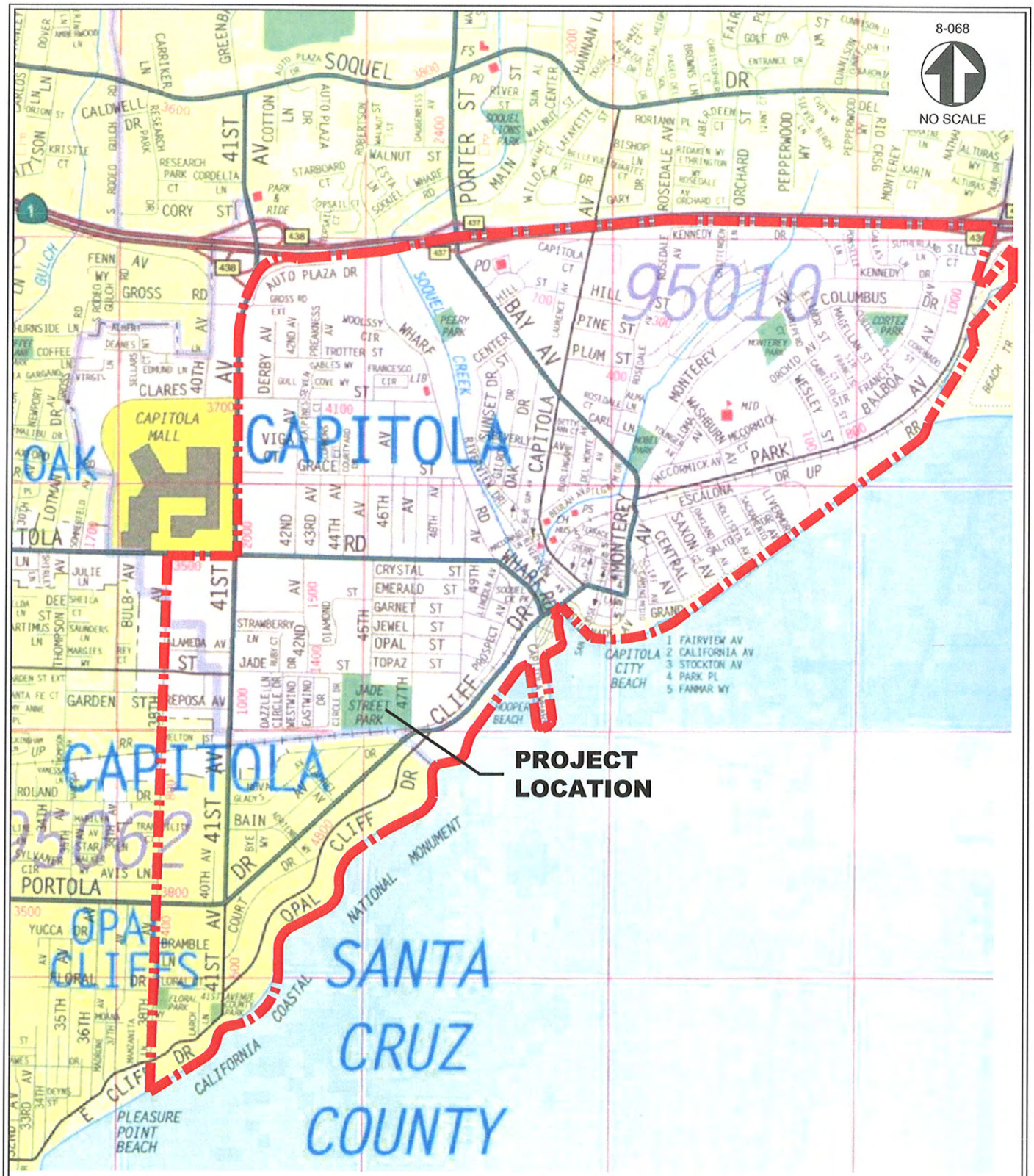


EXHIBIT 11A
SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
BOUNDARY MAP

HIGGINS ASSOCIATES – A Division of Hatch Mott MacDonald

Drawing: J:\2008\051-100\8-068\8-068 EX-11A Soquel Boundary Map.dwg
Layout: EX-9A BOUNDARY MAP
Nov 06, 2008, 11:57am



= OPAL CLIFFS SCHOOL
PROPOSED ATTENDANCE AREA BOUNDARY

EXHIBIT 11B
OPAL CLIFFS SCHOOL
PROPOSED ATTENDANCE AREA BOUNDARY MAP

HIGGINS ASSOCIATES A Division of Hatch Mott MacDonald

Drawing: J:\2008\051-100\8-068\8-068 EX-11B Opal School Boundary Map.dwg
Layout: EX-9B School Boundary
Nov 06, 2008, 11:58am

Roadway Segment	Existing Conditions		Existing Plus Project (Phase 1) Conditions		Existing Plus Project (Phase 2) Conditions		Cumulative Plus Project (Phase 2) Conditions	
	ADT	"TIRE" INDEX	ADT	"TIRE" INDEX	ADT	"TIRE" INDEX	ADT	"TIRE" INDEX
1 Jade Street: 41st Avenue - 45th Avenue	5,240	3.7	5,340	3.7	5,630	**3.8**	6,060	**3.8**
2 Topaz Street: 45th Avenue - 47th Avenue	1,500	3.2	1,600	3.2	1,900	**3.3**	2,050	**3.3**
3 45th Avenue: Capitola Road - Jade Street	3,010	3.5	3,210	3.5	3,730	**3.6**	3,880	**3.6**
4 47th Avenue: Topaz Street - Portola Drive	2,460	3.4	2,570	3.4	2,800	3.4	3,170	**3.5**

NOTES:
1. "TIRE" index values in **bold** indicate a projected change of 0.1 or greater than existing index values.
2. Typical street types associated with the various index levels are shown on the TIRE index chart included as Appendix B.

EXHIBIT 12
STUDY ROADWAY SEGMENTS
TIRE INDEX VALUES

= SCHOOL INFLUENCE ZONE
(600' FROM SCHOOL BOUNDARY)

EXHIBIT 13
OPAL CLIFFS SCHOOL
INFLUENCE ZONE MAP

APPENDIX A

LEVEL OF SERVICE DESCRIPTIONS-

A1. SIGNALIZED INTERSECTIONS

A2. UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL

A3. UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL

APPENDIX A1

LEVEL OF SERVICE (LOS) DESCRIPTION
SIGNALIZED INTERSECTIONS

The capacity of an urban street is related primarily to the signal timing and the geometric characteristics of the facility as well as to the composition of traffic on the facility. Geometrics are a fixed characteristic of a facility. Thus, while traffic composition may vary somewhat over time, the capacity of a facility is generally a stable value that can be significantly improved only by initiating geometric improvements. A traffic signal essentially allocates time among conflicting traffic movements that seek to use the same space. The way in which time is allocated significantly affects the operation and the capacity of the intersection and its approaches.

The methodology for signalized intersection is designed to consider individual intersection approaches and individual lane groups within approaches. A lane group consists of one or more lanes on an intersection approach. The outputs from application of the method described in the HCM 2000 are reported on the basis of each lane. For a given lane group at a signalized intersection, three indications are displayed: green, yellow and red. The red indication may include a short period during which all indications are red, referred to as an all-red interval and the yellow indication forms the change and clearance interval between two green phases.

The methodology for analyzing the capacity and level of service must consider a wide variety of prevailing conditions, including the amount and distribution of traffic movements, traffic composition, geometric characteristics, and details of intersection signalization. The methodology addresses the capacity, LOS, and other performance measures for lane groups and the intersection approaches and the LOS for the intersection as a whole.

Capacity is evaluated in terms of the ratio of demand flow rate to capacity (v/c ratio), whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The methodology does not take into account the potential impact of downstream congestion on intersection operation, nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	<10
B	>10 - 20
C	>20 - 35
D	>35 - 55
E	>55 - 80
F	>80

APPENDIX A2

LEVEL OF SERVICE (LOS) DESCRIPTION
UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL (AWSC)

AWSC intersections require every vehicle to stop at the intersection before proceeding. Since each driver must stop, the judgement as to whether to proceed into the intersection is a function of traffic conditions on the other approaches. While giving priority to the driver on the right is a recognized rule in some areas, it is not a good descriptor of actual intersection operations. What happens is the development of a consensus of right-of-way that alternates between the drivers on the intersection approaches, a consensus that depends primarily on the intersection geometry and the arrival patterns at the stop line.

If no traffic is present on the other approaches, a driver can proceed immediately after the stop is made. If there is traffic on one or more of the other approaches, a driver proceeds only after determining that there are no vehicles currently in the intersection and that it is the driver's turn to proceed. Since no traffic signal controls the stream movement or allocates the right-of-way to each conflicting stream, the rate of departure is controlled by the interaction between the traffic streams themselves.

For AWSC intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow down or stop at the intersection.

The criteria for AWSC intersections have different threshold values than do those for signalized intersections, primarily because drivers expect different levels of performance from different kinds of traffic control devices (i.e traffic signals, two way stop or all way stop, etc.). The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection and a higher level of control delay is acceptable at a signalized intersection for the same LOS.

For AWSC analysis using the HCM 2000 method, the LOS shown reflects the weighted average of the delay on each of the approaches.

LEVEL OF SERVICE (LOS) CRITERIA FOR AWSC INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

APPENDIX A3

LEVEL OF SERVICE (LOS) DESCRIPTION
UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL (TWSC)

TWSC intersections are widely used and stop signs are used to control vehicle movements at such intersections. At TWSC intersections, the stop-controlled approaches are referred to as the minor street approaches; they can be either public streets or private driveways. The intersection approaches that are not controlled by stop signs are referred to as the major street approaches. A three-leg intersection is considered to be a standard type of TWSC intersection if the single minor street approach (i.e. the stem of the T configuration) is controlled by a stop sign. Three-leg intersections where two of the three approaches are controlled by stop signs are a special form of unsignalized intersection control.

At TWSC intersections, drivers on the controlled approaches are required to select gaps in the major street flow through which to execute crossing or turning maneuvers on the basis of judgement. In the presence of a queue, each driver on the controlled approach must use some time to move into the front-of-queue position and prepare to evaluate gaps in the major street flow. Capacity analysis at TWSC intersections depends on a clear description and understanding of the interaction of drivers on the minor or stop-controlled approach with drivers on the major street. Both gap acceptance and empirical models have been developed to describe this interaction.

Thus, the capacity of the controlled legs is based on three factors:

- the distribution of gaps in the major street traffic stream,;
- driver judgement in selecting gaps through which to execute the desired maneuvers; and
- the follow-up time required by each driver in a queue.

The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incident, control, traffic or geometric delay. Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation and referred to as level of service.

LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

APPENDIX B

INTERSECTION LEVELS OF SERVICE CALCULATIONS

EXISTING CONDITIONS

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7031 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.386
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	21.9
Optimal Cycle:	22	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 8:00-9:00 AM												
Base Vol:	22	384	34	51	304	120	141	79	26	41	77	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	384	34	51	304	120	141	79	26	41	77	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	418	37	55	331	131	153	86	28	45	84	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	418	37	55	331	131	153	86	28	45	84	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	24	418	37	55	331	131	153	86	28	45	84	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.91	0.91	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.84	0.16	1.00	1.43	0.57	0.64	0.36	1.00	0.35	0.65	1.00
Final Sat.:	1805	3277	290	1805	2480	979	1180	661	1615	649	1219	1615
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.03	0.13	0.13	0.13	0.13	0.02	0.07	0.07	0.04
Crit Moves:		****		****				****			****	
Green/Cycle:	0.04	0.33	0.33	0.08	0.37	0.37	0.34	0.34	0.34	0.18	0.18	0.18
Volume/Cap:	0.36	0.39	0.39	0.39	0.36	0.36	0.39	0.39	0.05	0.39	0.39	0.20
Uniform Del:	37.6	20.6	20.6	35.0	18.1	18.1	20.2	20.2	17.9	29.0	29.0	28.0
IncremntDel:	3.3	0.2	0.2	1.7	0.2	0.2	0.4	0.4	0.0	0.7	0.7	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.8	20.8	20.8	36.7	18.3	18.3	20.6	20.6	17.9	29.8	29.8	28.4
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:	40.8	20.8	20.8	36.7	18.3	18.3	20.6	20.6	17.9	29.8	29.8	28.4
LOS by Move:	D	C	C	D	B	B	C	C	B	C	C	C
HCM2kAvgQ:	1	5	5	2	4	4	5	5	0	3	3	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.121
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2008 << 7:30-8:30 AM												
Base Vol:	13	11	6	3	9	66	50	24	13	5	29	2
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:	13	11	6	3	9	66	50	24	13	5	29	2
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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	15	13	7	3	10	76	58	28	15	6	34	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	13	7	3	10	76	58	28	15	6	34	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	15	13	7	3	10	76	58	28	15	6	34	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.43	0.37	0.20	0.04	0.11	0.85	0.57	0.28	0.15	0.14	0.80	0.06
Final Sat.:	355	300	164	36	107	787	478	230	124	114	662	46
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.10	0.10	0.10	0.12	0.12	0.12	0.05	0.05	0.05
Crit Moves:	****			****				****		****		
Delay/Veh:	7.4	7.4	7.4	7.1	7.1	7.1	7.8	7.8	7.8	7.5	7.5	7.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.4	7.4	7.4	7.1	7.1	7.1	7.8	7.8	7.8	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		7.4			7.1			7.8			7.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.4			7.1			7.8			7.5	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.542
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.3
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	49	0	73	0	0	0	0	229	33	82	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	0	73	0	0	0	0	229	33	82	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	0	73	0	0	0	0	229	33	82	331	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.00	0.60	0.00	0.00	0.00	0.00	1.00	1.00	0.20	0.80	0.00
Final Sat.:	259	0	388	0	0	0	0	686	790	151	611	0
Capacity Analysis Module:												
Vol/Sat:	0.19	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	0.33	0.04	0.54	0.54	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	9.1	0.0	9.1	0.0	0.0	0.0	0.0	10.3	7.3	12.9	12.9	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.1	0.0	9.1	0.0	0.0	0.0	0.0	10.3	7.3	12.9	12.9	0.0
LOS by Move:	A	*	A	*	*	*	*	B	A	B	B	*
ApproachDel:		9.1			xxxxxx			9.9			12.9	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		9.1			xxxxxx			9.9			12.9	
LOS by Appr:		A			*			A			B	
AllWayAvgQ:	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.5	0.0	1.1	1.1	1.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.139
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.5
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:45-8:45												
Base Vol:	23	49	27	0	33	2	1	9	19	20	15	1
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:	23	49	27	0	33	2	1	9	19	20	15	1
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	29	61	34	0	41	2	1	11	24	25	19	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	61	34	0	41	2	1	11	24	25	19	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	29	61	34	0	41	2	1	11	24	25	19	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.23	0.50	0.27	0.00	0.94	0.06	0.03	0.31	0.66	0.55	0.42	0.03
Final Sat.:	205	438	241	0	800	48	31	275	581	442	331	22
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	xxxx	0.05	0.05	0.04	0.04	0.04	0.06	0.06	0.06
Crit Moves:		****				****		****		****		
Delay/Veh:	7.6	7.6	7.6	0.0	7.4	7.4	7.1	7.1	7.1	7.6	7.6	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.6	7.6	7.6	0.0	7.4	7.4	7.1	7.1	7.1	7.6	7.6	7.6
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		7.6			7.4			7.1			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.6			7.4			7.1			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[14.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:30-8:30 AM												
Base Vol:	0	0	0	24	0	40	62	218	0	0	311	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	24	0	40	62	218	0	0	311	35
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:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	0	0	0	30	0	49	76	269	0	0	383	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	30	0	49	76	269	0	0	383	43
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	827	xxxx	405	427	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	344	xxxx	650	1144	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	326	xxxx	650	1144	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.09	xxxx	0.08	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	473	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	14.1	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			14.1			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.446
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.2
Optimal Cycle:	25	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	51	521	45	73	449	103	129	103	69	49	91	81
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:	51	521	45	73	449	103	129	103	69	49	91	81
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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	53	538	46	75	464	106	133	106	71	51	94	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	538	46	75	464	106	133	106	71	51	94	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
Final Vol.:	53	538	46	75	464	106	133	106	71	51	94	84
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.92	0.92	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.84	0.16	1.00	1.63	0.37	0.56	0.44	1.00	0.35	0.65	1.00
Final Sat.:	1805	3283	284	1805	2854	655	1028	821	1615	654	1214	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.16	0.04	0.16	0.16	0.13	0.13	0.04	0.08	0.08	0.05
Crit Moves:		****		****			****			****		
Green/Cycle:	0.07	0.37	0.37	0.09	0.39	0.39	0.29	0.29	0.29	0.17	0.17	0.17
Volume/Cap:	0.42	0.45	0.45	0.45	0.42	0.42	0.45	0.45	0.15	0.45	0.45	0.30
Uniform Del:	35.6	19.1	19.1	34.3	17.7	17.7	23.1	23.1	21.1	29.6	29.6	28.8
IncremntDel:	2.2	0.2	0.2	1.9	0.2	0.2	0.6	0.6	0.2	1.0	1.0	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.8	19.4	19.4	36.2	17.9	17.9	23.7	23.7	21.2	30.6	30.6	29.4
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:	37.8	19.4	19.4	36.2	17.9	17.9	23.7	23.7	21.2	30.6	30.6	29.4
LOS by Move:	D	B	B	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	6	6	2	6	6	5	5	1	4	4	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.154
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.7
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2008 << 2:00-3:00 PM												
Base Vol:	22	19	3	6	7	64	64	30	4	5	33	6
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:	22	19	3	6	7	64	64	30	4	5	33	6
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	28	24	4	8	9	81	81	38	5	6	42	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	24	4	8	9	81	81	38	5	6	42	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	28	24	4	8	9	81	81	38	5	6	42	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.50	0.43	0.07	0.08	0.09	0.83	0.65	0.31	0.04	0.11	0.75	0.14
Final Sat.:	389	336	53	70	81	742	521	244	33	92	608	110
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.11	0.11	0.11	0.15	0.15	0.15	0.07	0.07	0.07
Crit Moves:	****					****		****		****		
Delay/Veh:	7.8	7.8	7.8	7.3	7.3	7.3	8.1	8.1	8.1	7.6	7.6	7.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.8	7.8	7.8	7.3	7.3	7.3	8.1	8.1	8.1	7.6	7.6	7.6
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		7.8			7.3			8.1			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.8			7.3			8.1			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	27.1
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	36	0	87	0	0	0	14	593	67	81	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	0	87	0	0	0	14	593	67	81	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	36	0	87	0	0	0	14	593	67	81	428	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.29	0.00	0.71	0.00	0.00	0.00	0.02	0.98	1.00	0.16	0.83	0.01
Final Sat.:	165	0	399	0	0	0	15	656	774	109	576	3
Capacity Analysis Module:												
Vol/Sat:	0.22	xxxx	0.22	xxxx	xxxx	xxxx	0.90	0.90	0.09	0.74	0.74	0.74
Crit Moves:			****				****			****		
Delay/Veh:	10.5	0.0	10.5	0.0	0.0	0.0	37.5	37.5	7.8	21.2	21.2	21.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	0.0	10.5	0.0	0.0	0.0	37.5	37.5	7.8	21.2	21.2	21.2
LOS by Move:	B	*	B	*	*	*	E	E	A	C	C	C
ApproachDel:		10.5			xxxxxx			34.5			21.2	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		10.5			xxxxxx			34.5			21.2	
LOS by Appr:		B			*			D			C	
AllWayAvgQ:	0.2	0.2	0.2	0.0	0.0	0.0	5.5	5.5	0.1	2.5	2.5	2.5

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #7004 47th/Topaz

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.132
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.6
Optimal Cycle:	0	Level Of Service:	A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	45	18	0	47	4	2	25	41	20	19	1
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:	34	45	18	0	47	4	2	25	41	20	19	1
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	39	51	21	0	54	5	2	29	47	23	22	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	51	21	0	54	5	2	29	47	23	22	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	39	51	21	0	54	5	2	29	47	23	22	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.35	0.46	0.19	0.00	0.92	0.08	0.03	0.37	0.60	0.50	0.48	0.02
Final Sat.:	294	389	156	0	762	65	26	323	529	393	373	20
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	xxxx	0.07	0.07	0.09	0.09	0.09	0.06	0.06	0.06
Crit Moves:		****			****				****			****
Delay/Veh:	7.8	7.8	7.8	0.0	7.5	7.5	7.3	7.3	7.3	7.7	7.7	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.8	7.8	7.8	0.0	7.5	7.5	7.3	7.3	7.3	7.7	7.7	7.7
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		7.8			7.5			7.3			7.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.8			7.5			7.3			7.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: B[12.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	39	0	63	56	209	0	0	242	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	39	0	63	56	209	0	0	242	38
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	42	0	68	61	226	0	0	262	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	42	0	68	61	226	0	0	262	41
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	630	xxxx	282	303	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	449	xxxx	761	1269	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	432	xxxx	761	1269	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.10	xxxx	0.09	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	589	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.5	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			12.5			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	23.7
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	69	518	59	87	513	124	135	127	101	85	86	80
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:	69	518	59	87	513	124	135	127	101	85	86	80
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	74	552	63	93	547	132	144	135	108	91	92	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	552	63	93	547	132	144	135	108	91	92	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	74	552	63	93	547	132	144	135	108	91	92	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.92	0.92	0.98	0.98	0.85	0.98	0.98	0.85
Lanes:	1.00	1.80	0.20	1.00	1.61	0.39	0.52	0.48	1.00	0.50	0.50	1.00
Final Sat.:	1805	3192	364	1805	2823	682	955	898	1615	922	933	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.17	0.05	0.19	0.19	0.15	0.15	0.07	0.10	0.10	0.05
Crit Moves:	****				****			****			****	
Green/Cycle:	0.08	0.35	0.35	0.10	0.37	0.37	0.29	0.29	0.29	0.19	0.19	0.19
Volume/Cap:	0.52	0.50	0.50	0.50	0.52	0.52	0.52	0.52	0.23	0.52	0.52	0.28
Uniform Del:	35.5	20.7	20.7	33.9	19.7	19.7	23.9	23.9	21.7	29.2	29.2	27.8
IncremntDel:	3.5	0.3	0.3	2.1	0.4	0.4	0.9	0.9	0.3	1.4	1.4	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.0	21.0	21.0	36.1	20.0	20.0	24.8	24.8	22.0	30.7	30.7	28.3
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:	39.0	21.0	21.0	36.1	20.0	20.0	24.8	24.8	22.0	30.7	30.7	28.3
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	7	7	3	7	7	6	6	2	5	5	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.252
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.3
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2000 << 5:00-6:00 PM												
Base Vol:	25	28	15	7	17	100	86	65	20	10	44	4
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:	25	28	15	7	17	100	86	65	20	10	44	4
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	29	32	17	8	19	114	98	74	23	11	50	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	32	17	8	19	114	98	74	23	11	50	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	29	32	17	8	19	114	98	74	23	11	50	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.37	0.41	0.22	0.05	0.14	0.81	0.50	0.38	0.12	0.17	0.76	0.07
Final Sat.:	273	306	164	47	114	670	390	295	91	129	566	51
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.17	0.17	0.17	0.25	0.25	0.25	0.09	0.09	0.09
Crit Moves:		****			****			****			****	
Delay/Veh:	8.1	8.1	8.1	7.9	7.9	7.9	8.9	8.9	8.9	8.0	8.0	8.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	7.9	7.9	7.9	8.9	8.9	8.9	8.0	8.0	8.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.1			7.9			8.9			8.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			7.9			8.9			8.0	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	1.003
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	37.1
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	50	0	116	0	0	0	0	659	65	81	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	0	116	0	0	0	0	659	65	81	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	0	116	0	0	0	0	659	65	81	378	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.30	0.00	0.70	0.00	0.00	0.00	0.00	1.00	1.00	0.18	0.82	0.00
Final Sat.:	172	0	401	0	0	0	0	658	754	116	543	0
Capacity Analysis Module:												
Vol/Sat:	0.29	xxxx	0.29	xxxx	xxxx	xxxx	xxxx	1.00	0.09	0.70	0.70	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	11.4	0.0	11.4	0.0	0.0	0.0	0.0	58.5	7.9	19.7	19.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.4	0.0	11.4	0.0	0.0	0.0	0.0	58.5	7.9	19.7	19.7	0.0
LOS by Move:	B	*	B	*	*	*	*	F	A	C	C	*
ApproachDel:	11.4			xxxxxx			53.9			19.7		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	11.4			xxxxxx			53.9			19.7		
LOS by Appr:	B			*			F			C		
AllWayAvgQ:	0.4	0.4	0.4	0.0	0.0	0.0	0.0	9.2	0.1	2.1	2.1	2.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.172
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 7.8
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	43	65	28	1	42	5	8	33	41	39	20	1
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:	43	65	28	1	42	5	8	33	41	39	20	1
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:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	45	68	29	1	44	5	8	35	43	41	21	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	68	29	1	44	5	8	35	43	41	21	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	45	68	29	1	44	5	8	35	43	41	21	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.32	0.48	0.20	0.02	0.88	0.10	0.10	0.40	0.50	0.65	0.33	0.02
Final Sat.:	262	397	171	17	705	84	82	338	420	498	255	13
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	0.06	0.06	0.06	0.10	0.10	0.10	0.08	0.08	0.08
Crit Moves:		****			****				****		****	
Delay/Veh:	8.1	8.1	8.1	7.6	7.6	7.6	7.5	7.5	7.5	7.9	7.9	7.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	7.6	7.6	7.6	7.5	7.5	7.5	7.9	7.9	7.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.1			7.6			7.5			7.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			7.6			7.5			7.9	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[14.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	35	0	81	83	302	0	0	278	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	35	0	81	83	302	0	0	278	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	40	0	91	94	341	0	0	314	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	40	0	91	94	341	0	0	314	53
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	869	xxxx	340	367	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	325	xxxx	707	1203	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	305	xxxx	707	1203	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	xxxx	0.13	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	506	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.0	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	14.6	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			14.6			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.339
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.7
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	49	0	73	0	0	0	0	229	33	82	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	0	73	0	0	0	0	229	33	82	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	49	0	73	0	0	0	0	229	33	82	331	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.85	0.90	0.90	1.00
Lanes:	0.40	0.00	0.60	0.00	0.00	0.00	0.00	1.00	1.00	0.20	0.80	0.00
Final Sat.:	684	0	1027	0	0	0	0	1900	1615	338	1368	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.12	0.02	0.24	0.24	0.00
Crit Moves:			****								****	
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.71	0.00
Volume/Cap:	0.34	0.00	0.34	0.00	0.00	0.00	0.00	0.17	0.03	0.34	0.34	0.00
Uniform Del:	26.9	0.0	26.9	0.0	0.0	0.0	0.0	3.7	3.3	4.3	4.3	0.0
IncremntDel:	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	27.4	0.0	27.4	0.0	0.0	0.0	0.0	3.8	3.3	4.5	4.5	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:	27.4	0.0	27.4	0.0	0.0	0.0	0.0	3.8	3.3	4.5	4.5	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	0	3	0	0	0	0	2	0	4	4	0

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #7003 45th/Capitola

****

Cycle (sec):	80	Critical Vol./Cap.(X):	0.428
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	6.2
Optimal Cycle:	24	Level Of Service:	A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	36	0	87	0	0	0	14	593	67	81	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	0	87	0	0	0	14	593	67	81	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	36	0	87	0	0	0	14	593	67	81	428	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	0.99	0.99	0.85	0.85	0.85	0.85
Lanes:	0.29	0.00	0.71	0.00	0.00	0.00	0.02	0.98	1.00	0.16	0.83	0.01
Final Sat.:	497	0	1198	0	0	0	43	1838	1615	255	1352	7
Capacity Analysis Module:												
Vol/Sat:	0.07	0.00	0.07	0.00	0.00	0.00	0.32	0.32	0.04	0.32	0.32	0.32
Crit Moves:			****					****				
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.76	0.76	0.76	0.76	0.76	0.76
Volume/Cap:	0.43	0.00	0.43	0.00	0.00	0.00	0.43	0.43	0.05	0.42	0.42	0.42
Uniform Del:	29.7	0.0	29.7	0.0	0.0	0.0	3.5	3.5	2.5	3.5	3.5	3.5
IncremntDel:	1.0	0.0	1.0	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.7	0.0	30.7	0.0	0.0	0.0	3.8	3.8	2.5	3.7	3.7	3.7
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:	30.7	0.0	30.7	0.0	0.0	0.0	3.8	3.8	2.5	3.7	3.7	3.7
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	0	3	0	0	0	6	6	0	5	5	5

****

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #7003 45th/Capitola

****

Cycle (sec):	80	Critical Vol./Cap.(X):	0.481
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.8
Optimal Cycle:	26	Level Of Service:	A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	50	0	116	0	0	0	0	659	65	81	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	0	116	0	0	0	0	659	65	81	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	0	116	0	0	0	0	659	65	81	378	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	1.00	0.85	0.82	0.82	1.00
Lanes:	0.30	0.00	0.70	0.00	0.00	0.00	0.00	1.00	1.00	0.18	0.82	0.00
Final Sat.:	509	0	1187	0	0	0	0	1900	1615	275	1287	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.35	0.04	0.29	0.29	0.00
Crit Moves:			****					****				
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.72	0.72	0.72	0.72	0.00
Volume/Cap:	0.48	0.00	0.48	0.00	0.00	0.00	0.00	0.48	0.06	0.41	0.41	0.00
Uniform Del:	28.1	0.0	28.1	0.0	0.0	0.0	0.0	4.7	3.2	4.4	4.4	0.0
IncremntDel:	1.1	0.0	1.1	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	29.2	0.0	29.2	0.0	0.0	0.0	0.0	5.0	3.2	4.6	4.6	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:	29.2	0.0	29.2	0.0	0.0	0.0	0.0	5.0	3.2	4.6	4.6	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	4	0	4	0	0	0	0	7	0	5	5	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

APPENDIX C

INTERSECTION LEVELS OF SERVICE CALCULATIONS

EXISTING PLUS PROJECT (PHASE1) CONDITIONS

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.393
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.1
Optimal Cycle:	23	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 8:00-9:00 AM												
Base Vol:	22	384	34	51	304	120	141	79	26	41	77	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	384	34	51	304	120	141	79	26	41	77	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	2	5	0	0	0	2	0	1	2	4
Initial Fut:	22	384	36	56	304	120	141	81	26	42	79	57
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	418	39	61	331	131	153	88	28	46	86	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	418	39	61	331	131	153	88	28	46	86	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	24	418	39	61	331	131	153	88	28	46	86	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.91	0.91	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.83	0.17	1.00	1.43	0.57	0.64	0.36	1.00	0.35	0.65	1.00
Final Sat.:	1805	3258	305	1805	2480	979	1169	672	1615	648	1219	1615
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.03	0.13	0.13	0.13	0.13	0.02	0.07	0.07	0.04
Crit Moves:		****		****				****			****	
Green/Cycle:	0.04	0.33	0.33	0.09	0.37	0.37	0.33	0.33	0.33	0.18	0.18	0.18
Volume/Cap:	0.36	0.39	0.39	0.39	0.36	0.36	0.39	0.39	0.05	0.39	0.39	0.21
Uniform Del:	37.6	20.8	20.8	34.6	18.0	18.0	20.4	20.4	18.1	29.0	29.0	28.0
IncremntDel:	3.2	0.2	0.2	1.6	0.2	0.2	0.4	0.4	0.0	0.8	0.8	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.8	21.1	21.1	36.2	18.2	18.2	20.9	20.9	18.1	29.8	29.8	28.4
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:	40.8	21.1	21.1	36.2	18.2	18.2	20.9	20.9	18.1	29.8	29.8	28.4
LOS by Move:	D	C	C	D	B	B	C	C	B	C	C	C
HCM2kAvgQ:	1	5	5	2	4	4	5	5	0	3	3	1

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.141
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 7.7
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2008 << 7:30-8:30 AM												
Base Vol:	13	11	6	3	9	66	50	24	13	5	29	2
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:	13	11	6	3	9	66	50	24	13	5	29	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	9	13	8	0	16	0	0	0	12	9	0	0
Initial Fut:	22	24	14	3	25	66	50	24	25	14	29	2
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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	25	28	16	3	29	76	58	28	29	16	34	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	28	16	3	29	76	58	28	29	16	34	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	25	28	16	3	29	76	58	28	29	16	34	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.37	0.40	0.23	0.03	0.27	0.70	0.51	0.24	0.25	0.31	0.65	0.04
Final Sat.:	295	322	188	28	235	620	411	197	205	243	504	35
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.12	0.12	0.12	0.14	0.14	0.14	0.07	0.07	0.07
Crit Moves:	****				****			****			****	
Delay/Veh:	7.7	7.7	7.7	7.4	7.4	7.4	7.9	7.9	7.9	7.7	7.7	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.7	7.7	7.7	7.4	7.4	7.4	7.9	7.9	7.9	7.7	7.7	7.7
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		7.7			7.4			7.9			7.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.7			7.4			7.9			7.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.563
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.7
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	9	0	0	0	0	0	3	11	0	0
Initial Fut:	46	0	75	0	0	0	0	207	33	85	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	51	0	83	0	0	0	0	229	37	94	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	0	83	0	0	0	0	229	37	94	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	51	0	83	0	0	0	0	229	37	94	331	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.01	0.61	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	245	0	399	0	0	0	0	677	781	167	588	0
Capacity Analysis Module:												
Vol/Sat:	0.21	0.00	0.21	xxxx	xxxx	xxxx	xxxx	0.34	0.05	0.56	0.56	xxxx
Crit Moves:	****							****		****		
Delay/Veh:	9.3	9.3	9.3	0.0	0.0	0.0	0.0	10.4	7.4	13.4	13.4	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.3	9.3	9.3	0.0	0.0	0.0	0.0	10.4	7.4	13.4	13.4	0.0
LOS by Move:	A	A	A	*	*	*	*	B	A	B	B	*
ApproachDel:	9.3			xxxxxx			10.0			13.4		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	9.3			xxxxxx			10.0			13.4		
LOS by Appr:	A			*			B			B		
AllWayAvgQ:	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.5	0.0	1.2	1.2	1.2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.151
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.6
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:45-8:45												
Base Vol:	23	49	27	0	33	2	1	9	19	20	15	1
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:	23	49	27	0	33	2	1	9	19	20	15	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	7	0	0	0	0	1	0	1	7	0	1	0
Initial Fut:	30	49	27	0	33	3	1	10	26	20	16	1
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	37	61	34	0	41	4	1	12	32	25	20	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	61	34	0	41	4	1	12	32	25	20	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	37	61	34	0	41	4	1	12	32	25	20	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.47	0.25	0.00	0.92	0.08	0.03	0.27	0.70	0.54	0.43	0.03
Final Sat.:	247	404	222	0	772	70	24	239	622	426	341	21
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	xxxx	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
Crit Moves:	****				****			****			****	
Delay/Veh:	7.7	7.7	7.7	0.0	7.4	7.4	7.1	7.1	7.1	7.7	7.7	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.7	7.7	7.7	0.0	7.4	7.4	7.1	7.1	7.1	7.7	7.7	7.7
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		7.7			7.4			7.1			7.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.7			7.4			7.1			7.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[14.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:30-8:30 AM												
Base Vol:	0	0	0	24	0	40	62	218	0	0	311	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	24	0	40	62	218	0	0	311	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	6	0	1	1	0	0	0	0	6
Initial Fut:	0	0	0	30	0	41	63	218	0	0	311	41
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:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	0	0	0	37	0	51	78	269	0	0	383	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	37	0	51	78	269	0	0	383	51
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	833	xxxx	409	434	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	341	xxxx	647	1136	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	323	xxxx	647	1136	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.11	xxxx	0.08	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	454	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	14.8	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			14.8			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.451
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.3
Optimal Cycle:	25	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	51	521	45	73	449	103	129	103	69	49	91	81
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:	51	521	45	73	449	103	129	103	69	49	91	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	1	3	0	0	0	1	0	1	2	3
Initial Fut:	51	521	46	76	449	103	129	104	69	50	93	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	53	538	48	79	464	106	133	107	71	52	96	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	538	48	79	464	106	133	107	71	52	96	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	53	538	48	79	464	106	133	107	71	52	96	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.92	0.92	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.84	0.16	1.00	1.63	0.37	0.55	0.45	1.00	0.35	0.65	1.00
Final Sat.:	1805	3277	289	1805	2854	655	1024	825	1615	653	1215	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.16	0.04	0.16	0.16	0.13	0.13	0.04	0.08	0.08	0.05
Crit Moves:		****		****			****				****	
Green/Cycle:	0.07	0.36	0.36	0.10	0.39	0.39	0.29	0.29	0.29	0.18	0.18	0.18
Volume/Cap:	0.42	0.45	0.45	0.45	0.42	0.42	0.45	0.45	0.15	0.45	0.45	0.31
Uniform Del:	35.6	19.3	19.3	34.1	17.7	17.7	23.3	23.3	21.2	29.5	29.5	28.7
IncremntDel:	2.2	0.2	0.2	1.9	0.2	0.2	0.6	0.6	0.2	1.0	1.0	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.8	19.6	19.6	36.0	17.9	17.9	23.9	23.9	21.3	30.5	30.5	29.4
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:	37.8	19.6	19.6	36.0	17.9	17.9	23.9	23.9	21.3	30.5	30.5	29.4
LOS by Move:	D	B	B	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	6	6	2	6	6	5	5	1	4	4	2

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.169
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 7.9
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2008 << 2:00-3:00 PM												
Base Vol:	22	19	3	6	7	64	64	30	4	5	33	6
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:	22	19	3	6	7	64	64	30	4	5	33	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	8	11	7	0	10	0	0	0	7	5	0	0
Initial Fut:	30	30	10	6	17	64	64	30	11	10	33	6
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	38	38	13	8	21	81	81	38	14	13	42	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	38	13	8	21	81	81	38	14	13	42	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	38	38	13	8	21	81	81	38	14	13	42	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.43	0.43	0.14	0.07	0.19	0.74	0.61	0.29	0.10	0.20	0.68	0.12
Final Sat.:	333	333	111	59	168	634	476	223	82	159	523	95
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.13	0.13	0.13	0.17	0.17	0.17	0.08	0.08	0.08
Crit Moves:		****			****		****				****	
Delay/Veh:	8.0	8.0	8.0	7.6	7.6	7.6	8.3	8.3	8.3	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.0	8.0	8.0	7.6	7.6	7.6	8.3	8.3	8.3	7.8	7.8	7.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.0			7.6			8.3			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.0			7.6			8.3			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.913
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	28.1
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	8	0	0	0	0	0	2	7	0	0
Initial Fut:	36	0	90	0	0	0	13	559	65	83	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	38	0	96	0	0	0	14	593	69	88	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	0	96	0	0	0	14	593	69	88	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	38	0	96	0	0	0	14	593	69	88	428	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.29	0.00	0.71	0.00	0.00	0.00	0.02	0.98	1.00	0.17	0.82	0.01
Final Sat.:	161	0	402	0	0	0	15	650	765	116	562	3
Capacity Analysis Module:												
Vol/Sat:	0.24	xxxx	0.24	xxxx	xxxx	xxxx	0.91	0.91	0.09	0.76	0.76	0.76
Crit Moves:			****				****			****		
Delay/Veh:	10.8	0.0	10.8	0.0	0.0	0.0	39.1	39.1	7.8	22.4	22.4	22.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.8	0.0	10.8	0.0	0.0	0.0	39.1	39.1	7.8	22.4	22.4	22.4
LOS by Move:	B	*	B	*	*	*	E	E	A	C	C	C
ApproachDel:	10.8			xxxxxx			35.9			22.4		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	10.8			xxxxxx			35.9			22.4		
LOS by Appr:	B			*			E			C		
AllWayAvgQ:	0.3	0.3	0.3	0.0	0.0	0.0	5.7	5.7	0.1	2.7	2.7	2.7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.140
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.6
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	45	18	0	47	4	2	25	41	20	19	1
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:	34	45	18	0	47	4	2	25	41	20	19	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	5	0	0	0	0	0	0	1	6	0	0	0
Initial Fut:	39	45	18	0	47	4	2	26	47	20	19	1
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	44	51	21	0	54	5	2	30	54	23	22	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	51	21	0	54	5	2	30	54	23	22	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	44	51	21	0	54	5	2	30	54	23	22	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.44	0.18	0.00	0.92	0.08	0.02	0.35	0.63	0.50	0.48	0.02
Final Sat.:	319	368	147	0	757	64	23	304	549	390	371	20
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	xxxx	0.07	0.07	0.10	0.10	0.10	0.06	0.06	0.06
Crit Moves:			****			****	****			****		
Delay/Veh:	7.9	7.9	7.9	0.0	7.6	7.6	7.4	7.4	7.4	7.7	7.7	7.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.9	7.9	7.9	0.0	7.6	7.6	7.4	7.4	7.4	7.7	7.7	7.7
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		7.9			7.6			7.4			7.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.9			7.6			7.4			7.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B[12.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	39	0	63	56	209	0	0	242	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	39	0	63	56	209	0	0	242	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	5	0	1	1	0	0	0	0	4
Initial Fut:	0	0	0	44	0	64	57	209	0	0	242	42
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	48	0	69	62	226	0	0	262	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	48	0	69	62	226	0	0	262	45
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	634	xxxx	285	307	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	446	xxxx	759	1265	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	429	xxxx	759	1265	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.11	xxxx	0.09	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	578	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.8	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			12.8			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.525
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	23.8
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	69	518	59	87	513	124	135	127	101	85	86	80
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:	69	518	59	87	513	124	135	127	101	85	86	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	1	3	0	0	0	1	0	1	1	3
Initial Fut:	69	518	60	90	513	124	135	128	101	86	87	83
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	74	552	64	96	547	132	144	136	108	92	93	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	552	64	96	547	132	144	136	108	92	93	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	74	552	64	96	547	132	144	136	108	92	93	88
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.92	0.92	0.98	0.98	0.85	0.98	0.98	0.85
Lanes:	1.00	1.79	0.21	1.00	1.61	0.39	0.51	0.49	1.00	0.50	0.50	1.00
Final Sat.:	1805	3183	369	1805	2823	682	951	902	1615	922	933	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.17	0.05	0.19	0.19	0.15	0.15	0.07	0.10	0.10	0.05
Crit Moves:	****				****		****			****		
Green/Cycle:	0.08	0.34	0.34	0.10	0.37	0.37	0.29	0.29	0.29	0.19	0.19	0.19
Volume/Cap:	0.52	0.51	0.51	0.51	0.52	0.52	0.52	0.52	0.23	0.52	0.52	0.29
Uniform Del:	35.5	20.9	20.9	33.9	19.7	19.7	23.9	23.9	21.7	29.2	29.2	27.8
IncremntDel:	3.6	0.4	0.4	2.2	0.4	0.4	1.0	1.0	0.3	1.5	1.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.1	21.3	21.3	36.1	20.1	20.1	24.8	24.8	22.0	30.6	30.6	28.3
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:	39.1	21.3	21.3	36.1	20.1	20.1	24.8	24.8	22.0	30.6	30.6	28.3
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	7	7	3	7	7	6	6	2	5	5	2

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.268
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.6
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0

Volume Module: >> Count Date: 11 Jun 2000 << 5:00-6:00 PM

Base Vol:	25	28	15	7	17	100	86	65	20	10	44	4
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:	25	28	15	7	17	100	86	65	20	10	44	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	7	10	5	0	10	0	0	0	7	5	0	0
Initial Fut:	32	38	20	7	27	100	86	65	27	15	44	4
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	37	43	23	8	31	114	98	74	31	17	50	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	43	23	8	31	114	98	74	31	17	50	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	37	43	23	8	31	114	98	74	31	17	50	5

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.42	0.22	0.05	0.20	0.75	0.48	0.37	0.15	0.24	0.70	0.06
Final Sat.:	261	310	163	42	163	603	366	277	115	172	505	46

Capacity Analysis Module:

Vol/Sat:	0.14	0.14	0.14	0.19	0.19	0.19	0.27	0.27	0.27	0.10	0.10	0.10
Crit Moves:	****					****		****			****	
Delay/Veh:	8.3	8.3	8.3	8.1	8.1	8.1	9.1	9.1	9.1	8.2	8.2	8.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.3	8.3	8.3	8.1	8.1	8.1	9.1	9.1	9.1	8.2	8.2	8.2
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.3			8.1			9.1			8.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.3			8.1			9.1			8.2	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec): 100 Critical Vol./Cap.(X): 1.011
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 38.3
Optimal Cycle: 0 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	7	0	0	0	0	0	2	7	0	0
Initial Fut:	50	0	119	0	0	0	0	637	65	85	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	52	0	123	0	0	0	0	659	67	88	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	0	123	0	0	0	0	659	67	88	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	0	123	0	0	0	0	659	67	88	378	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.30	0.00	0.70	0.00	0.00	0.00	0.00	1.00	1.00	0.19	0.81	0.00
Final Sat.:	169	0	403	0	0	0	0	652	747	124	530	0
Capacity Analysis Module:												
Vol/Sat:	0.31	xxxx	0.31	xxxx	xxxx	xxxx	xxxx	1.01	0.09	0.71	0.71	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	11.6	0.0	11.6	0.0	0.0	0.0	0.0	61.0	8.0	20.6	20.6	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.6	0.0	11.6	0.0	0.0	0.0	0.0	61.0	8.0	20.6	20.6	0.0
LOS by Move:	B	*	B	*	*	*	*	F	A	C	C	*
ApproachDel:		11.6			xxxxxx			56.1			20.6	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		11.6			xxxxxx			56.1			20.6	
LOS by Appr:		B			*			F			C	
AllWayAvgQ:	0.4	0.4	0.4	0.0	0.0	0.0	0.0	9.6	0.1	2.2	2.2	2.2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.179
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 7.9
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	43	65	28	1	42	5	8	33	41	39	20	1
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:	43	65	28	1	42	5	8	33	41	39	20	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	5	0	0	0	0	0	0	1	4	0	0	0
Initial Fut:	48	65	28	1	42	5	8	34	45	39	20	1
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:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	50	68	29	1	44	5	8	36	47	41	21	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	68	29	1	44	5	8	36	47	41	21	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	68	29	1	44	5	8	36	47	41	21	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.34	0.46	0.20	0.02	0.88	0.10	0.09	0.39	0.52	0.65	0.33	0.02
Final Sat.:	281	381	164	17	701	83	77	329	435	495	254	13
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.06	0.06	0.06	0.11	0.11	0.11	0.08	0.08	0.08
Crit Moves:		****			****		****				****	
Delay/Veh:	8.1	8.1	8.1	7.6	7.6	7.6	7.6	7.6	7.6	7.9	7.9	7.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	7.6	7.6	7.6	7.6	7.6	7.6	7.9	7.9	7.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.1			7.6			7.6			7.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			7.6			7.6			7.9	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C[15.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	35	0	81	83	302	0	0	278	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	35	0	81	83	302	0	0	278	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	4	0	0	1	0	0	0	0	4
Initial Fut:	0	0	0	39	0	81	84	302	0	0	278	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	44	0	91	95	341	0	0	314	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	44	0	91	95	341	0	0	314	58
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	873	xxxx	343	371	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	323	xxxx	705	1198	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	303	xxxx	705	1198	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.15	xxxx	0.13	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	492	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	15.1	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			15.1			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.358
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.1
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	9	0	0	0	0	0	3	11	0	0
Initial Fut:	46	0	75	0	0	0	0	207	33	85	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	51	0	83	0	0	0	0	229	37	94	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	0	83	0	0	0	0	229	37	94	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	51	0	83	0	0	0	0	229	37	94	331	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.85	0.89	0.89	1.00
Lanes:	0.38	0.00	0.62	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	649	0	1058	0	0	0	0	1900	1615	372	1309	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.12	0.02	0.25	0.25	0.00
Crit Moves:	****										****	
Green/Cycle:	0.22	0.00	0.22	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.71	0.00
Volume/Cap:	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.17	0.03	0.36	0.36	0.00
Uniform Del:	26.5	0.0	26.5	0.0	0.0	0.0	0.0	3.9	3.5	4.6	4.6	0.0
IncremntDel:	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	27.1	0.0	27.1	0.0	0.0	0.0	0.0	4.0	3.6	4.8	4.8	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:	27.1	0.0	27.1	0.0	0.0	0.0	0.0	4.0	3.6	4.8	4.8	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	0	3	0	0	0	0	2	0	4	4	0

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.437
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	6.7
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	8	0	0	0	0	0	2	7	0	0
Initial Fut:	36	0	90	0	0	0	13	559	65	83	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	38	0	96	0	0	0	14	593	69	88	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	0	96	0	0	0	14	593	69	88	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	38	0	96	0	0	0	14	593	69	88	428	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	0.99	0.99	0.85	0.84	0.84	0.84
Lanes:	0.29	0.00	0.71	0.00	0.00	0.00	0.02	0.98	1.00	0.17	0.82	0.01
Final Sat.:	484	0	1210	0	0	0	43	1838	1615	271	1315	7
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.08	0.00	0.00	0.00	0.32	0.32	0.04	0.33	0.33	0.33
Crit Moves:			****								****	
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.74	0.74	0.74	0.74	0.74	0.74
Volume/Cap:	0.44	0.00	0.44	0.00	0.00	0.00	0.43	0.43	0.06	0.44	0.44	0.44
Uniform Del:	29.2	0.0	29.2	0.0	0.0	0.0	3.9	3.9	2.7	3.9	3.9	3.9
IncremntDel:	1.0	0.0	1.0	0.0	0.0	0.0	0.2	0.2	0.0	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	30.2	0.0	30.2	0.0	0.0	0.0	4.1	4.1	2.8	4.1	4.1	4.1
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:	30.2	0.0	30.2	0.0	0.0	0.0	4.1	4.1	2.8	4.1	4.1	4.1
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	0	3	0	0	0	6	6	0	5	5	5

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.487
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.1
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	2	0	7	0	0	0	0	0	2	7	0	0
Initial Fut:	50	0	119	0	0	0	0	637	65	85	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	52	0	123	0	0	0	0	659	67	88	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	0	123	0	0	0	0	659	67	88	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	0	123	0	0	0	0	659	67	88	378	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	1.00	0.85	0.81	0.81	1.00
Lanes:	0.30	0.00	0.70	0.00	0.00	0.00	0.00	1.00	1.00	0.19	0.81	0.00
Final Sat.:	501	0	1193	0	0	0	0	1900	1615	291	1248	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.35	0.04	0.30	0.30	0.00
Crit Moves:	****							****				
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.71	0.00
Volume/Cap:	0.49	0.00	0.49	0.00	0.00	0.00	0.00	0.49	0.06	0.42	0.42	0.00
Uniform Del:	27.7	0.0	27.7	0.0	0.0	0.0	0.0	5.1	3.4	4.7	4.7	0.0
IncremntDel:	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	28.7	0.0	28.7	0.0	0.0	0.0	0.0	5.3	3.5	5.0	5.0	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:	28.7	0.0	28.7	0.0	0.0	0.0	0.0	5.3	3.5	5.0	5.0	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	4	0	4	0	0	0	0	7	1	5	5	0

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

APPENDIX D

INTERSECTION LEVELS OF SERVICE CALCULATIONS

EXISTING PLUS PROJECT (PHASE 2) CONDITIONS

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.423
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.8
Optimal Cycle:	24	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 8:00-9:00 AM												
Base Vol:	22	384	34	51	304	120	141	79	26	41	77	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	384	34	51	304	120	141	79	26	41	77	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	9	24	0	0	0	11	0	8	9	20
Initial Fut:	22	384	43	75	304	120	141	90	26	49	86	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	418	47	82	331	131	153	98	28	53	94	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	418	47	82	331	131	153	98	28	53	94	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	24	418	47	82	331	131	153	98	28	53	94	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.91	0.91	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.80	0.20	1.00	1.43	0.57	0.61	0.39	1.00	0.36	0.64	1.00
Final Sat.:	1805	3198	358	1805	2480	979	1125	718	1615	677	1189	1615
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.05	0.13	0.13	0.14	0.14	0.02	0.08	0.08	0.05
Crit Moves:		****		****			****				****	
Green/Cycle:	0.04	0.31	0.31	0.11	0.38	0.38	0.32	0.32	0.32	0.19	0.19	0.19
Volume/Cap:	0.35	0.42	0.42	0.42	0.35	0.35	0.42	0.42	0.05	0.42	0.42	0.26
Uniform Del:	37.5	22.0	22.0	33.4	17.8	17.8	21.3	21.3	18.7	28.8	28.8	27.9
IncremntDel:	3.1	0.3	0.3	1.5	0.2	0.2	0.5	0.5	0.0	0.8	0.8	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.7	22.2	22.2	34.9	18.0	18.0	21.7	21.7	18.7	29.6	29.6	28.3
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:	40.7	22.2	22.2	34.9	18.0	18.0	21.7	21.7	18.7	29.6	29.6	28.3
LOS by Move:	D	C	C	C	B	B	C	C	B	C	C	C
HCM2kAvgQ:	1	5	5	2	4	4	5	5	0	4	4	2

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.287
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2008 << 7:30-8:30 AM												
Base Vol:	13	11	6	3	9	66	50	24	13	5	29	2
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:	13	11	6	3	9	66	50	24	13	5	29	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	47	67	38	0	81	0	0	0	57	45	0	0
Initial Fut:	60	78	44	3	90	66	50	24	70	50	29	2
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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	70	90	51	3	104	76	58	28	81	58	34	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	90	51	3	104	76	58	28	81	58	34	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	70	90	51	3	104	76	58	28	81	58	34	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.43	0.24	0.02	0.57	0.41	0.35	0.17	0.48	0.62	0.36	0.02
Final Sat.:	243	315	178	14	426	312	249	119	348	402	233	16
Capacity Analysis Module:												
Vol/Sat:	0.29	0.29	0.29	0.24	0.24	0.24	0.23	0.23	0.23	0.14	0.14	0.14
Crit Moves:		****			****		****				****	
Delay/Veh:	9.4	9.4	9.4	8.9	8.9	8.9	9.0	9.0	9.0	8.9	8.9	8.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	8.9	8.9	8.9	9.0	9.0	9.0	8.9	8.9	8.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.4			8.9			9.0			8.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.4			8.9			9.0			8.9	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.655
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.4
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	12	0	46	0	0	0	0	0	15	55	0	0
Initial Fut:	56	0	112	0	0	0	0	207	45	129	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	62	0	124	0	0	0	0	229	50	143	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	0	124	0	0	0	0	229	50	143	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	62	0	124	0	0	0	0	229	50	143	331	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.00	0.67	0.00	0.00	0.00	0.00	1.00	1.00	0.30	0.70	0.00
Final Sat.:	211	0	421	0	0	0	0	645	737	218	505	0
Capacity Analysis Module:												
Vol/Sat:	0.29	xxxx	0.29	xxxx	xxxx	xxxx	xxxx	0.36	0.07	0.66	0.66	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	10.2	0.0	10.2	0.0	0.0	0.0	0.0	11.0	7.8	16.4	16.4	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.2	0.0	10.2	0.0	0.0	0.0	0.0	11.0	7.8	16.4	16.4	0.0
LOS by Move:	B	*	B	*	*	*	*	B	A	C	C	*
ApproachDel:		10.2			xxxxxx			10.4			16.4	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		10.2			xxxxxx			10.4			16.4	
LOS by Appr:		B			*			B			C	
AllWayAvgQ:	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.5	0.1	1.7	1.7	1.7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.204
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:45-8:45												
Base Vol:	23	49	27	0	33	2	1	9	19	20	15	1
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:	23	49	27	0	33	2	1	9	19	20	15	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	38	0	0	0	0	3	3	3	32	0	4	0
Initial Fut:	61	49	27	0	33	5	4	12	51	20	19	1
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	76	61	34	0	41	6	5	15	63	25	24	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	61	34	0	41	6	5	15	63	25	24	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	76	61	34	0	41	6	5	15	63	25	24	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.44	0.36	0.20	0.00	0.87	0.13	0.06	0.18	0.76	0.50	0.48	0.02
Final Sat.:	372	299	165	0	706	107	51	154	657	379	360	19
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	xxxx	0.06	0.06	0.10	0.10	0.10	0.07	0.07	0.07
Crit Moves:		****			****			****			****	
Delay/Veh:	8.2	8.2	8.2	0.0	7.5	7.5	7.4	7.4	7.4	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	8.2	0.0	7.5	7.5	7.4	7.4	7.4	7.8	7.8	7.8
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		8.2			7.5			7.4			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			7.5			7.4			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C[17.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 7:30-8:30 AM												
Base Vol:	0	0	0	24	0	40	62	218	0	0	311	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	24	0	40	62	218	0	0	311	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	28	0	4	5	0	0	0	0	33
Initial Fut:	0	0	0	52	0	44	67	218	0	0	311	68
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:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	0	0	0	64	0	54	83	269	0	0	383	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	64	0	54	83	269	0	0	383	84
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	859	xxxx	425	467	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	329	xxxx	633	1105	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	310	xxxx	633	1105	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.21	xxxx	0.09	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	404	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	17.6	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			17.6			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.469
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.8
Optimal Cycle:	25	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	51	521	45	73	449	103	129	103	69	49	91	81
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:	51	521	45	73	449	103	129	103	69	49	91	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	5	14	0	0	0	7	0	6	8	17
Initial Fut:	51	521	50	87	449	103	129	110	69	55	99	98
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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	53	538	52	90	464	106	133	114	71	57	102	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	538	52	90	464	106	133	114	71	57	102	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
Final Vol.:	53	538	52	90	464	106	133	114	71	57	102	101
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.92	0.92	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.82	0.18	1.00	1.63	0.37	0.54	0.46	1.00	0.36	0.64	1.00
Final Sat.:	1805	3251	312	1805	2854	655	999	852	1615	666	1199	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.05	0.16	0.16	0.13	0.13	0.04	0.09	0.09	0.06
Crit Moves:		****		****				****			****	
Green/Cycle:	0.07	0.35	0.35	0.11	0.39	0.39	0.28	0.28	0.28	0.18	0.18	0.18
Volume/Cap:	0.42	0.47	0.47	0.47	0.42	0.42	0.47	0.47	0.16	0.47	0.47	0.34
Uniform Del:	35.6	20.1	20.1	33.6	17.8	17.8	23.6	23.6	21.4	29.3	29.3	28.6
IncremntDel:	2.2	0.3	0.3	1.8	0.2	0.2	0.7	0.7	0.2	1.0	1.0	0.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.9	20.4	20.4	35.4	18.0	18.0	24.3	24.3	21.6	30.3	30.3	29.3
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:	37.9	20.4	20.4	35.4	18.0	18.0	24.3	24.3	21.6	30.3	30.3	29.3
LOS by Move:	D	C	C	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	6	6	3	6	6	5	5	1	4	4	2

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.290
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.0
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0

Volume Module: >> Count Date: 11 Jun 2008 << 2:00-3:00 PM

Base Vol:	22	19	3	6	7	64	64	30	4	5	33	6
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:	22	19	3	6	7	64	64	30	4	5	33	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	39	56	32	0	47	0	0	0	33	26	0	0
Initial Fut:	61	75	35	6	54	64	64	30	37	31	33	6
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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	77	94	44	8	68	81	81	38	47	39	42	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	94	44	8	68	81	81	38	47	39	42	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	77	94	44	8	68	81	81	38	47	39	42	8

Saturation Flow Module:

Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.44	0.20	0.05	0.43	0.52	0.49	0.23	0.28	0.44	0.47	0.09
Final Sat.:	265	326	152	37	332	394	346	162	200	297	316	57

Capacity Analysis Module:

Vol/Sat:	0.29	0.29	0.29	0.20	0.20	0.20	0.23	0.23	0.23	0.13	0.13	0.13
Crit Moves:			****		****				****		****	
Delay/Veh:	9.4	9.4	9.4	8.5	8.5	8.5	9.1	9.1	9.1	8.7	8.7	8.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	8.5	8.5	8.5	9.1	9.1	9.1	8.7	8.7	8.7
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.4			8.5			9.1			8.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.4			8.5			9.1			8.7	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.4	0.4	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	0.948
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	33.1
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	10	0	38	0	0	0	0	0	9	32	0	0
Initial Fut:	44	0	120	0	0	0	13	559	72	108	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	47	0	127	0	0	0	14	593	76	115	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	0	127	0	0	0	14	593	76	115	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	47	0	127	0	0	0	14	593	76	115	428	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.00	0.73	0.00	0.00	0.00	0.02	0.98	1.00	0.21	0.78	0.01
Final Sat.:	151	0	413	0	0	0	15	626	732	138	517	3
Capacity Analysis Module:												
Vol/Sat:	0.31	xxxx	0.31	xxxx	xxxx	xxxx	0.95	0.95	0.10	0.83	0.83	0.83
Crit Moves:	****						****			****		
Delay/Veh:	11.7	0.0	11.7	0.0	0.0	0.0	46.6	46.6	8.2	28.4	28.4	28.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.7	0.0	11.7	0.0	0.0	0.0	46.6	46.6	8.2	28.4	28.4	28.4
LOS by Move:	B	*	B	*	*	*	E	E	A	D	D	D
ApproachDel:	11.7			xxxxxx			42.3			28.4		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	11.7			xxxxxx			42.3			28.4		
LOS by Appr:	B			*			E			D		
AllWayAvgQ:	0.4	0.4	0.4	0.0	0.0	0.0	6.8	6.8	0.1	3.6	3.6	3.6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.167
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.8
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	45	18	0	47	4	2	25	41	20	19	1
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:	34	45	18	0	47	4	2	25	41	20	19	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	22	0	0	0	0	1	2	3	27	0	2	0
Initial Fut:	56	45	18	0	47	5	4	28	68	20	21	1
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	64	51	21	0	54	6	5	32	78	23	24	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	51	21	0	54	6	5	32	78	23	24	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	64	51	21	0	54	6	5	32	78	23	24	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.47	0.38	0.15	0.00	0.90	0.10	0.04	0.28	0.68	0.48	0.50	0.02
Final Sat.:	381	307	123	0	725	77	35	243	591	363	382	18
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	xxxx	0.07	0.07	0.13	0.13	0.13	0.06	0.06	0.06
Crit Moves:	****				****		****				****	
Delay/Veh:	8.1	8.1	8.1	0.0	7.7	7.7	7.5	7.5	7.5	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	0.0	7.7	7.7	7.5	7.5	7.5	7.8	7.8	7.8
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		8.1			7.7			7.5			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			7.7			7.5			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[13.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	39	0	63	56	209	0	0	242	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	39	0	63	56	209	0	0	242	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	24	0	3	3	0	0	0	0	19
Initial Fut:	0	0	0	63	0	66	59	209	0	0	242	57
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	68	0	71	64	226	0	0	262	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	68	0	71	64	226	0	0	262	62
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	647	xxxx	293	324	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	439	xxxx	751	1248	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	421	xxxx	751	1248	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	0.10	0.05	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	543	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.0	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.9	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			13.9			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec):	80	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	24.3
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	69	518	59	87	513	124	135	127	101	85	86	80
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:	69	518	59	87	513	124	135	127	101	85	86	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	4	10	0	0	0	5	0	4	5	11
Initial Fut:	69	518	63	97	513	124	135	132	101	89	91	91
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	74	552	67	103	547	132	144	141	108	95	97	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	552	67	103	547	132	144	141	108	95	97	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	74	552	67	103	547	132	144	141	108	95	97	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.92	0.92	0.98	0.98	0.85	0.98	0.98	0.85
Lanes:	1.00	1.78	0.22	1.00	1.61	0.39	0.51	0.49	1.00	0.49	0.51	1.00
Final Sat.:	1805	3167	385	1805	2823	682	937	916	1615	917	938	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.17	0.06	0.19	0.19	0.15	0.15	0.07	0.10	0.10	0.06
Crit Moves:		****		****				****			****	
Green/Cycle:	0.08	0.33	0.33	0.11	0.36	0.36	0.29	0.29	0.29	0.20	0.20	0.20
Volume/Cap:	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.23	0.53	0.53	0.31
Uniform Del:	35.6	21.7	21.7	33.7	20.2	20.2	23.8	23.8	21.6	28.9	28.9	27.5
IncremntDel:	4.1	0.5	0.5	2.7	0.4	0.4	1.0	1.0	0.3	1.5	1.5	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.7	22.2	22.2	36.4	20.6	20.6	24.8	24.8	21.8	30.3	30.3	28.1
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:	39.7	22.2	22.2	36.4	20.6	20.6	24.8	24.8	21.8	30.3	30.3	28.1
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	7	7	3	7	7	6	6	2	5	5	2

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.313
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.2
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2000 << 5:00-6:00 PM												
Base Vol:	25	28	15	7	17	100	86	65	20	10	44	4
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:	25	28	15	7	17	100	86	65	20	10	44	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	25	36	20	0	36	0	0	0	25	20	0	0
Initial Fut:	50	64	35	7	53	100	86	65	45	30	44	4
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	57	73	40	8	61	114	98	74	51	34	50	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	73	40	8	61	114	98	74	51	34	50	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	73	40	8	61	114	98	74	51	34	50	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.34	0.43	0.23	0.04	0.33	0.63	0.44	0.33	0.23	0.38	0.57	0.05
Final Sat.:	237	304	166	33	249	470	314	237	164	255	373	34
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.24	0.24	0.24	0.31	0.31	0.31	0.13	0.13	0.13
Crit Moves:	****				****		****				****	
Delay/Veh:	9.2	9.2	9.2	8.8	8.8	8.8	9.8	9.8	9.8	8.8	8.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	9.2	9.2	8.8	8.8	8.8	9.8	9.8	9.8	8.8	8.8	8.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.2			8.8			9.8			8.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.2			8.8			9.8			8.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	1.034
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	41.7
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	6	0	25	0	0	0	0	0	6	25	0	0
Initial Fut:	54	0	137	0	0	0	0	637	69	103	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	0	142	0	0	0	0	659	71	107	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	0	142	0	0	0	0	659	71	107	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	56	0	142	0	0	0	0	659	71	107	378	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.00	0.72	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	161	0	408	0	0	0	0	638	728	142	502	0
Capacity Analysis Module:												
Vol/Sat:	0.35	xxxx	0.35	xxxx	xxxx	xxxx	xxxx	1.03	0.10	0.75	0.75	xxxx
Crit Moves:	****							****			****	
Delay/Veh:	12.2	0.0	12.2	0.0	0.0	0.0	0.0	67.7	8.2	23.2	23.2	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.2	0.0	12.2	0.0	0.0	0.0	0.0	67.7	8.2	23.2	23.2	0.0
LOS by Move:	B	*	B	*	*	*	*	F	A	C	C	*
ApproachDel:		12.2			xxxxxx			61.9			23.2	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		12.2			xxxxxx			61.9			23.2	
LOS by Appr:		B			*			F			C	
AllWayAvgQ:	0.5	0.5	0.5	0.0	0.0	0.0	0.0	10.5	0.1	2.6	2.6	2.6

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.197
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.0
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	43	65	28	1	42	5	8	33	41	39	20	1
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:	43	65	28	1	42	5	8	33	41	39	20	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	17	0	0	0	0	1	1	2	17	0	2	0
Initial Fut:	60	65	28	1	42	6	9	35	58	39	22	1
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:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	63	68	29	1	44	6	9	37	61	41	23	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	68	29	1	44	6	9	37	61	41	23	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	63	68	29	1	44	6	9	37	61	41	23	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.43	0.18	0.02	0.86	0.12	0.09	0.34	0.57	0.63	0.35	0.02
Final Sat.:	318	345	149	16	677	97	74	287	476	472	266	12
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.06	0.06	0.06	0.13	0.13	0.13	0.09	0.09	0.09
Crit Moves:		****			****		****				****	
Delay/Veh:	8.3	8.3	8.3	7.7	7.7	7.7	7.7	7.7	7.7	8.0	8.0	8.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.3	8.3	8.3	7.7	7.7	7.7	7.7	7.7	7.7	8.0	8.0	8.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.3			7.7			7.7			8.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.3			7.7			7.7			8.0	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: C[16.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	0	0	0	35	0	81	83	302	0	0	278	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	35	0	81	83	302	0	0	278	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	0	0	0	15	0	2	2	0	0	0	0	15
Initial Fut:	0	0	0	50	0	83	85	302	0	0	278	62
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:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	0	0	56	0	94	96	341	0	0	314	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	56	0	94	96	341	0	0	314	70
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	881	xxxx	349	384	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	320	xxxx	699	1186	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	299	xxxx	699	1186	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	0.13	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	465	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.4	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	16.4	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			16.4			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.441
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.7
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	44	0	66	0	0	0	0	207	30	74	299	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:	44	0	66	0	0	0	0	207	30	74	299	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	12	0	46	0	0	0	0	0	15	55	0	0
Initial Fut:	56	0	112	0	0	0	0	207	45	129	299	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	62	0	124	0	0	0	0	229	50	143	331	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	0	124	0	0	0	0	229	50	143	331	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	62	0	124	0	0	0	0	229	50	143	331	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.85	0.84	0.84	1.00
Lanes:	0.33	0.00	0.67	0.00	0.00	0.00	0.00	1.00	1.00	0.30	0.70	0.00
Final Sat.:	567	0	1134	0	0	0	0	1900	1615	478	1108	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.12	0.03	0.30	0.30	0.00
Crit Moves:			****								****	
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.68	0.00
Volume/Cap:	0.44	0.00	0.44	0.00	0.00	0.00	0.00	0.18	0.05	0.44	0.44	0.00
Uniform Del:	25.4	0.0	25.4	0.0	0.0	0.0	0.0	4.7	4.3	5.9	5.9	0.0
IncremntDel:	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	26.1	0.0	26.1	0.0	0.0	0.0	0.0	4.8	4.3	6.2	6.2	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:	26.1	0.0	26.1	0.0	0.0	0.0	0.0	4.8	4.3	6.2	6.2	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	4	0	4	0	0	0	0	2	0	6	6	0

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.501
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.0
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 2:30-3:30 PM												
Base Vol:	34	0	82	0	0	0	13	559	63	76	403	2
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:	34	0	82	0	0	0	13	559	63	76	403	2
Added Vol:	0	0	8	0	0	0	0	0	0	0	0	0
Project:	10	0	38	0	0	0	0	0	9	32	0	0
Initial Fut:	44	0	120	0	0	0	13	559	72	108	403	2
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	47	0	127	0	0	0	14	593	76	115	428	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	0	127	0	0	0	14	593	76	115	428	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	47	0	127	0	0	0	14	593	76	115	428	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	0.99	0.99	0.85	0.80	0.80	0.80
Lanes:	0.27	0.00	0.73	0.00	0.00	0.00	0.02	0.98	1.00	0.21	0.78	0.01
Final Sat.:	453	0	1236	0	0	0	43	1838	1615	318	1187	6
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.10	0.00	0.00	0.00	0.32	0.32	0.05	0.36	0.36	0.36
Crit Moves:	****										****	
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.72	0.72	0.72	0.72	0.72	0.72
Volume/Cap:	0.50	0.00	0.50	0.00	0.00	0.00	0.45	0.45	0.07	0.50	0.50	0.50
Uniform Del:	28.1	0.0	28.1	0.0	0.0	0.0	4.7	4.7	3.3	4.9	4.9	4.9
IncremntDel:	1.1	0.0	1.1	0.0	0.0	0.0	0.2	0.2	0.0	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.3	0.0	29.3	0.0	0.0	0.0	4.9	4.9	3.3	5.3	5.3	5.3
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:	29.3	0.0	29.3	0.0	0.0	0.0	4.9	4.9	3.3	5.3	5.3	5.3
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	4	0	4	0	0	0	6	6	1	6	6	6

Note: Queue reported is the number of cars per lane.

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to HIGGINS ASSOC., GILROY

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.502
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.0
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:15-5:15 PM												
Base Vol:	48	0	112	0	0	0	0	637	63	78	365	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:	48	0	112	0	0	0	0	637	63	78	365	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Project:	6	0	25	0	0	0	0	0	6	25	0	0
Initial Fut:	54	0	137	0	0	0	0	637	69	103	365	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	56	0	142	0	0	0	0	659	71	107	378	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	0	142	0	0	0	0	659	71	107	378	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	56	0	142	0	0	0	0	659	71	107	378	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	1.00	0.85	0.75	0.75	1.00
Lanes:	0.28	0.00	0.72	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	478	0	1213	0	0	0	0	1900	1615	314	1114	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.35	0.04	0.34	0.34	0.00
Crit Moves:	****							****				
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.69	0.69	0.69	0.69	0.00
Volume/Cap:	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.50	0.06	0.49	0.49	0.00
Uniform Del:	26.6	0.0	26.6	0.0	0.0	0.0	0.0	5.8	4.0	5.7	5.7	0.0
IncremntDel:	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.3	0.0	0.4	0.4	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	27.7	0.0	27.7	0.0	0.0	0.0	0.0	6.1	4.0	6.1	6.1	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:	27.7	0.0	27.7	0.0	0.0	0.0	0.0	6.1	4.0	6.1	6.1	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	5	0	5	0	0	0	0	8	1	6	6	0

Note: Queue reported is the number of cars per lane.

APPENDIX E

INTERSECTION LEVELS OF SERVICE CALCULATIONS

CUMULATIVE PLUS PROJECT (PHASE 2) CONDITIONS

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7001 41st/Brommer-Jade

Cycle (sec): 80 Critical Vol./Cap.(X): 0.454
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 25 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	24	414	46	79	328	130	152	97	29	53	92	78
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:	24	414	46	79	328	130	152	97	29	53	92	78
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	26	450	50	86	357	141	165	105	32	58	100	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	450	50	86	357	141	165	105	32	58	100	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	26	450	50	86	357	141	165	105	32	58	100	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.91	0.91	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.80	0.20	1.00	1.43	0.57	0.61	0.39	1.00	0.37	0.63	1.00
Final Sat.:	1805	3200	356	1805	2474	981	1125	718	1615	682	1184	1615
Capacity Analysis Module:												
Vol/Sat:	0.01	0.14	0.14	0.05	0.14	0.14	0.15	0.15	0.02	0.08	0.08	0.05
Crit Moves:		****		****			****			****		
Green/Cycle:	0.04	0.31	0.31	0.10	0.38	0.38	0.32	0.32	0.32	0.19	0.19	0.19
Volume/Cap:	0.38	0.45	0.45	0.45	0.38	0.38	0.45	0.45	0.06	0.45	0.45	0.28
Uniform Del:	37.6	22.2	22.2	33.6	18.1	18.1	21.4	21.4	18.7	28.9	28.9	28.0
IncremntDel:	3.5	0.3	0.3	1.7	0.2	0.2	0.5	0.5	0.0	0.9	0.9	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.1	22.5	22.5	35.4	18.3	18.3	22.0	22.0	18.7	29.9	29.9	28.5
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:	41.1	22.5	22.5	35.4	18.3	18.3	22.0	22.0	18.7	29.9	29.9	28.5
LOS by Move:	D	C	C	D	B	B	C	C	B	C	C	C
HCM2kAvgQ:	1	6	6	3	5	5	6	6	1	4	4	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.274
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	62	79	45	4	91	72	54	26	72	51	32	3
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:	62	79	45	4	91	72	54	26	72	51	32	3
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	86	49	4	99	78	59	28	78	55	35	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	86	49	4	99	78	59	28	78	55	35	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	67	86	49	4	99	78	59	28	78	55	35	3
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.43	0.24	0.02	0.55	0.43	0.36	0.17	0.47	0.60	0.37	0.03
Final Sat.:	246	313	178	18	413	327	256	123	341	390	245	23
Capacity Analysis Module:												
Vol/Sat:	0.27	0.27	0.27	0.24	0.24	0.24	0.23	0.23	0.23	0.14	0.14	0.14
Crit Moves:	****			****				****			****	
Delay/Veh:	9.3	9.3	9.3	8.8	8.8	8.8	8.9	8.9	8.9	8.8	8.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.3	9.3	9.3	8.8	8.8	8.8	8.9	8.9	8.9	8.8	8.8	8.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.3			8.8			8.9			8.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.3			8.8			8.9			8.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #7003 45th/Capitola

****

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 0 Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	60	0	118	0	0	0	0	224	48	135	323	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:	60	0	118	0	0	0	0	224	48	135	323	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	65	0	128	0	0	0	0	243	52	147	351	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	0	128	0	0	0	0	243	52	147	351	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	65	0	128	0	0	0	0	243	52	147	351	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.34	0.00	0.66	0.00	0.00	0.00	0.00	1.00	1.00	0.29	0.71	0.00
Final Sat.:	209	0	411	0	0	0	0	637	727	211	505	0
Capacity Analysis Module:												
Vol/Sat:	0.31	xxxx	0.31	xxxx	xxxx	xxxx	xxxx	0.38	0.07	0.69	0.69	xxxx
Crit Moves:	****							****		****		
Delay/Veh:	10.5	0.0	10.5	0.0	0.0	0.0	0.0	11.4	7.8	18.0	18.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	0.0	10.5	0.0	0.0	0.0	0.0	11.4	7.8	18.0	18.0	0.0
LOS by Move:	B	*	B	*	*	*	*	B	A	C	C	*
ApproachDel:	10.5			xxxxxx			10.8			18.0		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	10.5			xxxxxx			10.8			18.0		
LOS by Appr:	B			*			B			C		
AllWayAvgQ:	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.6	0.1	2.0	2.0	2.0

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.189
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.8
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	63	53	30	0	36	6	5	13	53	22	21	2
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	53	30	0	36	6	5	13	53	22	21	2
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	68	58	33	0	39	7	5	14	58	24	23	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	58	33	0	39	7	5	14	58	24	23	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	68	58	33	0	39	7	5	14	58	24	23	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.43	0.36	0.21	0.00	0.86	0.14	0.07	0.18	0.75	0.49	0.47	0.04
Final Sat.:	363	305	173	0	705	117	61	159	649	376	359	34
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	xxxx	0.06	0.06	0.09	0.09	0.09	0.06	0.06	0.06
Crit Moves:		****			****				****		****	
Delay/Veh:	8.1	8.1	8.1	0.0	7.5	7.5	7.3	7.3	7.3	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.1	8.1	8.1	0.0	7.5	7.5	7.3	7.3	7.3	7.8	7.8	7.8
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		8.1			7.5			7.3			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.1			7.5			7.3			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[16.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	54	0	48	72	235	0	0	336	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	54	0	48	72	235	0	0	336	71
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	59	0	52	78	255	0	0	365	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	59	0	52	78	255	0	0	365	77
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	816	xxxx	404	442	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	349	xxxx	651	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	330	xxxx	651	1128	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.18	xxxx	0.08	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	430	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.0	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	16.3	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			16.3			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #7003 45th/Capitola

****

Cycle (sec): 80 Critical Vol./Cap.(X): 0.463
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 25 Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	11 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	60	0	118	0	0	0	0	224	48	135	323	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:	60	0	118	0	0	0	0	224	48	135	323	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	65	0	128	0	0	0	0	243	52	147	351	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	0	128	0	0	0	0	243	52	147	351	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	65	0	128	0	0	0	0	243	52	147	351	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	1.00	0.85	0.83	0.83	1.00
Lanes:	0.34	0.00	0.66	0.00	0.00	0.00	0.00	1.00	1.00	0.29	0.71	0.00
Final Sat.:	573	0	1127	0	0	0	0	1900	1615	464	1111	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.13	0.03	0.32	0.32	0.00
Crit Moves:			****								****	
Green/Cycle:	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.68	0.00
Volume/Cap:	0.46	0.00	0.46	0.00	0.00	0.00	0.00	0.19	0.05	0.46	0.46	0.00
Uniform Del:	25.7	0.0	25.7	0.0	0.0	0.0	0.0	4.7	4.2	6.0	6.0	0.0
IncremntDel:	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	26.6	0.0	26.6	0.0	0.0	0.0	0.0	4.8	4.2	6.3	6.3	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:	26.6	0.0	26.6	0.0	0.0	0.0	0.0	4.8	4.2	6.3	6.3	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	5	0	5	0	0	0	0	2	0	6	6	0

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #7001 41st/Brommer-Jade

****

Cycle (sec):	80	Critical Vol./Cap.(X):	0.506
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	23.1
Optimal Cycle:	27	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 1 0			1 0 1 1 0			0 1 0 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	55	562	54	93	484	112	140	119	75	59	107	105
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:	55	562	54	93	484	112	140	119	75	59	107	105
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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	57	581	56	96	500	116	145	123	77	61	111	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	581	56	96	500	116	145	123	77	61	111	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	581	56	96	500	116	145	123	77	61	111	108
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.92	0.92	0.97	0.97	0.85	0.98	0.98	0.85
Lanes:	1.00	1.82	0.18	1.00	1.62	0.38	0.54	0.46	1.00	0.36	0.64	1.00
Final Sat.:	1805	3251	312	1805	2850	659	1000	850	1615	664	1204	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.18	0.05	0.18	0.18	0.14	0.14	0.05	0.09	0.09	0.07
Crit Moves:		****		****			****			****		
Green/Cycle:	0.07	0.35	0.35	0.11	0.39	0.39	0.29	0.29	0.29	0.18	0.18	0.18
Volume/Cap:	0.45	0.51	0.51	0.51	0.45	0.45	0.51	0.51	0.17	0.51	0.51	0.37
Uniform Del:	35.7	20.4	20.4	33.8	18.2	18.2	23.9	23.9	21.4	29.5	29.5	28.7
IncremntDel:	2.6	0.3	0.3	2.2	0.2	0.2	0.8	0.8	0.2	1.2	1.2	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.3	20.7	20.7	36.0	18.4	18.4	24.7	24.7	21.6	30.8	30.8	29.5
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:	38.3	20.7	20.7	36.0	18.4	18.4	24.7	24.7	21.6	30.8	30.8	29.5
LOS by Move:	D	C	C	D	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	7	7	3	6	6	6	6	1	4	4	3

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec): 100 Critical Vol./Cap.(X): 0.253
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	63	77	36	7	55	69	69	33	38	32	36	7
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	77	36	7	55	69	69	33	38	32	36	7
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	68	84	39	8	60	75	75	36	41	35	39	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	84	39	8	60	75	75	36	41	35	39	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	68	84	39	8	60	75	75	36	41	35	39	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.36	0.44	0.20	0.05	0.42	0.53	0.49	0.24	0.27	0.43	0.48	0.09
Final Sat.:	271	331	155	42	328	412	358	171	197	296	333	65
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.25	0.18	0.18	0.18	0.21	0.21	0.21	0.12	0.12	0.12
Crit Moves:		****		****			****			****		
Delay/Veh:	9.0	9.0	9.0	8.3	8.3	8.3	8.8	8.8	8.8	8.5	8.5	8.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.0	9.0	9.0	8.3	8.3	8.3	8.8	8.8	8.8	8.5	8.5	8.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.0			8.3			8.8			8.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.0			8.3			8.8			8.5	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	100	Critical Vol./Cap.(X):	1.043
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	47.7
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	47	0	127	0	0	0	15	603	77	114	435	3
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:	47	0	127	0	0	0	15	603	77	114	435	3
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	50	0	135	0	0	0	16	640	82	121	462	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	0	135	0	0	0	16	640	82	121	462	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	0	135	0	0	0	16	640	82	121	462	3
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.00	0.73	0.00	0.00	0.00	0.02	0.98	1.00	0.20	0.79	0.01
Final Sat.:	153	0	412	0	0	0	15	614	718	134	513	4
Capacity Analysis Module:												
Vol/Sat:	0.33	xxxx	0.33	xxxx	xxxx	xxxx	1.04	1.04	0.11	0.90	0.90	0.90
Crit Moves:	****							****			****	
Delay/Veh:	12.2	0.0	12.2	0.0	0.0	0.0	70.9	70.9	8.4	38.3	38.3	38.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.2	0.0	12.2	0.0	0.0	0.0	70.9	70.9	8.4	38.3	38.3	38.3
LOS by Move:	B	*	B	*	*	*	F	F	A	E	E	E
ApproachDel:		12.2			xxxxxx			64.0			38.3	
Delay Adj:		1.00			xxxxx			1.00			1.00	
ApprAdjDel:		12.2			xxxxxx			64.0			38.3	
LOS by Appr:		B			*			F			E	
AllWayAvgQ:	0.5	0.5	0.5	0.0	0.0	0.0	10.9	10.9	0.1	5.4	5.4	5.4

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.172
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	59	49	20	0	51	6	5	30	72	22	23	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	49	20	0	51	6	5	30	72	22	23	2
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	64	53	22	0	55	7	5	33	78	24	25	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	53	22	0	55	7	5	33	78	24	25	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	64	53	22	0	55	7	5	33	78	24	25	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.46	0.38	0.16	0.00	0.89	0.11	0.05	0.28	0.67	0.47	0.49	0.04
Final Sat.:	372	309	126	0	714	84	40	242	580	357	373	32
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	xxxx	0.08	0.08	0.13	0.13	0.13	0.07	0.07	0.07
Crit Moves:		****				****		****			****	
Delay/Veh:	8.2	8.2	8.2	0.0	7.7	7.7	7.6	7.6	7.6	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	8.2	0.0	7.7	7.7	7.6	7.6	7.6	7.8	7.8	7.8
LOS by Move:	A	A	A	*	A	A	A	A	A	A	A	A
ApproachDel:		8.2			7.7			7.6			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			7.7			7.6			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: B[14.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	67	0	71	64	226	0	0	261	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	67	0	71	64	226	0	0	261	60
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	73	0	77	70	246	0	0	284	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	73	0	77	70	246	0	0	284	65
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	701	xxxx	316	349	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	408	xxxx	729	1221	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	389	xxxx	729	1221	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	0.11	0.06	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	512	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	14.9	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			14.9			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.554
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.2
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	47	0	127	0	0	0	15	603	77	114	435	3
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:	47	0	127	0	0	0	15	603	77	114	435	3
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	50	0	135	0	0	0	16	640	82	121	462	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	0	135	0	0	0	16	640	82	121	462	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	0	135	0	0	0	16	640	82	121	462	3
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	0.99	0.99	0.85	0.77	0.77	0.77
Lanes:	0.27	0.00	0.73	0.00	0.00	0.00	0.02	0.98	1.00	0.20	0.79	0.01
Final Sat.:	456	0	1233	0	0	0	46	1832	1615	300	1146	8
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.11	0.00	0.00	0.00	0.35	0.35	0.05	0.40	0.40	0.40
Crit Moves:	****										****	
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.73	0.73	0.73	0.73	0.73	0.73
Volume/Cap:	0.55	0.00	0.55	0.00	0.00	0.00	0.48	0.48	0.07	0.55	0.55	0.55
Uniform Del:	28.9	0.0	28.9	0.0	0.0	0.0	4.6	4.6	3.1	5.0	5.0	5.0
IncremntDel:	2.0	0.0	2.0	0.0	0.0	0.0	0.3	0.3	0.0	0.6	0.6	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	31.0	0.0	31.0	0.0	0.0	0.0	4.8	4.8	3.2	5.6	5.6	5.6
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:	31.0	0.0	31.0	0.0	0.0	0.0	4.8	4.8	3.2	5.6	5.6	5.6
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	5	0	5	0	0	0	7	7	1	7	7	7

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #7001 41st/Brommer-Jade

****

Cycle (sec): 80 Critical Vol./Cap.(X): 0.570
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 25.0
Optimal Cycle: 30 Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	75	559	68	104	553	134	146	142	109	96	98	98
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:	75	559	68	104	553	134	146	142	109	96	98	98
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	80	596	72	111	590	143	156	151	116	102	104	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	596	72	111	590	143	156	151	116	102	104	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
Final Vol.:	80	596	72	111	590	143	156	151	116	102	104	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.92	0.92	0.98	0.98	0.85	0.98	0.98	0.85
Lanes:	1.00	1.78	0.22	1.00	1.61	0.39	0.51	0.49	1.00	0.49	0.51	1.00
Final Sat.:	1805	3167	385	1805	2822	684	939	913	1615	918	937	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.19	0.06	0.21	0.21	0.17	0.17	0.07	0.11	0.11	0.06
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.33	0.33	0.11	0.36	0.36	0.29	0.29	0.29	0.20	0.20	0.20
Volume/Cap:	0.58	0.57	0.57	0.57	0.58	0.58	0.57	0.57	0.25	0.57	0.57	0.33
Uniform Del:	35.7	22.1	22.1	33.9	20.6	20.6	24.1	24.1	21.7	29.1	29.1	27.7
IncremntDel:	6.0	0.7	0.7	4.0	0.7	0.7	1.5	1.5	0.3	2.1	2.1	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.6	22.8	22.8	37.9	21.3	21.3	25.6	25.6	21.9	31.3	31.3	28.3
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:	41.6	22.8	22.8	37.9	21.3	21.3	25.6	25.6	21.9	31.3	31.3	28.3
LOS by Move:	D	C	C	D	C	C	C	C	C	C	C	C
HCM2kAvgQ:	3	8	8	4	8	8	7	7	2	5	5	2

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7002 45th/Jade-Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.322
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.3
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 11 Jun 2000 << 5:00-6:00 PM												
Base Vol:	52	67	37	8	55	108	93	71	47	31	48	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	67	37	8	55	108	93	71	47	31	48	5
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	73	40	9	60	117	101	77	51	34	52	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	73	40	9	60	117	101	77	51	34	52	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	57	73	40	9	60	117	101	77	51	34	52	5
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.33	0.43	0.24	0.05	0.32	0.63	0.44	0.34	0.22	0.37	0.57	0.06
Final Sat.:	235	302	167	35	241	473	314	240	159	244	378	39
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.25	0.25	0.25	0.32	0.32	0.32	0.14	0.14	0.14
Crit Moves:		****				****		****		****		
Delay/Veh:	9.2	9.2	9.2	8.9	8.9	8.9	9.9	9.9	9.9	8.8	8.8	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	9.2	9.2	8.9	8.9	8.9	9.9	9.9	9.9	8.8	8.8	8.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.2			8.9			9.9			8.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.2			8.9			9.9			8.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #7003 45th/Capitola

****

Cycle (sec): 100 Critical Vol./Cap.(X): 1.136
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 59.4
Optimal Cycle: 0 Level Of Service: F

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	58	0	146	0	0	0	0	687	74	110	394	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:	58	0	146	0	0	0	0	687	74	110	394	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	60	0	151	0	0	0	0	711	77	114	408	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	151	0	0	0	0	711	77	114	408	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	60	0	151	0	0	0	0	711	77	114	408	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.00	0.72	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	160	0	404	0	0	0	0	626	713	139	499	0
Capacity Analysis Module:												
Vol/Sat:	0.37	xxxx	0.37	xxxx	xxxx	xxxx	xxxx	1.14	0.11	0.82	0.82	xxxx
Crit Moves:			****					****			****	
Delay/Veh:	12.7	0.0	12.7	0.0	0.0	0.0	0.0	101	8.4	28.5	28.5	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.7	0.0	12.7	0.0	0.0	0.0	0.0	101	8.4	28.5	28.5	0.0
LOS by Move:	B	*	B	*	*	*	*	F	A	D	D	*
ApproachDel:	12.7			xxxxxx			92.4			28.5		
Delay Adj:	1.00			xxxxx			1.00			1.00		
ApprAdjDel:	12.7			xxxxxx			92.4			28.5		
LOS by Appr:	B			*			F			D		
AllWayAvgQ:	0.5	0.5	0.5	0.0	0.0	0.0	0.0	16.2	0.1	3.5	3.5	3.5

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7004 47th/Topaz

Cycle (sec):	100	Critical Vol./Cap.(X):	0.217
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.1
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 3 Jun 2008 << 4:45-5:45 PM												
Base Vol:	64	71	31	2	46	7	10	38	62	43	24	2
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:	64	71	31	2	46	7	10	38	62	43	24	2
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:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	67	74	32	2	48	7	10	40	65	45	25	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	74	32	2	48	7	10	40	65	45	25	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	67	74	32	2	48	7	10	40	65	45	25	2
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.43	0.19	0.03	0.84	0.13	0.09	0.35	0.56	0.62	0.35	0.03
Final Sat.:	309	343	150	28	650	99	75	284	464	461	257	21
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.07	0.07	0.07	0.14	0.14	0.14	0.10	0.10	0.10
Crit Moves:			****		****		****			****		
Delay/Veh:	8.5	8.5	8.5	7.8	7.8	7.8	7.8	7.8	7.8	8.1	8.1	8.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.5	8.5	8.5	7.8	7.8	7.8	7.8	7.8	7.8	8.1	8.1	8.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.5			7.8			7.8			8.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.5			7.8			7.8			8.1	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7005 47th/Portola-Opal_Cliff

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: C[17.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	53	0	90	92	326	0	0	300	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:	0	0	0	53	0	90	92	326	0	0	300	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	58	0	98	100	354	0	0	326	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	58	0	98	100	354	0	0	326	72
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	916	xxxx	362	398	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	305	xxxx	687	1172	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	284	xxxx	687	1172	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.20	xxxx	0.14	0.09	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	450	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.5	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	17.2	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			17.2			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7003 45th/Capitola

Cycle (sec):	80	Critical Vol./Cap.(X):	0.554
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.4
Optimal Cycle:	30	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0	0
Volume Module:												
Base Vol:	58	0	146	0	0	0	0	687	74	110	394	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:	58	0	146	0	0	0	0	687	74	110	394	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:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	60	0	151	0	0	0	0	711	77	114	408	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	151	0	0	0	0	711	77	114	408	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	60	0	151	0	0	0	0	711	77	114	408	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	1.00	0.85	0.71	0.71	1.00
Lanes:	0.28	0.00	0.72	0.00	0.00	0.00	0.00	1.00	1.00	0.22	0.78	0.00
Final Sat.:	481	0	1211	0	0	0	0	1900	1615	294	1052	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.37	0.05	0.39	0.39	0.00
Crit Moves:	****										****	
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.70	0.00
Volume/Cap:	0.55	0.00	0.55	0.00	0.00	0.00	0.00	0.53	0.07	0.55	0.55	0.00
Uniform Del:	27.4	0.0	27.4	0.0	0.0	0.0	0.0	5.8	3.8	5.9	5.9	0.0
IncremntDel:	1.8	0.0	1.8	0.0	0.0	0.0	0.0	0.4	0.0	0.7	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	29.2	0.0	29.2	0.0	0.0	0.0	0.0	6.2	3.8	6.6	6.6	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:	29.2	0.0	29.2	0.0	0.0	0.0	0.0	6.2	3.8	6.6	6.6	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	5	0	5	0	0	0	0	9	1	7	7	0

Note: Queue reported is the number of cars per lane.

APPENDIX F

NEIGHBORHOOD TRAFFIC-RELATED QUALITY OF LIFE CONSIDERATIONS

NEIGHBORHOOD TRAFFIC-RELATED QUALITY-OF-LIFE CONSIDERATIONS

1. Introduction

Several studies have been made regarding the effects of traffic on the quality-of-life in residential neighborhoods. The variables affecting these impacts include traffic volumes, type, or makeup, of traffic (i.e. passenger cars, trucks, motorcycles, emergency vehicles, etc.), traffic speed, perception of through traffic as a percentage of total traffic, adequacy of street alignment (i.e. horizontal and vertical curvature), accident experience, on-street parking, residential dwelling set backs from the street, pedestrian traffic, and street pavement conditions (which would add to traffic noise as the pavement deteriorates). Other factors that may be a contributor to neighborhood nuisance levels include socio-economic status of the neighborhood, and expectations of the residents regarding traffic volumes.

This discussion summarizes most current literature related to this subject. General guidelines regarding threshold volumes for levels of service pertaining to local streets is provided.

2. Summary of literature

a. American Society of Civil Engineers

In a study entitled, "Improving the Residential Street Environment", the nuisance threshold was found to be 800 to 3,000 vehicles per day depending upon the socio-economic status of the neighborhood. This study was made by the Federal Highway Administration, May, 1981. Another study indicates 6,500 to 10,000 vehicles per day as a threshold that some neighbors would leave the neighborhood, ("Visual Intrusion Impacts of Residential Impact", Transportation Engineering Journal of ASCE, September, 1981).

b. Institute of Transportation Engineers

The Institute of Transportation Engineers states the following:

> There are four broad functional classifications of streets within urban areas, as outlined below:
>
> Local streets represent the lowest traffic category. Their primary function is to serve abutting land use. Typical residential Average Daily Traffic (ADT) ranges from 100 to 1,500, with morning peak hour traffic about 7 to 8 percent and afternoon peak hour traffic about 10 percent of ADT.
>
> Collector streets have the primary purpose of intercepting traffic from intersecting local streets and carrying this movement to the nearest major streets. A secondary function is service to abutting land use. Collector streets also may carry bus lines within a residential subdivision and might connect to neighborhood shopping, schools, or parks within, or at the boundary of, the subdivisions. ADT's are typically 1,500 to 3,500 in residential areas, with similar proportions of peak hour traffic as for the local streets.

Major streets have the primary purpose of carrying through traffic and the secondary purpose of providing access to abutting property. ADT's are typically in excess of 3,500. The ranges in ADT may, of course, overlap, and the above figures are not intended as design criteria.

"Guidelines for Residential Subdivision Street Design", 1993.

c. "Livable Streets"

The following quote is from *Livable Streets*, by Donald Appleyard, University of California Press, 1981.

> "The concept of setting environmental capacities for streets originated in the Buchanan Report. Since then there have been one or two efforts to develop this concept into operational schemes. The *Kensington Environmental Management Study* (1966) proposed a measure depending on the acceptable delay time for pedestrians. This standard set limits on the capacity of most residential streets at 200 vehicles per peak hour, or between 2,000 and 3,000 ADT (Average Daily Trips). On the other hand, a more recent study put the limiting capacity of streets in Louisville, Kentucky, at an amazing 14,000 ADT for a street of single-family houses (Sharpe and Maxman, 1972), and a report for San Luis Obispo, California, found ADT's of up to 4,000 a day acceptable (JHK Associates, 1974). This wide range of acceptability indicates the difficulty of setting standards.
>
> Problems for residents can begin with very small volumes of traffic. On three San Francisco streets with only 400 to 500 vehicles per day, 40 to 50 percent of the residents were disturbed about danger for children because of hot-rodders or short-cutters. The environmental capacity of most residential streets might, therefore, be reached in the 500 to 800 vehicles per day range. The speed of drivers must also be considered. Speed limits even for the top 15 percent should be in the 15 to 20 mph range for children to be secure. These figures also depend on the vulnerability of residents who live on the streets: streets with large numbers of small children should have more stringent standards".

The characteristics of the streets studied in San Francisco are as follows:

<u>TRAFFIC VOLUMES</u>

LIGHT streets 0 to 2,000 vehicles per day
MEDIUM streets 2,000 to 10,000 vehicles per day
HEAVY streets 10,000 to 20,000 vehicles per day
VERY HEAVY streets over 20,000 vehicles per day

<u>STREET ENVIRONMENTS</u>

As expected, street width and number of moving lanes increased with traffic volume. Other characteristics did not. Building heights were almost uniform, ranging from 21 to 28 feet, in all street types.

LIGHT streets usually had parking on both sides and two moving lanes. Two-thirds of them were lined with single-family houses, and the rest with duplexes or apartments; the average setbacks were about 24 feet including sidewalk (about 9 feet average), deeper than on other streets. Street trees were fewer on these streets (3.2 per block), probably because the city expects residents to plant in their yards. Distance to food stores was slightly further on these streets (1.3 blocks). Slightly more houses had "social amenities", such as benches and sitting places.

MEDIUM streets were characterized by much smaller set-backs (average only 4 feet) but had wider sidewalks (15 feet). Nearly 70 percent of these streets were lined with duplexes or apartments. Street trees were much more common on these street blocks, and they were the nearest to food stores.

HEAVY streets had smaller setbacks with nearly 60 percent of the blocks lined with duplexes and apartments. Street pavements were wider, with three to four moving lanes.

VERY HEAVY streets, of which there were only three, were the widest, with an average pavement width of 72 feet, and between four and six moving lanes. Sidewalks were as narrow on those on LIGHT streets, and setbacks averaged only 7 feet. On the other hand, 70 percent of their length was lined with single-family houses, though setbacks were narrow (average 7 feet). More houses (25 percent) had protective devices of some kind. Average speeds were about the same as on MEDIUM and HEAVY streets because of synchronized signaling. They had less on-street parking spaces per block.

d. Traffic Infusion on Residential Environment (TIRE)

Level of service is a measure of congestion experienced by through traffic while TIRE is a measure of the impact of traffic on residents along a street. The TIRE index scale ranges from 0 to 5 depending on daily traffic volume. An index of 0 represents the least infusion of traffic and 5 the greatest, and, thereby, poorest residential environment. Typical street types associated with the various index levels are shown on the TIRE index chart.

TIRE INDEX CHART

TIRE Index	Daily Traffic Volume	Residential Environment Typical of:
0	1	A cul-de-sac street with one home.
1	10	A cul-de-sac street with 2 to 15 homes.
2	100	A 2-lane minor street.
3	1,000	A 2-lane collector or arterial street.
4	10,000	A 2 to 6-lane arterial street.
5	100,000	

The TIRE index is derived from a theory by D.K. Goodrich based on work by Appleyard of the University of California at Berkeley, and by Buchanan of the Ministry of Transport, England. TIRE is based on the theory that a given increase in traffic volume has a greater impact on residential environment along a residential street with a low traffic volume than along a street with a high pre-existing volume. TIRE effects are separate from noise and air pollution impacts. TIRE represents the effect of traffic on the safety and comfort of human activities such as walking, cycling, and playing on or near a street and on the freedom to maneuver personal autos in and out of residential driveways.

The TIRE Index Table gives TIRE values associated with various daily traffic volume ranges. The mathematical relationships are logarithmic. A street with a TIRE value of three or greater is considered to function primarily as a traffic street and to exhibit significantly impaired residential environment. The projected difference between a pre-and post-project TIRE value is the predicted impact of the project on residential environment. Any projected change of 0.1 or greater would be noticeable to residents.

TIRE INDEX TABLE

Vehicles Per Day[1]	Tire Index	Vehicles Per Day[1]	Tire Index
6-7	0.8	711-890	2.9
7-8	0.9	891-1,100	3.0
9-10	1.0	1,101-1,400	3.1
11-14	1.1	1,401-1,800	3.2
15-17	1.2	1,801-2,200	3.3
18-22	1.3	2,201-2800	3.4
23-28	1.4	2,801-3,500	3.5
29-35	1.5	3,501-4,500	3.6
36-44	1.6	4,501-5,600	3.7
45-56	1.7	5,601-7,100	3.8
57-70	1.8	7,101-8,900	3.9
71-89	1.9	8,901-11,000	4.0
90-112	2.0	11,001-14,000	4.1
113-140	2.1	14,001-18,000	4.2
141-180	2.2	18,001-22,000	4.3
181-220	2.3	22,001-28,000	4.4
221-280	2.4	28,001-35,000	4.5
281-350	2.5	35,001-45,000	4.6
351-450	2.6	45,001-56,000	4.7
451-560	2.7	56,001-71,000	4.8
561-710	2.8	71,001-89,000	4.9

Source: D.K. Goodrich
[1] Range

3. Recommended Level of Service Thresholds

The varying criteria provided in the literature leads to the following typical daily traffic volume thresholds.

Level of Service	Average Daily Traffic
A	1,200
B	1,400
C	1,600
D	1,800
E	2,000
F	Greater than 2,000

These assume that the midrange value of about 1,800 vehicles per day established by the Federal Highway Administration represents a D Level of Service. The Institute of Transportation Engineers recommended 1,500 ADT maximum is assumed to fall into a C Level of Service.

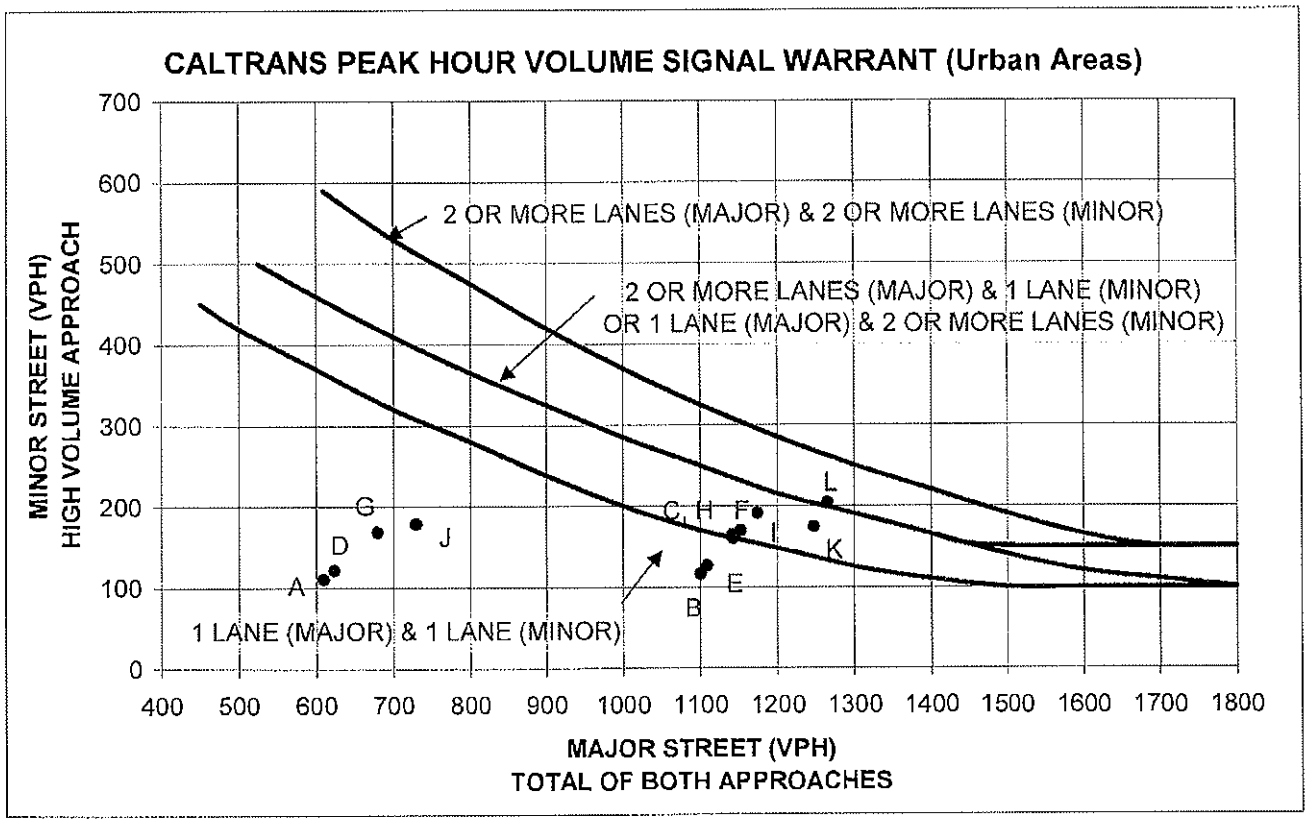
These values are slightly higher than the following values recommended by D.K. Goodrich. The TIRE (Traffic Infusion on Residential Environment) index of 3.0 corresponds with a maximum ADT of 1,000, which is just below the threshold for level of service A. This is a desirable goal to achieve in project design but perhaps unrealistically low for limiting traffic in established neighborhoods. The guideline of an increase of 0.1 in the TIRE index, recommended by Goodrich, is a good gauge of what level of traffic increase can be expected to be noticeable. The level of service thresholds should be used as a guide for evaluating whether a traffic increase is acceptable.

The 2,000 ADT corresponds with the maximum established for light traffic volume streets by Appleyard. It is generally consistent with the Kensington study. This is defined herein as Level of Service F, a possible quality-of-life capacity of neighborhood streets.

APPENDIX G

PEAK HOUR SIGNAL WARRANTS

Intersection #3
45th Avenue / Capitola Road



Scenario	Major Street East/West	Minor Street North/South	Warrant Met
A. Existin AM	610	110	no
B. Existin MID	1101	116	no
C. Existin PM	1143	160	yes
D. Ex+Ph1 AM	624	121	no
E. Ex+Ph1 MID	1110	126	no
F. Ex+Ph1 PM	1152	169	yes
G. Ex+Ph2 AM	680	168	no
H. Ex+Ph2 MID	1142	164	yes
I. Ex+Ph2 PM	1174	191	yes
J. Cuml+Ph2 AM	730	178	no
K. Cuml+Ph2 MID	1247	174	yes
L. Cuml+Ph2 PM	1265	204	yes

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

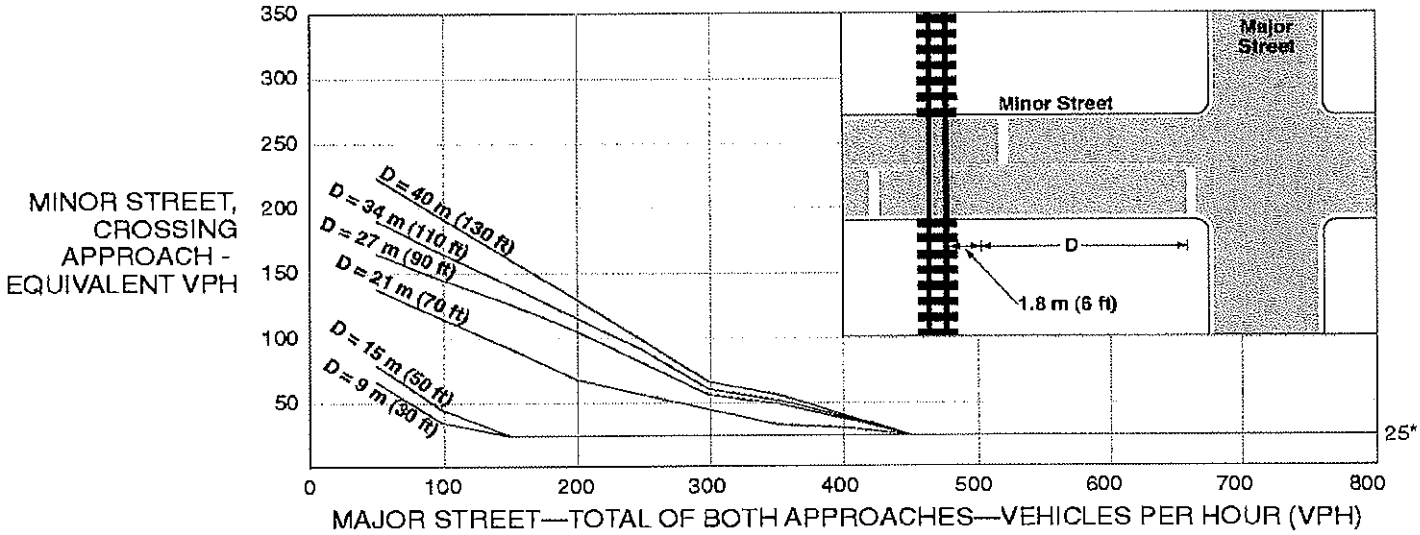
2. Bold line applies to intersection geometry.

APPENDIX H

INTERSECTION NEAR A HIGHWAY-RAIL GRADE CROSSING SIGNAL WARRANTS

Intersection #5
47th Avenue / Portola Drive

Figure 4C-9. Warrant 9, Intersection Near a Highway-Rail Grade Crossing (One Approach Lane at the Track Crossing)



* Note: 25 vph applies as the lower threshold volume.

Scenario		Major Street East/West	Minor Street Crossing	Warrant Met
A.	Existin PM	710	116	yes
B.	Ex+Ph1 PM	715	120	yes
C.	Ex+Ph2 PM	727	133	yes
D.	Cuml+Ph2 PM	784	143	yes

Notes:

1. 25 VPH applies as the lower threshold volume for a minor street approach.

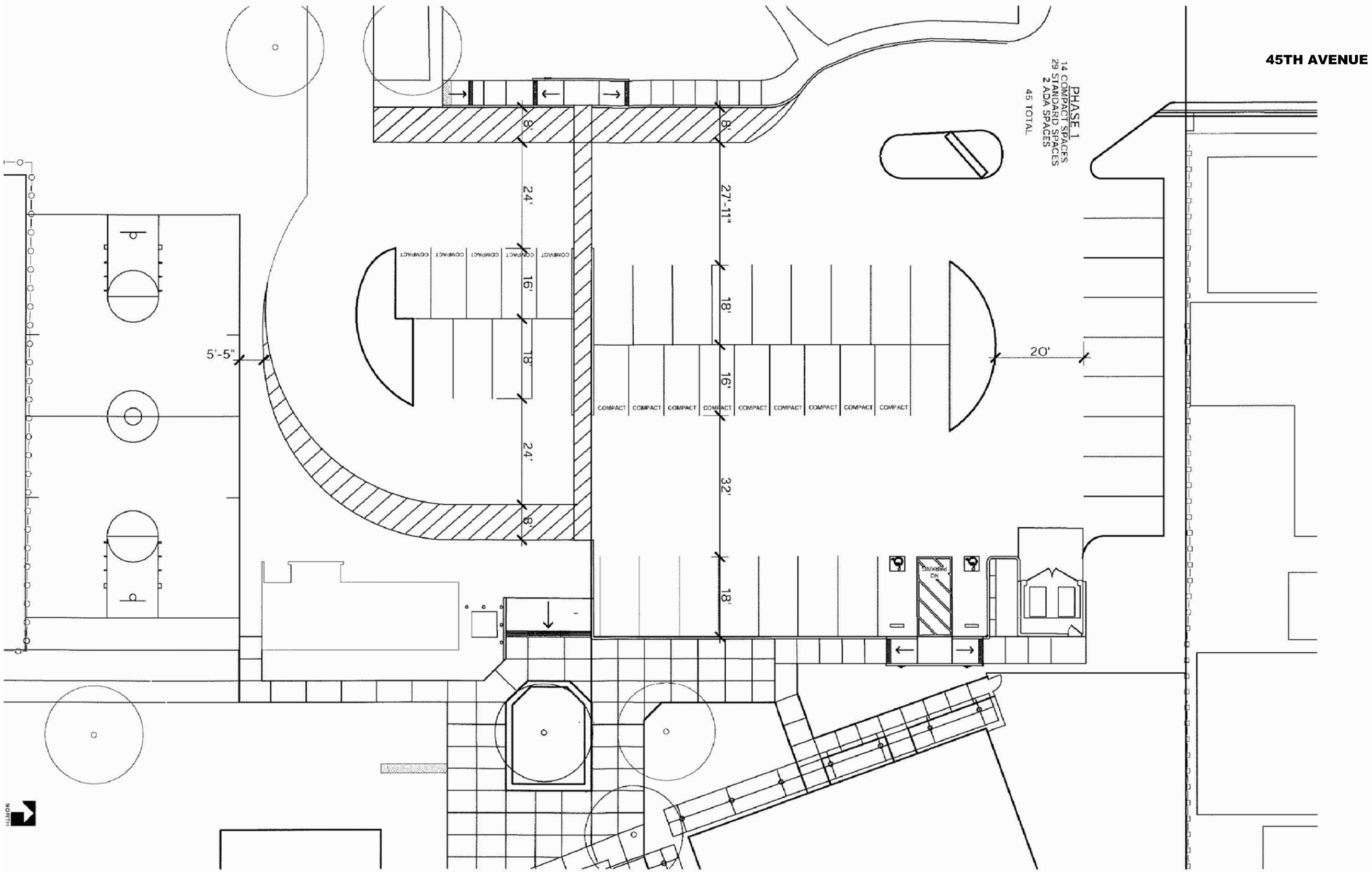


EXHIBIT 2A
PROPOSED PARKING LAYOUT
PHASE 1

SOURCE: WESTON MILES ARCHITECTS, AUGUST 2008.

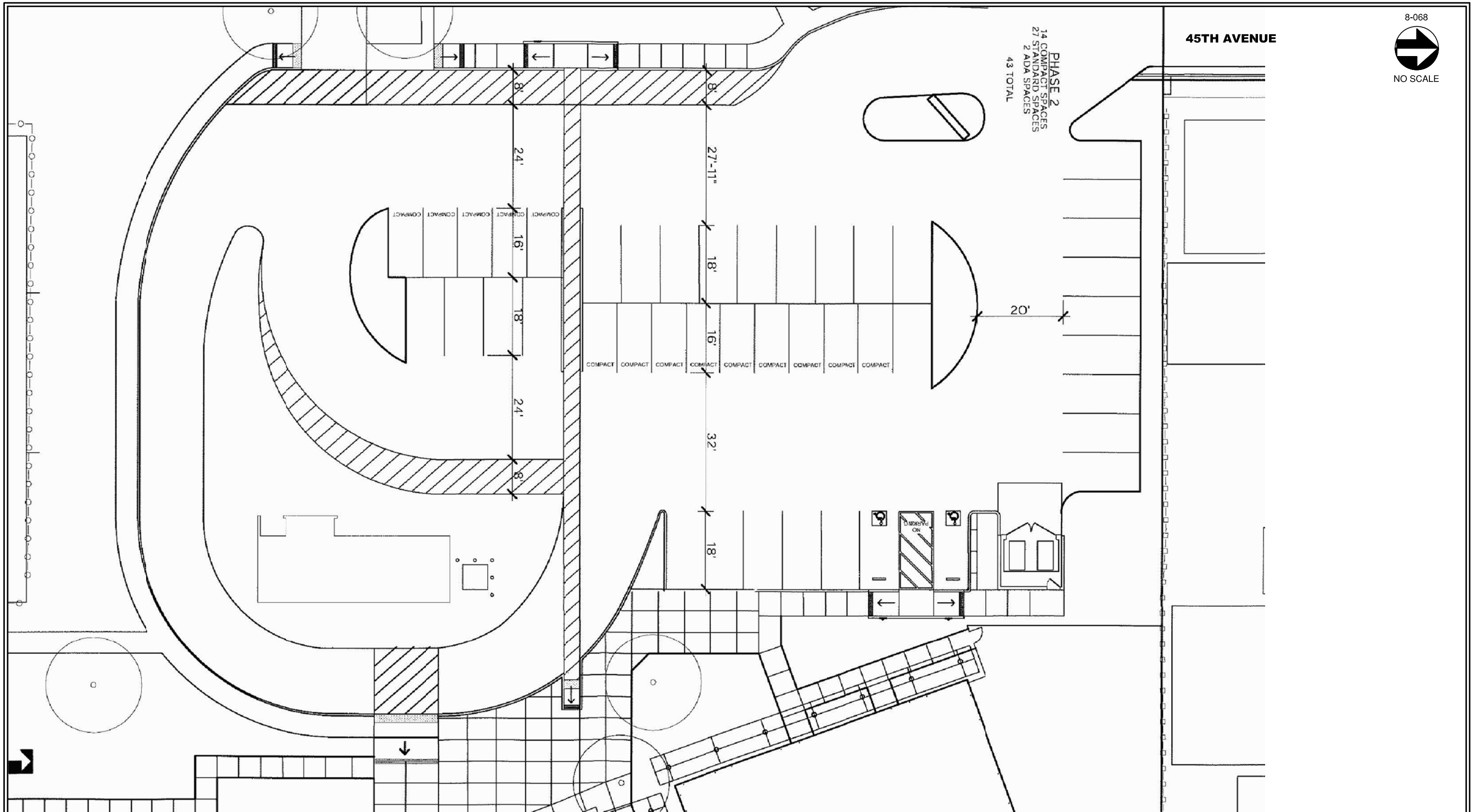


EXHIBIT 2B
PROPOSED PARKING LAYOUT
PHASE 2

SOURCE: WESTON MILES ARCHITECTS, AUGUST 2008.

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions						Existing Plus Project (Phase 1) Conditions						Existing Plus Project (Phase 2) Conditions						Cumulative Plus Project (Phase 2) Conditions					
						AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour		AM Peak Hour		MID Afternoon		PM Peak Hour	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	41st Avenue	Jade Street - Brommer St.	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L/T, 1-R WB 1-L/T, 1-R	Signal	C	**21.9**	**C**	**22.2**	**C**	**23.7**	**C**	**22.1**	**C**	**22.3**	**C**	**23.8**	**C**	**22.8**	**C**	**22.8**	**C**	**24.3**	**C**	**23.0**	**C**	**23.1**	**C**	**25.0**	**C**
2	45th Avenue	Jade Street - Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	**7.5**	**A**	**7.7**	**A**	**8.3**	**A**	**7.7**	**A**	**7.9**	**A**	**8.6**	**A**	**9.1**	**A**	**9.0**	**A**	**9.2**	**A**	**9.0**	**A**	**8.7**	**A**	**9.3**	**A**
3	45th Avenue	Capitola Road	NB 1-L/T/R EB 1-T, 1-R WB 1-L/T	All-Way Stop	C	**11.3**	**B**	**27.1**	**D**	**37.1**	**E**	**11.7**	**B**	**27.9**	**D**	**38.3**	**E**	**13.4**	**B**	**33.1**	**D**	**41.7**	**E**	**14.4**	**B**	**47.7**	**E**	**59.4**	**F**
				Mitigation: ***Signalize***		*7.7*	***A***	*6.2*	***A***	*7.8*	***A***	*8.1*	***A***	*6.7*	***A***	*8.1*	***A***	*9.7*	***A***	*8.0*	***A***	*9.0*	***A***	*9.8*	***A***	*8.2*	***A***	*9.4*	***A***
4	47th Avenue	Topaz Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop	C	**7.5**	**A**	**7.6**	**A**	**7.8**	**A**	**7.6**	**A**	**7.6**	**A**	**7.9**	**A**	**7.9**	**A**	**7.8**	**A**	**8.0**	**A**	**7.8**	**A**	**7.9**	**A**	**8.1**	**A**
5	47th Avenue	Portola Drive	SB 1-L/T/R EB 1-L/T WB 1-T/R	Side-Street Stop (Worst Case)	C	**2.1** 14.1	**A** B	**2.7** 12.5	**A** B	**2.9** 14.6	**A** B	**2.2** 14.8	**A** B	**2.8** 12.8	**A** B	**3.0** 15.1	**A** C	**3.0** 17.6	**A** C	**3.3** 13.9	**A** B	**3.4** 16.4	**A** C	**2.8** 16.3	**A** C	**3.4** 14.9	**A** B	**3.5** 17.2	**A** C

NOTES:
L, T, R = Left, Through, Right.
NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.
Analysis performed using 2000 Highway Capacity Manual methodologies.

Hatch Mott MacDonald

1300-B First Street
Gilroy, CA 95020
T 408-848-3122 www.hatchmott.com

March 25, 2009

Sally Rideout
Senior Planner
EMC PLANNING GROUP INC.
301 Lighthouse Avenue, Suite C
Monterey, California 93940

RE: Opal Cliffs School – Responses to the City of Capitola Comments

Dear Sally:

This letter responds to comments from the City of Capitola regarding the traffic report, *Opal Cliffs School Traffic Impact Analysis*, Hatch Mott MacDonald, November 12, 2008. The report summarized an analysis of the proposed Opal Cliffs School project (Project) in Capitola, California. The City of Capitola comments were included within a letter dated March 10, 2009. The aforementioned comments are repeated below in *italics*, with the Hatch Mott MacDonald response following.

1. Comment: *The Traffic Impact Analysis does not adequately address the traffic impacts to the Jewel Box neighborhood. The impacts of 100 additional trips on Topaz Street will be significant and must be mitigated.*

   Response: As reported in the Traffic Impact Analysis (TIA), the existing ADT along Topaz Street between 45th Avenue and 47th Avenue is 1,500 vehicles per day, which corresponds to a TIRE Index value of 3.2. While preparing this response letter, an error in Exhibit 12: Roadway Segments TIRE Index Values was found. The ADT along Topaz Street between 45th Avenue and 47th Avenue under Existing Plus Project (Phase 1) Conditions should read 1,570, instead of 1,600. A daily vehicle volume of 1,570 corresponds to a TIRE Index value of 3.2. According to the TIRE Index methodology, the increase in traffic volume along this segment of Topaz Street under Existing Plus Project (Phase 1) Conditions would not be noticeable to residents. Therefore no improvements are recommended for Phase 1 of the Project.

   The ADT on this segment of Topaz Street under Existing Plus Project (Phase 2) Conditions was also incorrectly reported in the Exhibit 12 of the TIA. It should read 1,800, not 1,900. At 1,800 vehicles per day the TIRE Index is on the border between 3.2 and 3.3. Because the TIRE Index value increase of 0.1 is marginally met, the increase of neighborhood traffic under Existing Plus Project (Phase 2) Conditions, could be noticeable to residents. Therefore, we do agree with the commentor that implementation of traffic calming measures should be considered along Topaz Street between 45th Avenue and 47th Avenue during Phase 2 of the Project.

This segment of Topaz Street is approximately 400 feet in length. It is recommended that a speed hump, similar to those which are currently located along 45th Avenue, 47th Avenue, and 49th Avenue in the vicinity of the Project, be constructed along this segment and located approximately mid-block. The Soquel Union Elementary School District (District) should provide funding for the improvement on Topaz Street. The improvement should be constructed during Phase 2 of the Project.

It is noted that due to the nature of school traffic operations, the vast majority of the additional neighborhood traffic will occur during the peak hours only. At other times of the day, the traffic impacts due to the school would be minimal to non-existent.

2. Comment: *Also the trip distribution does not adequately address traffic that will use Topaz Street to access 49th Avenue. Please revise the analysis to consider this matter.*

   Response: The distribution of Project trips was determined utilizing the Transportation Area Zones (TAZ's), located within the Opal Cliff School attendance Area, obtained from the AMBAG Regional Travel Demand Model, and our knowledge of the local street system.

   Based on the TAZ's, an estimated 8% of Project trips will come to/from the North via 46th Avenue. These trips are anticipated to travel to/from the Project site via Capitola Road and 45th Avenue, instead of 49th Avenue, as the former route is the more direct route provided by the existing street network.

   Additionally, an estimated 4% of Project trips will come to/from the North via Wharf Road and 49th Avenue, and an estimated 18% will come to/from the East via Capitola Road. The majority of this traffic is directed to/from the Project via Capitola Road and 45th Avenue, due to Capitola Road being more conducive to higher vehicular speeds as an arterial street. Additionally, 45th Avenue, although there are existing traffic calming speed humps located between Capitola Road and Jade Street, is a 50 foot wide street, with 13 foot travel lanes. An additional 12 feet of roadway is provided on both the East and West sides of the street, and parking is allowed on both sides along the entire length of roadway.

   49th Avenue is a narrower neighborhood street with existing traffic calming speed humps located between Capitola Road and Topaz Street. Additionally, the widths of the East-West streets within the Jewel Box neighborhood are further narrowed, with a width of approximately 30 feet. Parking is currently allowed on both sides of the Jewel Box neighborhood's East-West streets, further narrowing the available travel width of the roadways. The route to/from the Project site through the Jewel Box neighborhood via 49th Avenue is much less conducive to higher vehicular speeds and volumes, compared to the Capitola Road and 45th Avenue route. A route through these narrow neighborhood streets would be a less

vehicular friendly route to use, other than for the Project trips originating from within the neighborhood itself. Still a small percentage, approximately 4%, of Project trips is anticipated to travel along 49th Avenue as they travel to/from the Project Site. Given the existing grid configuration of the Jewel Box neighborhood roadways, these Project trips are anticipated to disperse along the East-West streets, with approximately 2% traveling along Topaz Street.

3. Comment: *The traffic analysis is too quick to recommend signalization of intersections without consideration of alternatives or other methods of addressing the impacts. Please revise the analysis to consider these alternatives.*

   Response: The 45th Avenue / Capitola Road intersection is all-way stop controlled and operates deficiently under Existing Conditions. Consideration was given to various possible mitigation measures for this intersection that would be feasible given the existing roadway constraints. All four corners of this intersection are built-out, which limits the number of possible physical alternatives available without condemning adjacent properties. The alternatives which were considered include side street stop control for the 45th Avenue approach with Capitola Road uncontrolled, providing a dedicated right turn lane on the northbound approach with all way stop control, and signalization. However, the intersection would operate at deficient levels of service under Existing Conditions for all analyzed alternatives, with the exception of signalization.

   Additionally, as stated in the TIA, given the through traffic along Capitola Road being significantly greater than the approaching traffic volume on 45th Avenue, as well as the anticipated increase in pedestrian activity due to the Project at the intersection, signalization is the only realistic option that would allow the intersection to operate at an acceptable level of service.

4. Comment: *The school site plan identifies access from 47th Avenue but assigns no traffic to this point. It is apparent that school kids, especially in Phase 2 will be dropped off on 47th Avenue rather than entering into the school designated drop-off. The analysis must account for some distribution of trips to 47th Avenue.*

   Response: The TIA analyzed the worst case scenario at the proposed school driveway, which would be with all school related traffic congregating at the main school entrance located at the 45th Avenue / Jade Street – Topaz Street intersection. Observations of traffic operations at other elementary schools within the district have shown that the vast majority of parents prefer to use the school designated pick-up and drop-off locations.

   It is acknowledged that some students during Phase 2, could be dropped off along the Project frontage on 47th Avenue. At most an estimated 5% of Project trips would utilize the 47th Avenue parking area, with the majority of this percentage arising from trips to/from areas to the North and East of the Project site. Project trips to/from the South, accessing the school via 47th Avenue are unlikely to

utilize the parking area due to the fact that it is located along the west side of 47th Avenue and would require vehicles traveling north to either make an illegal u-turn or circle through the neighborhood streets. Although it is possible that Project trips to/from the West might use the 47th Avenue parking area, it is expected that this number would not be more than a few trips during the peak hour.

With the Project trip distribution as presented in the TIA, the 47th Avenue / Topaz Street intersection would operate at LOS A for all scenarios analyzed. The previously estimated number of Project trips diverted to the 47th Avenue parking area would not be a sufficient percentage to cause the traffic operations at this intersection to deteriorate to a deficient level of service.

5. Comment: *Project results in off site impacts to both pedestrians and cyclists due to increased levels of neighborhood traffic. As a result, the document must include measures to quantify and mitigate these off site impacts. Feasible mitigation measures could include specific funding amounts for: traffic calming, safety improvements, off site bicycle and pedestrian improvements.*

   Response: Access for both pedestrians and bicycles to the proposed school and existing park facilities as well as pathways allowing for connectivity between 47th Avenue, Jade Street, and 45th Avenue, are considered during both phases of the Project.

   For Existing and Existing Plus Project (Phase 1) Conditions, existing traffic calming measures in the Jewel Box Neighborhood include multiple speed humps along 45th Avenue between Topaz Street and Capitola Road, along 47th Avenue between Portola Drive and Capitola Road, and along 49th Avenue between Topaz Street and Capitola Road. As stated above in Response 1, the implementation of a mid-block speed hump should be considered Phase 2 of the Project.

   Additionally, as stated in the TIA, it is recommended that a Safe Routes to School Plan, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), be prepared for the proposed Opal Cliffs School. This plan would identify the routes to be taken by the students to and from the new school. As part of the plan, deficiencies in existing pedestrian facilities along the routes would be identified, and measures to improve the deficiencies would be recommended. Such improvements might include the installation of additional crosswalk striping, new curb ramps, and new sidewalk facilities. In addition to identifying routes for school children, these improvements measures could incorporate better facilities for public access to/from the park. These improvements should be implemented during Phase 2 of the Project and would benefit the entire Jewel Box neighborhood.

   It is noted the Project will allow many local residents to travel shorter distances during peak hours because their children will attend a school closer to their homes. While it is difficult to quantify any reduction in traffic due the Project, it

Hatch Mott MacDonald

is possible that the Project will result in decreased traffic at other locations within the City.

If you have any questions regarding these responses, please contact us at your earliest convenience.

Very truly yours,

Hatch Mott MacDonald

Keith B. Higgins, CE, TE
Vice President
T 408.848.3122 F 408.848.2202
keith.higgins@hatchmott.com

KBH:je:jmw

GEOLOGIC AND SEISMIC HAZARDS EVALUATION
PROPOSED OPAL CLIFFS PRESCHOOL
47TH AVENUE
CAPITOLA, SANTA CRUZ COUNTY, CALIFORNIA

PROJECT 2190G

PACIFIC
GEOTECHNICAL
ENGINEERING

GEOLOGIC AND SEISMIC HAZARDS EVALUATION
PROPOSED OPAL CLIFFS PRESCHOOL
47TH AVENUE
CAPITOLA, SANTA CRUZ COUNTY, CALIFORNIA

PROJECT 2190G

For
Soquel Union Elementary School District
Contact: Sherree Brown
620 Monterey Avenue
Capitola, California 95010

By

PACIFIC GEOTECHNICAL ENGINEERING
16055 Caputo Drive, Suite D
Morgan Hill, California 95037
(408) 778-2818

October 15, 2007

TABLE OF CONTENTS

1. INTRODUCTION 1
   1.1 GENERAL 1
   1.2 PROJECT LOCATION AND DESCRIPTION 1
   1.3 INFORMATION PROVIDED 1
   1.4 PURPOSE AND SCOPE OF SERVICES 1
2. REGIONAL SETTING 2
   2.1 PHYSICAL SETTING AND SITE TERRAIN 2
      2.1.1 Existing Improvements and Previous Land Use/Grading 3
      2.1.2 Drainage and Groundwater 3
   2.2 REGIONAL GEOLOGIC SETTING 3
   2.3 REGIONAL GEOHAZARDS MAPPING 4
   2.4 FAULTING AND SEISMICITY 4
      2.4.1 Local Faults 4
      2.4.2 Seismic Sources 5
      2.4.3 Historic Seismicity 5
      2.4.4 Future Seismicity 6
   2.5 PREVIOUS SITE-SPECIFIC INVESTIGATIONS 6
3. SITE CONDITIONS 7
   3.1 EARTH MATERIALS 7
      3.1.1 Subsurface Data 7
   3.2 EARTHQUAKE GROUND MOTION 8
      3.2.1 Geologic Subgrade/Soil Profile/Shear-Wave Velocity 8
      3.2.2 Probabilistic Earthquake Ground Motion (DBE, UBE) 8
      3.2.3 Seismic Design Criteria 8
      3.2.4 Liquefaction Potential and Seismically Induced Settlements 9
      3.2.5 Lateral Spreading 9
      3.2.6 Seismically Induced Settlement 9
   3.3 OTHER GEOLOGIC HAZARDS 10
4. CONCLUSIONS – GEOHAZARDS 10
   4.1 GENERAL SUMMARY – 10
   4.2 PRIMARY SEISMIC HAZARDS 10
   4.3 SECONDARY SEISMIC HAZARDS 10
5. LIMITATIONS 11
6. REFERENCES 12
   6.1 Maps and Reports 12
   AERIAL PHOTOGRAPHS 14

FIGURES

Figure 1. Vicinity Map
Figure 2. Site Coordinate Map
Figure 3. Regional Geologic Map
Figure 4. Regional Fault Map
Figure 5. Site Plan
Figure 6 Regional Liquefaction Susceptibility
Figure 7 Historic Seismicity Map
Figure 8 Cross Section A-A'

APPENDIX A – Drill hole Logs for DH-1 and DH-2

GEOLOGIC AND SEISMIC HAZARDS EVALUATION
PROPOSED OPAL CLIFFS PRESCHOOL
47TH AVENUE
CAPITOLA, SANTA CRUZ COUNTY, CALIFORNIA

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our engineering geologic evaluation in support of a proposed preschool near the northern end of Jade Park, between 45th and 47th Avenues, in Capitola, Santa Cruz County, California.

Based on the results of our investigation, we conclude that the site is geologically suitable for the proposed project. Design for the project will be on the basis of a future design-level geotechnical investigation.

1.2 PROJECT LOCATION AND DESCRIPTION

The site location is depicted on the Vicinity Map (Figure 1) and Site Coordinate Map (Figure 2) of this report. The proposed preschool is located in an area of School District property currently made available to community gardeners, at the very northern end of Jade Park. The proposed preschool site is bounded on the north by existing residential properties that front northward onto Topaz Street, on the west by a parking lot opening onto the intersection of 45th Avenue and Jade Street, and on the east by 47th Avenue. The latitude and longitude of the site, in decimal degrees, are 36.9700 degrees north latitude, and -121.9589 (west) latitude, respectively.

The proposed project includes the removal of a fenced garden area, followed by the construction of two buildings holding classrooms and administrative office space, and associated play area. An improved parking lot is proposed west of the classrooms, north of an existing basketball court. Other school facilities may be located east and south of the proposed buildings in the future, however, they are not part of the current project.

1.3 INFORMATION PROVIDED

For this study, Weston Miles Architects provided us with an undated conceptual site plan entitled "Opal Cliffs School, Soquel Union School District."

1.4 PURPOSE AND SCOPE OF SERVICES

The purpose of this investigation was to characterize the geologic conditions of the proposed development area of the site, and evaluate the geologic suitability of the site for the proposed project. In preparing this report, we have consulted guidelines presented in various California Geological Survey (CGS; formerly the California Division of Mines and Geology, or CDMG) publications: Special Publication 117 (Guidelines for Evaluating and Mitigating Seismic Hazards); Note 48 (Checklist for Review of Engineering Geology and Seismology Reports for Public Schools, Hospitals, and Essential Services Buildings); Note 42 (Guidelines for Geologic/Seismic Reports); and Note 44 (Recommended Guidelines for Preparing Engineering Geologic Reports). Our scope did not include evaluation of the site or property for the potential presence of hazardous substances (i.e. environmental site assessment).

For this study, we completed the following scope of work:

- Review of available published and unpublished geologic maps and literature regarding the site and its environs.
- Review of County geohazard mapping compiled for public use on the County of Monterey Planning Department GIS website.
- Research and review of historic seismicity resulting in significant strong ground shaking in the site vicinity.
- Research into probabilistic ground accelerations at the site, using models developed by the US Geological Survey and California Geological Survey to calculate the Upper-Bound Earthquake (UBE) and Design-Basis Earthquake (DBE) ground accelerations at the site.
- Search for and analysis of stereoscopic aerial photographs at the UC Santa Cruz library collection.
- Reconnaissance of the site vicinity under the guidance of a Certified Engineering Geologist to observe geologic conditions.
- Drilling of two exploratory drill holes at the site in order to characterize subsurface materials, obtain insitu engineering data, and obtain representative samples for testing and evaluation.
- Laboratory testing of earth materials samples to establish engineering properties.
- Review of subsurface information gathered from our exploration, in the context of regional geologic information. Based on subsurface information from the site, we characterized the Soil Profile Type (based on the 2001 CBC).
- Geologic analysis of the information gathered.
- Development of conclusions regarding the geologic suitability of the site for the proposed project, with hazards addressed including liquefaction potential and other geologic hazards.
- Preparation of this report, presenting our findings, conclusions and recommendations.

2. REGIONAL SETTING

2.1 PHYSICAL SETTING AND SITE TERRAIN

The site is located on the lowest emergent coastal marine terrace, a nearly level plain that slopes very gently southward toward the coastal bluffs in the Opal Cliffs area of Capitola. Regionally, this section of coast lies within the Monterey Bay. At a more local scale, the site lies northeast of Soquel Point, and southwest of the mouth of Soquel Creek. With Soquel Point projecting southward into Monterey Bay, the coastline in the site vicinity is oriented northeast-southwest. The immediate site vicinity is gently sloping terrain, at an approximate elevation of 69 feet above mean sea level (elevation interpolated per USGS Soquel 7.5' quadrangle). The site is nearly flat, and total relief across the site is estimated to be less than five feet. The site is located approximately 800 feet from the nearest coastal top-of-bluff. It is located between the Soquel Creek drainage (to the east) and the Rodeo Creek drainage (to the west).

2.1.1 Existing Improvements and Previous Land Use/Grading

The site is currently being used for community flower and vegetable garden plots. The garden area is surrounded by a low chain-link fence with gates. A partially paved parking area lies just west of the garden. Trees and lawn lie between the eastern edge of the garden area and 47th Avenue. South of the garden area is an unpaved path, and a soccer field.

We were able to locate some very early aerial photographs of the site vicinity taken in 1928. South of the current Jade Park, a railroad line is present in these photographs. North of the site, the current street grid, including Topaz Street, is present, with widely scattered structures. In the approximately area of the site there is an apparent farmhouse.

South of the site in the Jade Park area, along the northern side of the railroad, is an area of parallel lineaments oriented parallel to the railroad. The photographs do not provide enough detail to resolve these features, which we tentatively interpret as a local borrow area, and/or temporary windrows/stockpiles of material.

By 1953, these lineaments are no longer present. Scattered probable farm buildings are present in the general site vicinity. A possible pond or gravel pit is present south of the site, in the Jade Park vicinity. Fields in the site vicinity appear to be used as hay fields, based on probable mowing streaks visible on the photographs.

2.1.2 Drainage and Groundwater

Because of the site's location on a very gently sloping coastal marine terrace, the details of surface drainage patterns are not pronounced. Overall, the site vicinity drains naturally toward the south. Street gutters currently capture surface runoff from the site vicinity, and convey it offsite. An area drain is located in the parking area west of the site.

One our two geotechnical borings at the site, which reached a maximum depth of 51.5 feet below ground surface, encountered minor perched water at 23 feet bgs, at the interface between terrace deposits and the underlying Purisima Formation bedrock. However, the underlying bedrock was only moist, and no saturated zones were encountered. The borings were drilled in September, 2007.

2.2 REGIONAL GEOLOGIC SETTING

The site is mapped by Brabb (1989) as being underlain by "lowest emergent coastal terrace deposits." These deposits are described as consisting of semiconsolidated, generally well-sorted sand with a few thin, relatively continuous layers of gravel. Locally these deposits grade upward into eolian (windblown) sand. The unit is internally variable, and includes deposits of fluvial and colluvial silt, sand, and gravel. The thickness of the terrace deposits is variable up to about 40 feet thick, with the upper 5 to 20 feet more weathered.

The terrace deposits are formed by wave action at a particular sea-level stand, which cuts back the coastline, leaving a relatively planar bedrock surface mantled with the terrace deposits. The bedrock mapped as underlying the terrace deposits is the Purisima Formation, which crops out in coastal bluff exposures and along Soquel and Rodeo Creeks.

A more recent regional compilation (Brabb, 1997) portrays the same units and relations.

2.3 REGIONAL GEOHAZARDS MAPPING

A county-wide examination of the potential for liquefaction (Dupre, 1975) was used by the County of Santa Cruz to prepare a liquefaction potential map that is available on the County Planning Department's GIS website. These maps show the site vicinity as having a "low" liquefaction potential (lowest of four classes of hazard mapped). An excerpt of this map is presented as our Regional Liquefaction Susceptibility Map (Figure 6).

No reported liquefaction or other ground deformation features were mapped in the site vicinity by a comprehensive study of ground deformation localities following the 1989 Loma Prieta earthquake (Tinsley, 1998). Nor were any such features described in the site vicinity following the 1906 earthquake (Youd and Hoose, 1978); the nearest described phenomena were common sloughs from the coastal bluffs, and damage to the abutment of a bridge crossing Soquel Creek.

The Capitola General Plan (Freitas and Freitas, 1989) shows the site as lying outside areas of potential tsunami and flooding from Soquel Creek.

The General Plan shows the site, and approximately half of Capitola, as lying in an area of "high seismic shaking hazard" for which a "geologic/engineering report" is required for buildings for public use.

The figure portraying this refers to an even earlier 1974 report by Environmental Associates that we were unable to obtain. A comparison of this map to geology as mapped does not yield an obvious correlation. Seismic response has been better studied in the years since the early 1970's, with different aspects of shaking sometimes intensified by local topography (e.g. narrow ridgecrests); or thick, water-rich sedimentary sequences. However, neither is the case in the site vicinity.

The site lies outside a 200-foot-wide zone established in the General Plan as requiring special evaluation for "geologic stability."

The California Geological Survey has not yet prepared a Seismic Hazard Zone map for the Salinas quadrangle that encompasses the site. This map series addresses the regional potential for seismically induced landsliding and liquefaction.

The site's marine terrace setting renders general landslide concerns insignificant at the site. Due to the site's "low" liquefaction potential, the potential for lateral spreading is similarly judged to be low.

2.4 FAULTING AND SEISMICITY

2.4.1 Local Faults

According to Hart (2007) the site is not located within an Alquist-Priolo Earthquake Fault Zone, as mapped by the State of California. Nor is the site within a fault zone mapped by the County of Santa Cruz (ref. County of Santa Cruz Planning Dept. GIS website (accessible at http://gis.co.santa-cruz.ca.us/).

As part of considering the potential presence of active faults, we examined aerial photography spanning the years 1928 to 1953 (earlier, less-developed conditions being the aim), and did not observe evidence suggestive of active faulting. These photos show undeveloped agricultural

land in the site vicinity, and the imagery would serve capture throughgoing lineaments. Features we searched for included elements of surface topography (benches, linear scarps, breaks-in-slope, depressions, facets, grabens, notches, offset ridgelines, etc), vegetation (linear contrasts in vegetation type or vigor, evidence of groundwater ponding or contrasts in soil moisture, etc.), and underlying geology (texture, soil color, etc.).

2.4.2 Seismic Sources

Potential sources of significant earthquake ground shaking at the site include several active and potentially active faults in the general Monterey Bay area, as well as faults farther afield. We searched for significant seismic sources within a radius of 100 km using Jennings (1974) and the seismic sources considered by the Working Group on Northern California Earthquake Probabilities (Working Group, 2003) and the California Geological Survey's statewide probabilistic seismic hazard analysis (PSHA) model (CGS, 2003, as updated on the California Geological Surveys PSHA webpage at www.consrv.ca.gov/rghm/psha). The distances to faults are tabulated below, measured from the site to the closest approach of the projected surface trace of the seismic source. Additional detail for selected faults is presented in the Appendix to this report. Figure 4 shows selected major active seismic sources in the region encompassing the site, classed by level of activity. The faults shown on Figure 4 were first compiled on the State's Fault Activity Map (Jennings, 1974). This map has now been integrated into the US Geological Survey's Quaternary Fault and Fold Database (accessible at http://earthquake.usgs.gov/regional/qfaults/), and made available as a "drape" over GoogleEarth terrain files.

Fault Name	Closest Distance from Site (km)	Direction from Site to Fault
Zayante-Vergeles	11	NE
Monterey Bay-Tularcitos	9	SW
San Andreas (creeping)	45	SE
San Andreas (1906)	16	NE
San Andreas (Sta. Cruz Mountains)	16	NE
San Andreas (Peninsula)	38	NW
Calaveras (southern, central segments)	43	NE
Calaveras (northern segment)	62	N
Sargent	20	NE
San Gregorio-Hosgri	20	SW
Ortigalita	69	E
Monte Vista-Shannon	29	N
Hayward (southern segment)	58	N
Hayward (northern segment)	83	N
Hayward (SE extension)	43	NE
Great Valley 7	82	NE
Great Valley 5	80	NE
Greenville	55	NE

2.4.3 Historic Seismicity

We researched historic seismicity affecting the site using several resources, including Sleeter and others (2004), Toppozada and others (1978), and Toppozada and others (2000).

Figure 7 shows epicenters for earthquakes of magnitude 5 or greater, for the time period 1800 – 1999. Shown as well are the areas considered to have been "damaged" by these earthquakes.

Both the epicenters and estimates of magnitude are quite approximate for events predating modern seismic networks. Damage areas as well are approximate, as they are greatly influenced by type of construction and density of settlement, and depend in part on the accuracy and completeness of newspaper and historic accounts.

As Figure 7 shows, historic damaging earthquakes that affected the site vicinity have been fairly tightly clustered along the San Andreas, Calaveras and Hayward faults. Historic accounts indicate that damaging historic earthquakes have been clustered primarily along non-creeping segments of the San Andreas, Hayward and Calaveras faults. Synthesis of damage accounts (Toppozada and others, 2000) indicates that a minimum of 5 events has caused ground shaking of Modified Mercalli Intensity VII or greater at the site. Ground shaking of intensity VII is defined as "People have difficulty standing. Drivers feel their cars shaking. Some furniture breaks. Loose bricks fall from buildings. Damage is slight to moderate in well-built buildings; considerable in poorly built buildings."

Recent seismicity bears out these same trends. For example, Sleeter and others (2004) catalogs earthquakes greater than magnitude 1.5 for 1970 – 2003. The epicenters for this time period are strongly clustered along the major mapped faults, the closest being the San Andreas, Sand Gregorio and faults closely associated with the San Andreas (e.g. Sargent).

2.4.4 Future Seismicity

Ongoing research by the Working Group on California Earthquake Probabilities (WGCEP 1990, 1996, 2003) and Michael and others (1999) reaffirms that damaging earthquakes are a fact of life for the Monterey Bay area.

The WGCEP's estimates of the probabilities of major earthquakes are now in their third iteration, with the greatest changes in approach being the treatment of the San Andreas fault either as segmented (WGCEP, 1990) or unsegmented (Michael and others [1999]; and WGCEP [2003]) and in the progressive consideration of more potential seismic sources. Current estimates (WGCEP, 2003) are most detailed for the greater San Francisco Bay Area; the WGCEP estimates there is a 62% probability of a large (magnitude 6.7 or greater) earthquake in the San Francisco Bay area as a whole in the 30-year period ending in 2031. The estimate for the Calaveras fault alone is 11%; for the San Andreas fault alone, 21%; and for the Hayward fault, 27%.

Both the US Geological Survey and the California Geological Survey are pressing forward with probabilistic models of expected ground shaking at a given locality, in lieu of earlier approaches that used a "deterministic" approach based on the greatest possible ground acceleration, which did not consider how likely or unlikely a given seismic event might be. The calculated ground motions from these two efforts are discussed in a later report section; we obtained the Upper-Bound Earthquake (UBE) and Design-Basis Earthquake (DBE). These ground motions are discussed following a discussion of site-specific subsurface data and Soil Profile Type.

2.5 PREVIOUS SITE-SPECIFIC INVESTIGATIONS

We are not aware of previous site-specific geologic or geotechnical investigations at the site.

3. SITE CONDITIONS

3.1 EARTH MATERIALS

This section presents data on subsurface conditions at the site that are relevant to the site's response to earthquake shaking.

3.1.1 Subsurface Data

Regional maps indicate that up to 40 feet of terrace deposits locally underlies the Plio-Pleistocene Purisima Formation bedrock.

Our exploratory borings encountered a general sequence consisting of Purisima Formation bedrock, overlain by first relatively coarse-grained marine terrace deposits, then a relatively fine-grained alluvial and colluvial cap. Drill hole logs are presented in the report Appendix.

DH-1 was drilled near the western end of the site. Beneath an uppermost layer less than a foot thick of disturbed/tilled ground, we encountered clayey sand (SC) to a depth of about 2 feet below ground surface (bgs), overlying fat clay and sandy fat clay (CH) that extends to about 8 feet bgs. We interpret this sand- and clay-dominated interval to represent alluvial and colluvial deposits, with possibly eolian (windblown) additions. From 8 feet bgs to 23 feet bgs, we encountered clayey gravel with sand (GC) that coarsens with depth. We interpret this interval to represent marine terrace deposits directly related to the wave action that planed off the underlying bedrock to form a wave-cut platform. From 23 feet bgs to the bottom of the hole at 51.5 feet bgs, we encountered sandstone and sandy siltstone that we assign to the Purisima Formation. This same formation is exposed in the modern beachcliffs, underneath a cap of terrace deposits.

DH-2 was drilled near the middle of the southern site perimeter. We encountered a similar sequence to that found in DH-1. An upper disturbed interval of less than a foot overlies clayey sand (SC) that extends to approximately 4.5 feet bgs. From 4.5 to 6 feet bgs, fat clay with sand (CH) was encountered. We interpret this upper 6 feet to represent alluvial/colluvial deposits, with possibly eolian additions. From 6 feet bgs to the bottom of the hole at 20 feet bgs, we encountered a coarsening-downward sequence ranging from clayey sand to clayey sand with gravel (SC). We interpret this interval to represent terrace deposits, as in DH-1. No groundwater was encountered at the time of drilling in either drill hole.

Figure 8 presents our interpretation of subsurface geology of the site, in cross-section form. We interpret the site to be underlain by an upper cap of alluvial/colluvial deposits that overlie an approximately 15-foot-thick interval of terrace deposits containing considerable fines. The terrace deposits are interpreted to overlie a relatively planar wave-cut platform cut across Purisima Formation bedrock. The planar nature of this contact is inferred from the consistent elevation of the contact where exposed along the sea cliffs.

Geotechnical properties of the earth materials at the site will be further characterized when a design-level geotechnical investigation is undertaken.

3.2 EARTHQUAKE GROUND MOTION

3.2.1 Geologic Subgrade/Soil Profile/Shear-Wave Velocity

The existing subsurface data demonstrates that unconsolidated alluvium extends to at least 23 feet bgs in the site vicinity. This is consistent with regional geologic mapping, which notes that terrace deposits can be up to about 40 feet thick.

Blow counts in the upper approximately 23 feet of the drillholes ranged from 8 blows per foot (bpf) to 84 blows for 11 inches (uncorrected); this interval includes alluvial, colluvial, and terrace deposits. The lowest blow counts are found within approximately 4 feet of ground surface; below that point, the lowest blow counts are 33 bpf. Most blow counts lie in the range of approximately 33 to 51 bpf; we consider the 84/11" to be an outlier probably reflecting a resistant clast. Blow counts for the underlying Purisima Formation bedrock ranged from 42 to 54 bpf. We infer that the site Soil Profile Type is appropriately considered to be "S_D" as used in Table 16A-J of the 2001 CBC. S_D is defined as consisting of stiff soil with a shear wave velocity between 180 m/s (approximately 600 feet/sec) and 360 m/s (or 1200 feet/sec), or SPT(N) between 15 and 50 blows/foot, or Su= 1,000 – 2,000 psf in the uppermost 30 meters (approximately 100 feet).

3.2.2 Probabilistic Earthquake Ground Motion (DBE, UBE)

We consulted the probabilistic seismic hazard analysis (PSHA) models of the US Geological Survey and California Geological Survey to derive the Design-Basis Earthquake and Upper-Bound Earthquake (UBE) ground motion for the site. Accelerations are presented in the table below.

UBE ground motion is defined as the ground motion with a 10% chance of exceedance in 100 years (which is equivalent to a return period of about 950 years). The USGS model resides at the USGS website http://earthquake.usgs.gov/research/hazmaps/design/.

DBE ground motion is defined as the ground motion with a 10% chance of exceedance in 50 years (which is equivalent to a return period of about 475 years). The USGS model provides accelerations calculated for a rock site, while the CGS model provides accelerations as calculated for an "alluvium" site ("site category D"). DBE ground motion corresponds to the peak horizontal ground accelerations calculated by the California Geological Survey's on-line PSHA website (www.consrv.ca.gov/CGS/rghm/pshamap.asp).

DBE Ground Motion (g) [10% in 50 years]	UBE Ground Motion (g) [10% in 100 years]
0.45 (CGS); 0.43 (USGS)	0.52 (USGS)

An examination of the deaggregation of the component seismic sources for the USGS calculated ground motions reveals that the dominant contributor is a moment magnitude (Mw) 7.89 earthquake at a distance of 15 km – on the Santa Cruz Mountains segment of the San Andreas fault.

3.2.3 Seismic Design Criteria

Selection of the appropriate seismic design parameters for structures should be made by the project structural engineer after consideration of the site materials, analytical procedures and past performance of similar structures during magnitudes of shaking similar to those expected for this site.

The site is approximately 16 km from the San Andreas fault seismic source, which is considered to be Type A significant seismic sources by CDMG (1998). The site is approximately 11 km from the Zayante-Vergeles seismic source, a Type B source.

We assume that seismic design will be in accordance with the 2001 CBC. Based on the 2001 CBC and the available subsurface information, the following site-specific seismic design criteria would apply:

1) Seismic Zone Factor, Z=0.4
2) Soil Profile Type = S_D (stiff soil)
3) Near Source Factors: $N_a = 1.0$, $N_v = 1.00$
4) Seismic Coefficients: $C_a = 0.44$, $C_v = 0.64$

3.2.4 Liquefaction Potential and Seismically Induced Settlements

Liquefaction is a phenomenon by which saturated, granular soils lose substantial strength and undergo significant deformation due to pore pressure increase typically associated with cyclic stress application, such as by earthquake shaking. The soils most susceptible to liquefaction are saturated, clean, loose, fine-grained sands and silts. They are typically young (Holocene; consolidation usually increases with age of the deposit). In general, with increasing fines content and density, the susceptibility drops. The primary factors affecting soil liquefaction potential include: 1) intensity and duration of seismic shaking; 2) soil type and relative density; 3) overburden pressure; and 4) depth to ground water.

Based on the available subsurface information, it is our opinion that the potential for liquefaction is low. We base our judgment in part on: 1) the negligible groundwater, which perches only seasonally atop the Purisima Formation wave-cut bedrock platform at a depth of approximately 23 feet bgs; 2) the approximately 15-foot-thick interval of terrace deposits overlying bedrock is classified as a clayey gravel with sand (GC) or clayey sand with gravel (SC) based on significant fines content; and 3) the alluvial/colluvial cap overlying the terrace deposits is still more clayey (either a clayey sand (SC) or fat clay (CH)), and thus even less susceptible to liquefaction. Groundwater elevations in terrace deposit settings like the site typically do not rise significantly in the winter season, since they drain relatively freely through the laterally extensive free face provided by the beach cliffs approximately 800 feet away.

3.2.5 Lateral Spreading

Lateral spreading involves the lateral movement of a liquefied soil layer (and overlying layers) toward a free face. The closest free face to the project site are the coastal bluffs, located approximately 800 feet to the southeast. We judge the potential for lateral spreading to adversely affect the proposed improvements to be low, based on the distance to the bluff tops, the types of deposits encountered at the site, and the typically minimal groundwater perched on the top-of-bedrock at the site.

3.2.6 Seismically Induced Settlement

We conclude that sandy layers above bedrock are subject to densification as a result of seismic shaking, although a quantified estimate should be developed at the time of design-level geotechnical investigation. We preliminarily estimate that potential ground surface settlement caused by seismic shaking could be on the order of less than 1/2 inch. This potential settlement would be in addition to settlements which may result from foundation loads.

3.3 OTHER GEOLOGIC HAZARDS

For completeness' sake, we herein address other geologic hazards commonly included in engineering geologic reports, as referenced in CGS Note 48.

Our scope of work excludes a Phase I environmental site assessment of the site, and characterization of hazardous materials. Nevertheless, we are not aware of naturally occurring hazardous materials present at the site (e.g. serpentinite or tremolite with asbestiform mineral habit; methane, hydrogen sulfide; petroleum).

No new drinking water supply systems are proposed; hence ground-water quality concerns are not applicable to this project.

No on-site septic systems are proposed.

Hydro-collapse of soils is a phenomenon that is typically associated with dry-climate settings, rather than the relatively moist coastal setting of Capitola. In our judgment, the potential for hydro-collapse of on-site soils is very low.

We are not aware of significant regional subsidence due to groundwater withdrawal that has affected the site vicinity, and we judge the potential for significant differential settlement within the footprint of the proposed improvements to be very low.

The site is not located in proximity to an active volcanic center (Jennings, 1977).

The site is located approximately 800 feet from the coastal bluffs of Monterey Bay, and several tens of feet in elevation above sea level. We judge there to be a low tsunami hazard.

The side is not underlain by earth materials known to emit significant quantities of radon gas.

4. CONCLUSIONS – GEOHAZARDS

This section summarizes our major conclusions, based on the findings of this investigation presented above.

4.1 GENERAL SUMMARY –

In our judgment, the site is geologically suitable for the proposed improvements.

4.2 PRIMARY SEISMIC HAZARDS

In our judgment, the potential for fault ground rupture is low at the project site.

4.3 SECONDARY SEISMIC HAZARDS

In our judgment, the potential for strong earthquake ground shaking at the site is high. The tables presented above in section 3.2.2 show the calculated probabilistic values for Design-Basis Earthquake (DBE) and the Upper-Bound Earthquake (UBE), based on the USGS' and CGS' probabilistic models.

In our judgment, the potential for liquefaction to adversely affect the proposed improvements is low (see discussion above), based on the texture (grain size distribution) of the soils encountered, their relative density, and the lack of significant groundwater at the site.

In our judgment, the site is potentially subject to seismically induced settlement. A quantified estimate should be developed at the time of design-level geotechnical investigation, however our preliminary estimate is that seismically induced settlement at the ground surface would be on the order of less than 1/2 inch.

5. LIMITATIONS

In preparing the findings and professional opinions presented in this report, we have endeavored to follow generally accepted principles and practices of the engineering geologic profession. No warranty, express or implied, is given.

The conclusions and recommendations presented in this report are applicable only to the specific project development on this specific site. These data should not be used for other projects, sites or purposes unless they are reviewed by PGE or the role of project engineering geologist is assumed by another firm/professional.

The conclusions and recommendations contained in this report are based, in part, on information that has been provided to us. Our conclusions and recommendations shall not be considered valid unless we are retained to review the actual proposed development plan and given the opportunity to make any necessary additions or changes to our recommendations.

Should persons concerned with this project observe features or conditions at the site or surrounding area that are different from those described in this report, those observations should be reported immediately to Pacific Geotechnical Engineering for evaluation.

It is important for project performance that the conclusions and recommendations given in this report be made known to the design professionals involved with the project, that they be incorporated into project drawings and documents, and that the recommendations be carried out during construction by the contractor and subcontractors. It is not the responsibility of Pacific Geotechnical Engineering to perform this task. A copy of this report should be provided to new owners if the property is conveyed.

Report prepared by,

PACIFIC GEOTECHNICAL ENGINEERING

G. Reid Fisher, Ph.D.
CEG 1858

REGISTERED GEOLOGIST
G. REID FISHER
No. 1858
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

GRF:SBG\BL:grf:ksf

Report reviewed by,

Chalerm (Beeson) Liang
GE 2031

REGISTERED PROFESSIONAL ENGINEER
CHALERM S. LIANG
No. 2031
EXP. 9/30/07
GEOTECHNICAL
STATE OF CALIFORNIA

6. REFERENCES

6.1 MAPS AND REPORTS

Abrahamson, N.A. and Silva, W.J., 1997, Empirical response spectral attenuation relations for shallow crustal earthquakes: Seismological Research Letters (Special Issue on ground motion attenuation), vol. 68, no. 1, pp. 94-127.

California Building Standards Commission, 1997, California Code of Regulations, Title 24, California Building Standards Code.

California Division of Mines and Geology, rev. 1987, Guidelines for preparing engineering geologic reports: CDMG Note 44.

California Geological Survey, 2004, Checklist for the review of engineering geology and seismology reports for California public schools, hospitals, and essential services buildings: CGS Note 48.

California Division of Mines and Geology, 1996, Probabilistic seismic hazard assessment for the State of California: Open-File Report 96-08 [superseded by CGS, 2003].

California Division of Mines and Geology, 1997, Guidelines for evaluating and mitigating seismic hazards in California: CDMG Special Publication 117.

California Division of Mines and Geology, 1998, Maps of known active fault near-source zones in California and adjacent portions of Nevada (to be used with 1997 Uniform Building Code): International Conference of Building Officials.

California Geological Survey [Tianqing Cao and others], 2003, The revised 2002 California probabilistic seismic hazard maps, June 2003: CGS online publication www.consrv.ca.gov/cgs/rghm/psha/fault_parameters/pdf/2002_CA_Hazard_Maps.pdf

Freitas & Freitas, 1989, General Plan City of Capitola: prepared by Freitas & Freitas for City of Capitola, adopted by City Council September 28, 1989.

Dickinson, W.R. and others, 2005, Net dextral slip, Neogene San Gregorio – Hosgri fault zone, coastal California: geologic evidence and tectonic implications: Geol. Soc. Amer., Special Publications 391.

Dupre, W.R., 1975, Geology and liquefaction potential of Quaternary deposits in Santa County: US Geological Survey Miscellaneous Field Studies MF-0648, 1:62,500.

Frankel, A.D. and others, 1996, National seismic hazard maps, June 1996 documentation: USGS Open File Report 96-532.

Garrison, R.E., and others, eds., 1990, Geology and tectonics of the central California coastal regions, San Francisco to Monterey: AAPG, Pacific Section, Guidebook 67.

Graymer, R.W., and others, 2006, Map of Quaternary-active faults in the San Francisco Bay Area, California: USGS Scientific Investigations Map 2919, scale 1:275,000.

Hart, E.W., 2007 (interim rev.), Fault-rupture hazard zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Special Studies Zones Maps: California Division of Mines and Geology Special Publication 42, 38p.

Jennings, C.W., 1994, Fault activity map of California and adjacent areas: California Division of Mines And Geology, California Geologic Data Map Series, Map No. 6, scale 1:750,000; digitally issued in 2000 by California Division of Mines and Geology as CD 2000-004.

Jennings, C.W., 1977, Geologic map of California: California Division of Mines and Geology, GDM-2, 1:750,000.

Lawson, A.L., 1908, The California earthquake of April 18, 1906: Report of the State Earthquake Investigation Commission: Carnegie Institute of Washington Publication No. 87 (2 vol.).

McGuire, R.K., 2004, Seismic Hazard and Risk Analysis: Earthquake Engineering Research Institute, publication MNO-10.

McNutt, S.R., and Sydnor, R.H., eds., 1990, The Loma Prieta (Santa Cruz Mountains), California, earthquake of 17 October 1989: California Geological Survey Special Publication 104.

Michael, A.J. and others [Working Group on California Earthquake Probabilities], 2002, Is a Powerful Quake Likely to Strike in the Next 30 Year?: U.S. Geological Survey Fact Sheet 39-03.

Michael, A.J., and others [Working Group on California Earthquake Probabilities], 1999, Understanding earthquakes in the San Francisco Bay Region, major quake likely to strike between 2000 and 2030: U.S. Geological Survey Fact Sheet-152-99.

Page, B.M. and others, 1998, Late Cenozoic tectonics of central and southern Coast Ranges of California: Geol. Soc. Amer. Bull., vol. 110, no. 7, pp. 846-876.

Petersen, M.D., and others, 1996, Probabilistic Seismic Hazard Assessment for the State of California: California Geological Survey Open-File Report 96-08, 33p. This model has been superseded by CGS (2003), available online at http://www.consrv.ca.gov/cgs

Real, C.R. Toppozada, T.R., and Parke, D.L., 1978, Earthquake catalog of California, January 1, 1900 to December 31, 1974, first edition: CDMG Special Publication 52.

Rosenberg, L.I., 2001, Geology resources and constraints, Monterey County, California (version 1.0): technical report prepared for Monterey County 21st Century General Plan Update, dated April 2001.

Sadigh, K., Chang, C.-Y., Egan, J.A., Makdisi, F., and Youngs, R.R., 1997, Attenuation relations for shallow crustal earthquakes based on California strong motion data: Seismological Res. Ltrs, vol. 68, no. 1, pp. 180-189.

Seeburger, D.A., and Bolt, B.A., 1976, Earthquakes in California 1769-1927: prepared at Univ. of California Berkeley for Nat'l Oceanic and Atmospheric Administration.

Simpson, G.D. and others, 1997, The northern San Gregorio fault zone: evidence for the timing of late Holocene earthquakes near Seal Cove, California: Bull. Of the Seismol. Soc. Amer., vol. 87, no. 5, pp. 1158-1170.

Sleeter, B.M. and others, 2004, Earthquakes and faults in the San Francisco Bay Area (1970-2003): USGS Scientific Investigations Map 2848, scale 1:300,000.

Stover, C.W. and others, 1990, Preliminary isoseismal map for the Santa Cruz, Loma Prieta, California earthquake, 1989: USGS Open-File Report 90-18.

Tinsley, J.C., Jr., and others, 1998, Appendix: maps and descriptions of liquefaction and associated effects; in Holzer, T.L., ed., The Loma Prieta, California, earthquake of October 17, 1989 – liquefaction: US Geological Survey Professional Paper 1551-B, p. 287 --.

Toppozada, T.R., and others, 1978, Seismicity of California, 1900-1931: CDMG Special Report 135.

Toppozada, T.R., and Borchardt, G., 1998, Re-evaluation of the 1836 "Hayward" and the 1838 San Andreas earthquakes: Bulletin of the Seismological Society of America, vol. 88, no. 1, pp. 140-159.

Toppozada, T.R. and others, 2000, Epicenters of and areas damaged by M > or = 5 earthquakes, 1800-1999: CDMG Map Sheet 49.

US Geological Survey, 1999, Topographic map of the Soquel 7.5 minute quadrangle, California: scale 1:24,000.

Wagner, D.L., and others, 2003, Geologic map of the Monterey region, California: California Geological Survey, CD-RGM Map no. 1, scale 1:100,000.

Working Group on California Earthquake Probabilities, 1990, Probabilities of large earthquakes in the San Francisco Bay Region, California: U.S. Geological Survey Circular 1053, 51p.

Working Group on California Earthquake Probabilities, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California: U.S. Geological Survey Open-File Report 96-705.

Working Group on California Earthquake Probabilities, 2003, Earthquake probabilities in the San Francisco Bay region: 2002-2031: U.S. Geological Survey Open-File Report 03-214.

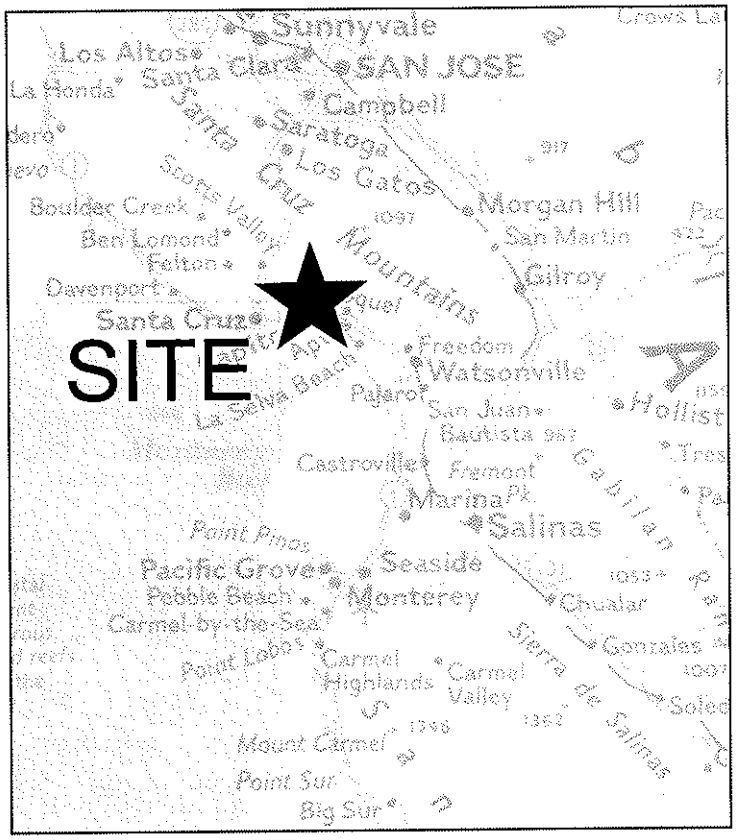
Youd, T.L. and Hoose, S.N., 1978, Historic ground failures in northern California triggered by earthquakes: USGS Prof. Paper 993.

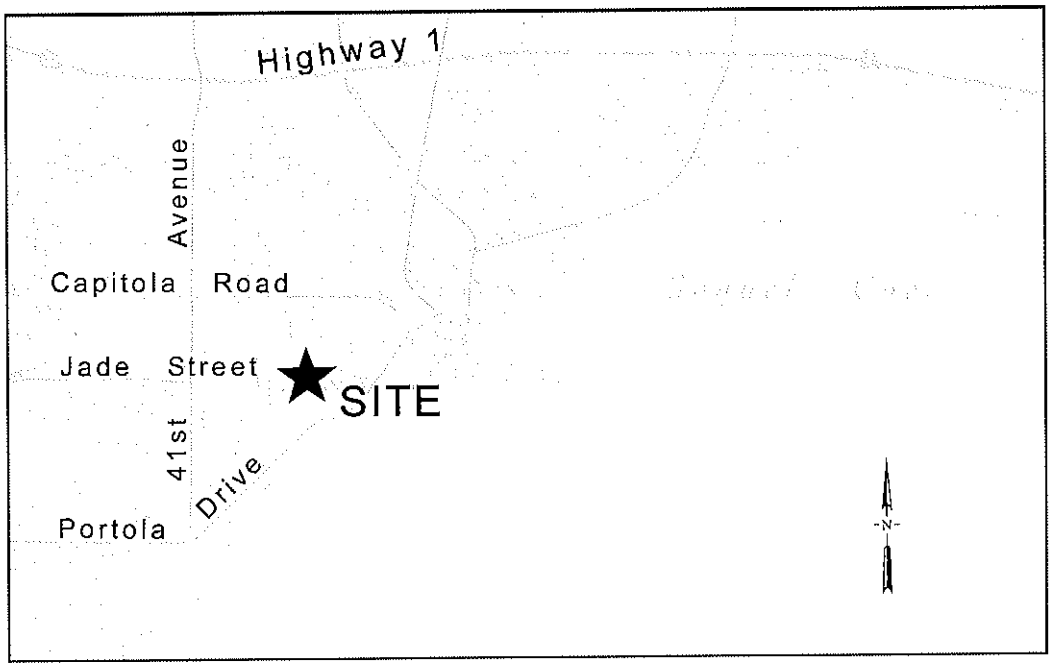
AERIAL PHOTOGRAPHS

Black and white unless indicated

Date	Approx. Scale	Project	Roll/Frame No.	Source
1928	1:12,000	1928-F;	2	UCSC lib
	Flown for Jt. Hwy Dist. No. 9			
1928	1:12,000	1928-H	SC-27, 28, 29	UCSC lib
	Flown for Jt. Hwy Dist. No. 9			
8/25/53	1:10,000	SC	50, 51	UCSC lib

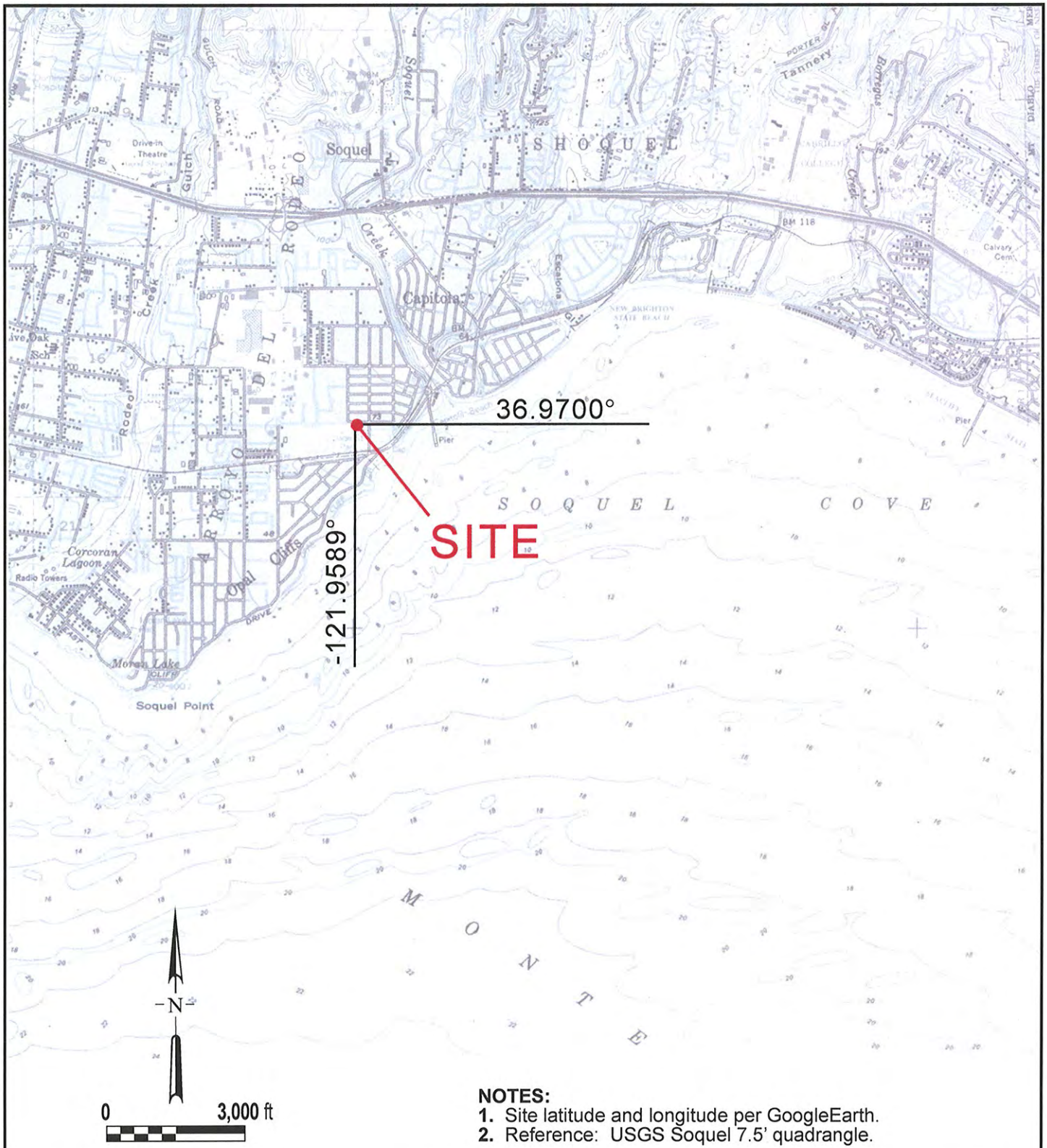
FIGURES





VICINITY MAP - no scale

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	**VICINITY MAP** **PROPOSED OPAL CLIFFS PRESCHOOL** **47th AVENUE** **CAPITOLA, CALIFORNIA**	**FIGURE** 1 **PROJECT** 2190G

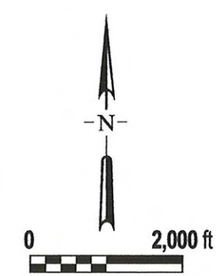


NOTES:
1. Site latitude and longitude per GoogleEarth.
2. Reference: USGS Soquel 7.5' quadrangle.

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	**SITE COORDINATE MAP** **PROPOSED OPAL CLIFFS PRESCHOOL** **47th AVENUE** **CAPITOLA, CALIFORNIA**	**FIGURE** 2 **PROJECT** 2190G

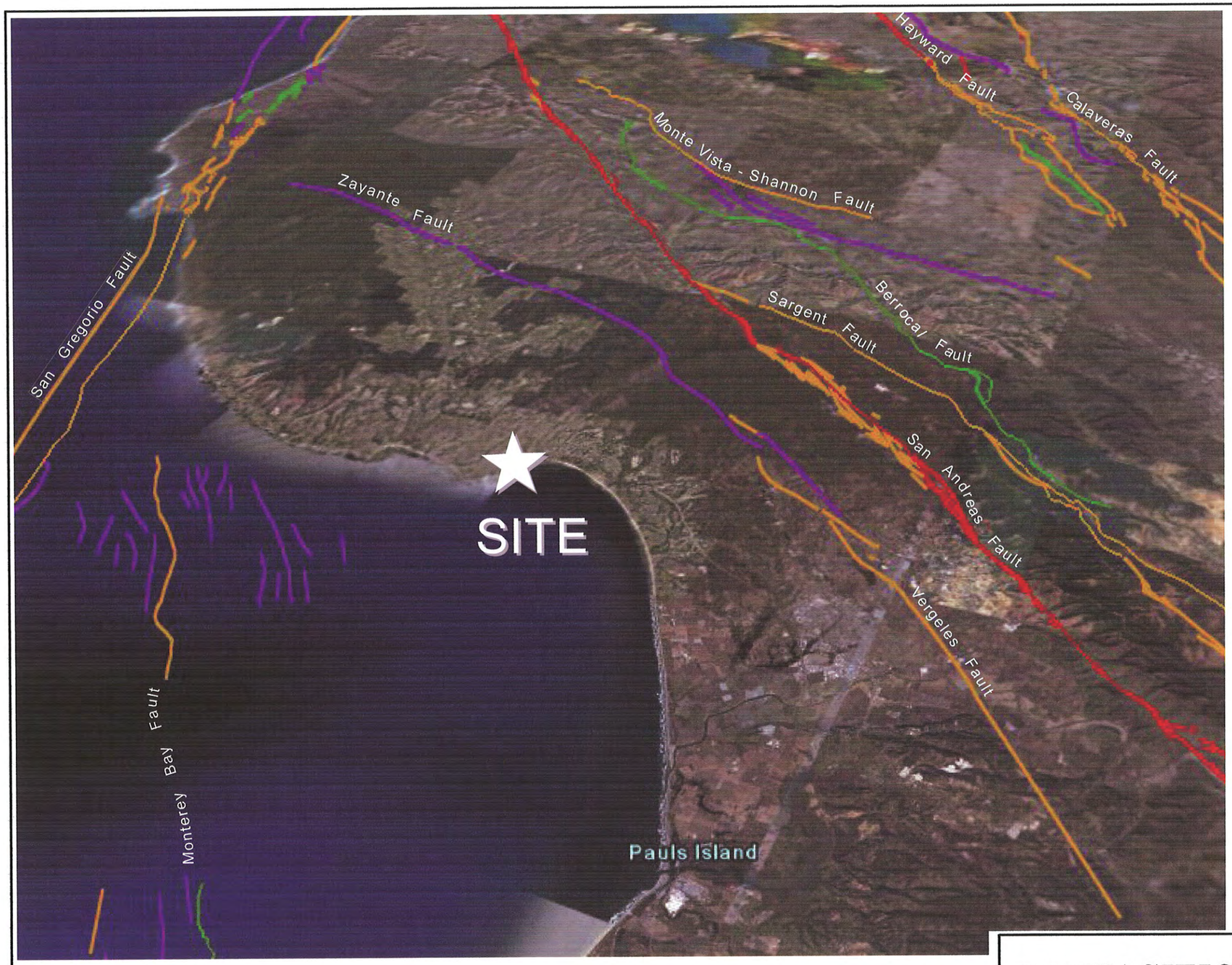
EXPLANATION

Qbs, Qal, Qtl	Young alluvium (beach sand, alluvium, colluvium)
Qcf	Older flood-plain deposits
Qcl	Lowest emergent terrace coastal terrace deposits
Qcu	Coastal terrace deposits (undifferentiated)
Tp	Purisima formation



BASE: Excerpted from Brabb (1997).

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	**REGIONAL GEOLOGIC MAP** **PROPOSED OPAL CLIFFS PRESCHOOL** **47th AVENUE** **CAPITOLA, CALIFORNIA**	**FIGURE** 3 **PROJECT** 2190G



EXPLANATION

FAULT ACTIVITY

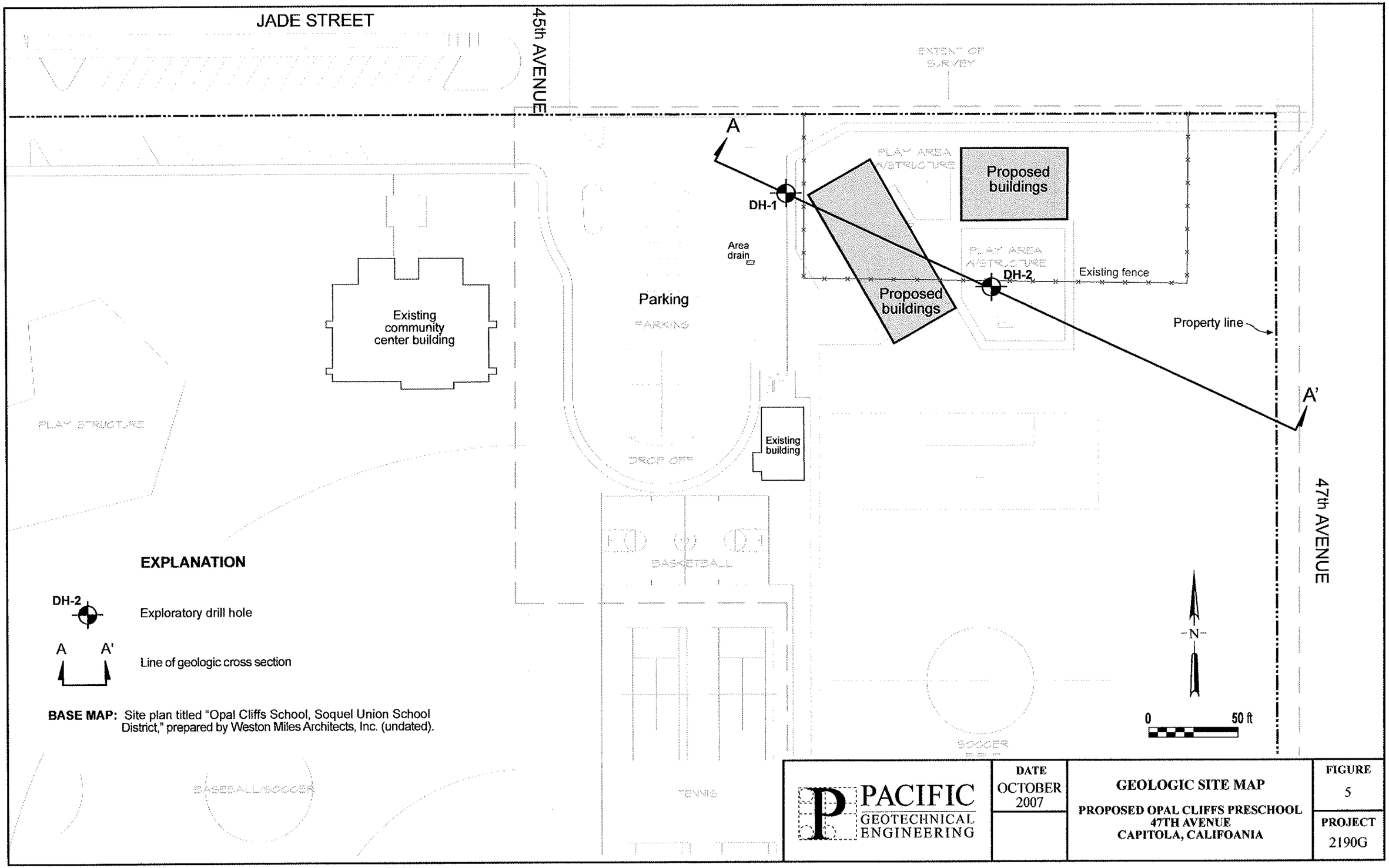
- Historic
- Holocene
- Late Quaternary
- Quaternary, undivided

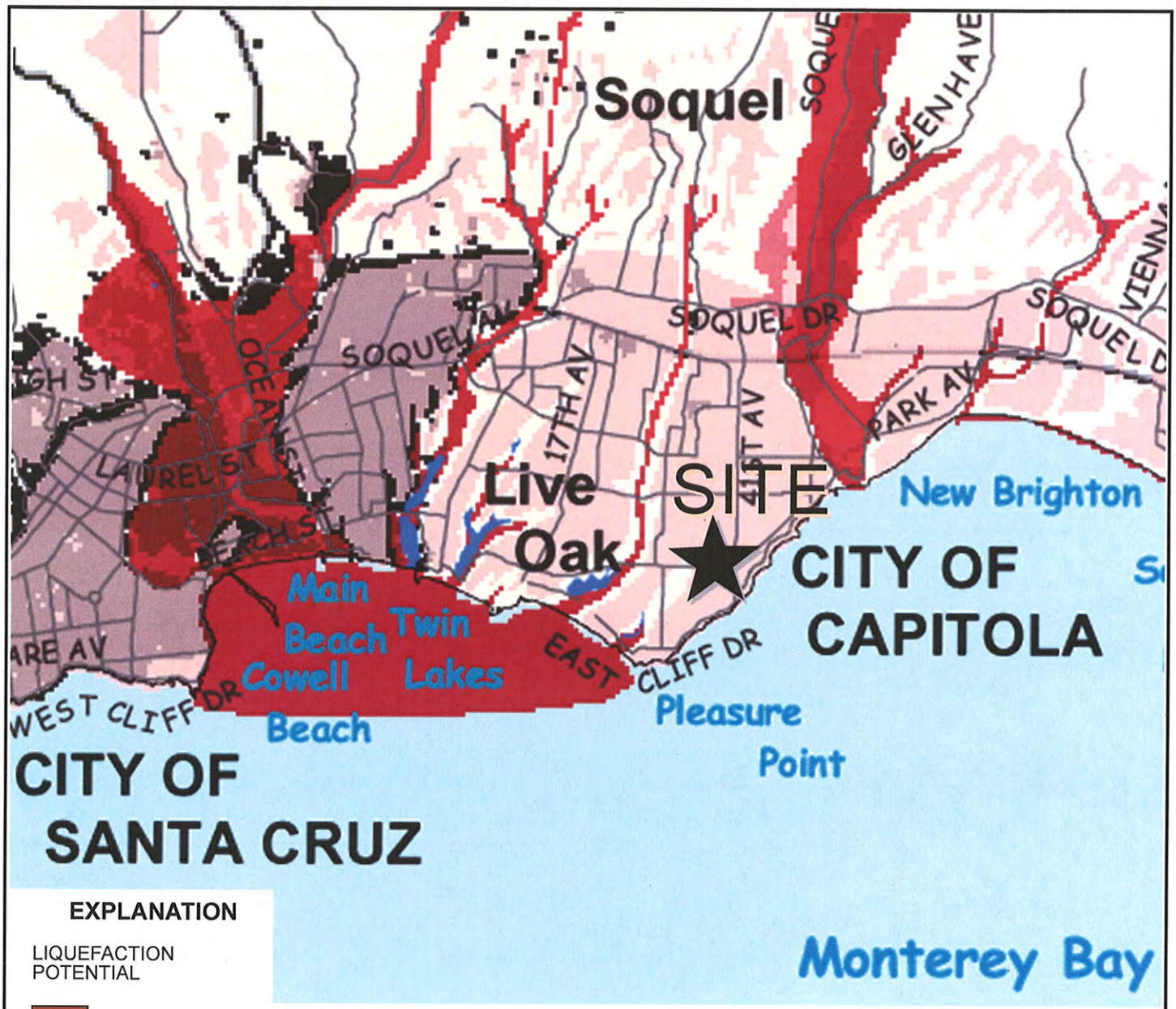
N

NOT TO SCALE

NOTE: Image from Quaternary Fault and Fold Database version 1.1 (reference USGS, 2004); GoogleEarth overlay accessible at http://earthquake.usgs.gov/qfaults/.

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	REGIONAL FAULT MAP PROPOSED OPAL CLIFFS PRESCHOOL 47th AVENUE CAPITOLA, CALIFORNIA	FIGURE 4 PROJECT 2190G


JADE STREET
45th AVENUE
47th AVENUE
EXTENT OF SURVEY
A
A'
DH-1
DH-2
Area drain
Parking
PARKING
DROP OFF
Existing community center building
Existing building
Proposed buildings
Proposed buildings
PLAY AREA W/STRUCTURE
PLAY AREA W/STRUCTURE
Existing fence
Property line
PLAY STRUCTURE
BASKETBALL
TENNIS
SOCCER
BASEBALL/SOCCER
N
0
50 ft
EXPLANATION
DH-2
Exploratory drill hole
A A'
Line of geologic cross section
BASE MAP: Site plan titled "Opal Cliffs School, Soquel Union School District," prepared by Weston Miles Architects, Inc. (undated).
PACIFIC GEOTECHNICAL ENGINEERING
DATE
OCTOBER 2007
GEOLOGIC SITE MAP
PROPOSED OPAL CLIFFS PRESCHOOL
47TH AVENUE
CAPITOLA, CALIFOANIA
FIGURE
5
PROJECT
2190G



EXPLANATION

LIQUEFACTION POTENTIAL

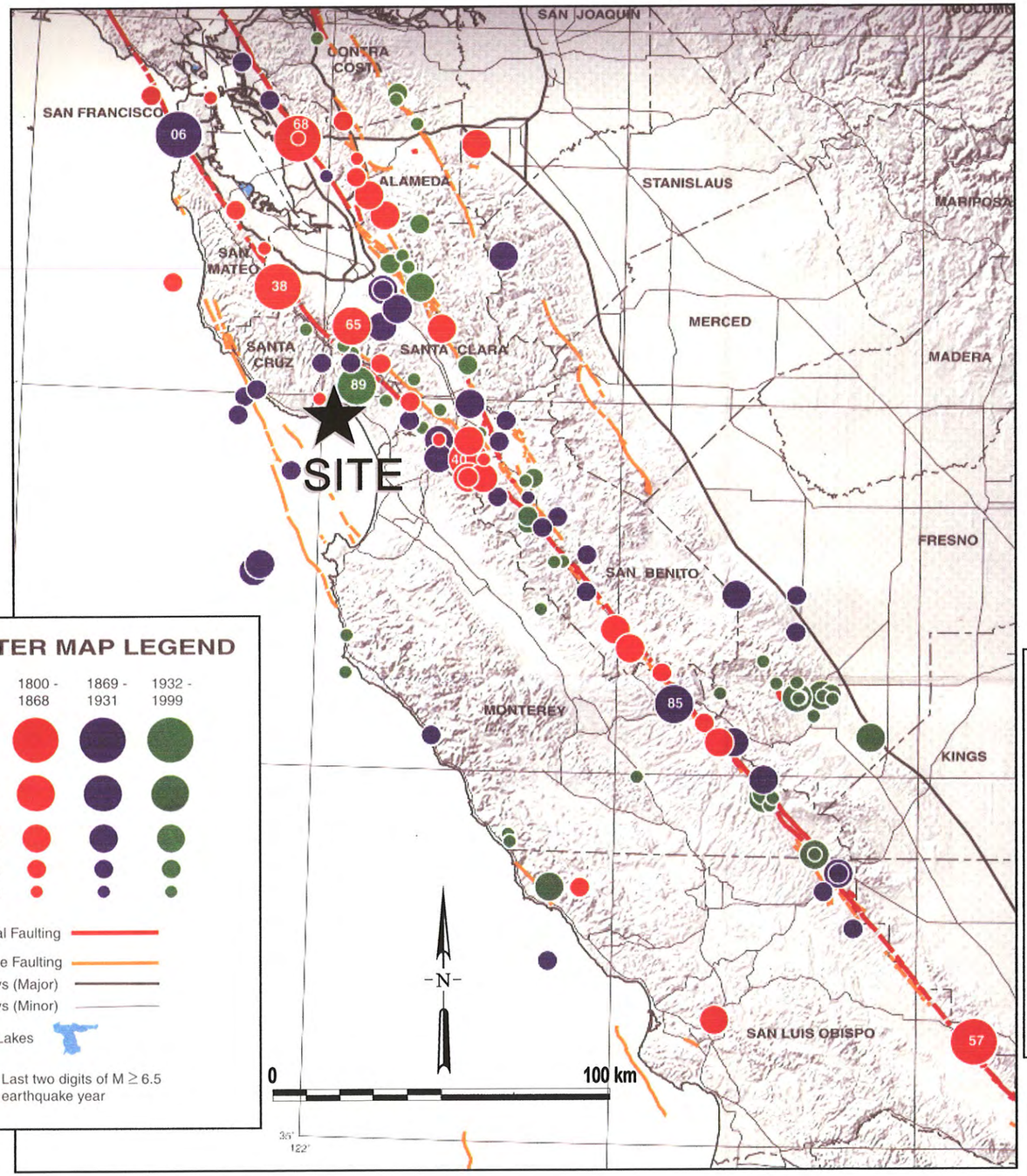
- Very High
- High
- Moderate
- Low

N

0 1 mile

BASE: "Liquefaction Hazard Areas" map available through Santa Cruz County Planning Department GIS; map derived from Dupre (1975).

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	REGIONAL LIQUEFACTION SUSCEPTIBILITY PROPOSED OPAL CLIFFS PRESCHOOL 47th AVENUE CAPITOLA, CALIFORNIA	FIGURE 6 PROJECT 2190G



EPICENTER MAP LEGEND

Period	1800 - 1868	1869 - 1931	1932 - 1999
Magnitude (M) ≥ 7.0			
6.5 - 6.9			
6.0 - 6.4			
5.5 - 5.9			
5.0 - 5.4			

Historical Faulting

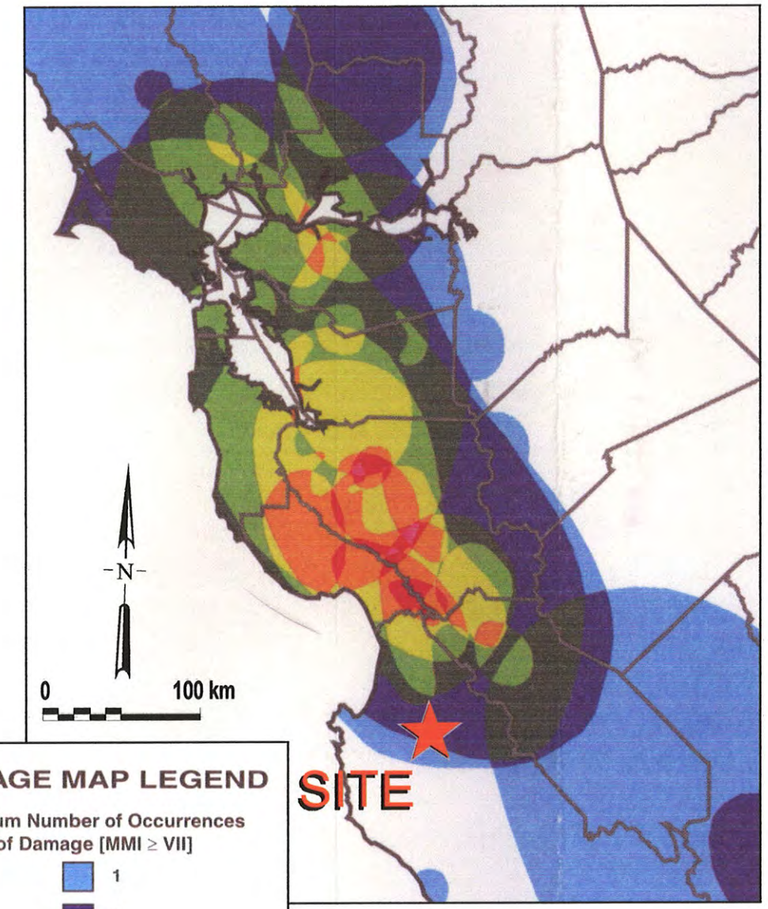
Holocene Faulting

Highways (Major)

Highways (Minor)

Lakes

65 Last two digits of M ≥ 6.5 earthquake year



DAMAGE MAP LEGEND

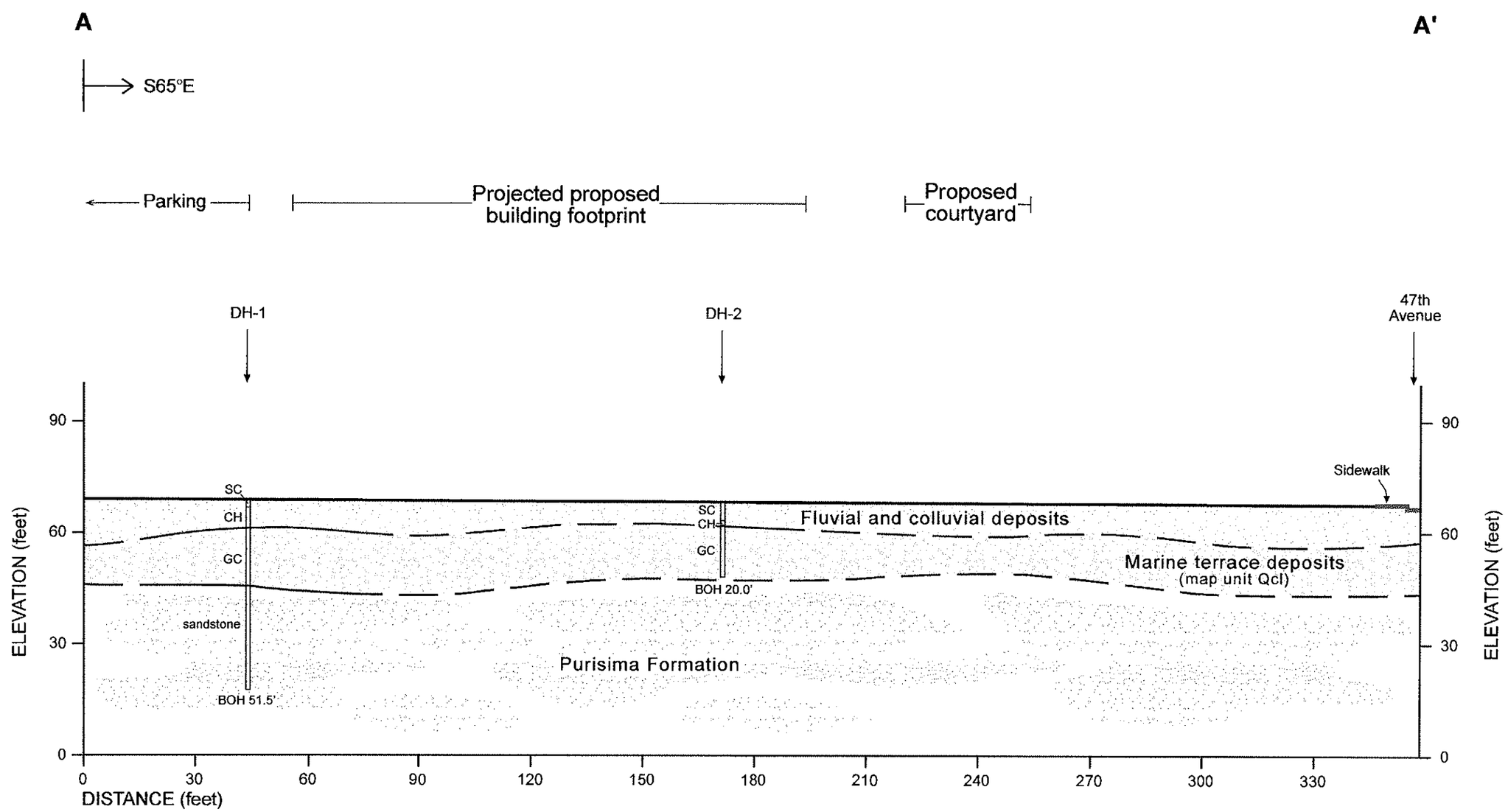
Minimum Number of Occurrences of Damage [MMI ≥ VII]

1
2
3
4
5
6
7
8

BASE: Toppozada and others (2000).

PACIFIC GEOTECHNICAL ENGINEERING

DATE	HISTORIC SEISMICITY MAP	FIGURE
OCTOBER 2007	PROPOSED OPAL CLIFFS PRESCHOOL 47th AVENUE CAPITOLA, CALIFORNIA	7
		PROJECT 2190G



NOTES:
1. Elevations assumed; derived per straight-line interpolation from USGS Soquel 7.5' quadrangle.
2. Apparent bedding in a plane of section derived from Brabb (1989).

PACIFIC GEOTECHNICAL ENGINEERING	DATE OCTOBER 2007	GEOLOGIC CROSS SECTION A-A' PROPOSED OPAL CLIFFS PRESCHOOL 47TH AVENUE CAPITOLA, CALIFORNIA	FIGURE 8 PROJECT 2190G

APPENDIX A

DATE: 9/18/2007	LOG OF EXPLORATORY DRILL HOLE	DH- 1

PROJECT NAME: Opal Cliffs Preschool **PROJECT NUMBER:** 2190 G

DRILL RIG: CME 55 with 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** -----

SAMPLER: D = 3" OD, 2½" ID Split-spoon; X = 2½" OD, 2" ID Split-spoon; I = Standard Penetrometer (2" OD SPT); S = Slough in sample

GROUND WATER DEPTH: Initial: perched at 23' Final: dry upon completion

DESCRIPTION OF EARTH MATERIALS	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
upper .5 to 1 foot fill or disturbed ground												
ALLUVIAL/COLLUVIAL DEPOSITS: **SANDY CLAY:** Very dark brown (10YR 2/2), moist, very stiff; fine-grained sand	CI	1, 2	S D D	18	>4.5	66		13		116		
CLAY with SAND: Brown (7.5YR 5/4) to yellowish brown (10YR 5/4), moist, very stiff; fine-grained sand; grades coarser with depth	CI	3, 4	S D D	26	>4.5		47	25	23	99		
SANDY FAT CLAY: Gray (7.5YR 5/1) coarsely mottled with strong brown (7.5YR 4/6); moist, hard; fine-grained sand; fine veins of dark red (2.5YR 3/6) (no red veins by 8 feet); grades coarser with depth; poor return	CH	5, 6, 7, 8	S D D	33								
MARINE TERRACE DEPOSITS: CLAYEY GRAVEL with SAND: Dark brown (7.5YR 3/3), moist, dense; mostly medium sand; gravel composed of cemented fine to medium-grained sandstone, rounded to subrounded, most of gravel observed in samples is 1 inch diameter to larger than 2.5 inches in diameter; continues to grade coarser with depth	GC	9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19	S D D	52				13		125		
			S D D	51								
by 20 feet-about 5-25% of gravel is composed of shale		20	S									

DATE: 9/18/2007	LOG OF EXPLORATORY DRILL HOLE	DH- 1

PROJECT NAME: Opal Cliffs Preschool **PROJECT NUMBER:** 2190 G

DRILL RIG: CME 55 with 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** -----

SAMPLER: D = 3" OD, 2½" ID Split-spoon; X = 2½" OD, 2" ID Split-spoon; I = Standard Penetrometer (2" OD SPT); S = Slough in sample

GROUND WATER DEPTH: Initial: perched at 23; Final: dry upon

DESCRIPTION OF EARTH MATERIALS	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
CLAYEY GRAVEL with SAND (continued)	GC	21	D D	33								
		22										
drilling gets smoother		23										
PURISIMA FORMATION: SANDSTONE: Dark grayish brown, wet, very soft; fine-grained; no structure observed; not cemented; moderately indurated		24										
		25	S									
		26	I	42				34				
		27										
		28										
		29										
by 30 feet-very dark bluish gray		30	S									
		31	I	52								
drills very hard and smooth at 32 feet		32										
		33										
		34										
by 35 feet-moderately to well indurated; moist		35	S									
		36	D D	42								
		37										
		38										
by 40 feet-**SANDY SILTSTONE:** Very dark bluish gray; moist; soft; very fine sand; moderately to well indurated		39										
		40	S									

DATE: 9/18/2007	LOG OF EXPLORATORY DRILL HOLE	DH- 1

PROJECT NAME: Opal Cliffs Preschool **PROJECT NUMBER:** 2190 G

DRILL RIG: CME 55 with 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** -----

SAMPLER: D = 3" OD, 2½" ID Split-spoon; X = 2½" OD, 2" ID Split-spoon; I = Standard Penetrometer (2" OD SPT); S = Slough in sample

GROUND WATER DEPTH: Initial: perched at 23' Final: dry upon

DESCRIPTION OF EARTH MATERIALS	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
SANDY SILTSTONE (continued)		41	I	54								
		42										
		43										
		44										
		45										
by 45 feet-**SILTY SANDSTONE** very fine-grained		46	S	48								
		47										
		48										
		49										
		50										
		51	S	54								
BOTTOM OF HOLE = 51.5 Feet Perched Water at 23 feet Hole dry 30 minutes after completion		52										
		53										
		54										
		55										
		56										
		57										
		58										
		59										
		60										

DATE: 9/18/2007	LOG OF EXPLORATORY DRILL HOLE	DH- 2

PROJECT NAME: Opal Cliffs Preschool **PROJECT NUMBER:** 2190 G

DRILL RIG: CME 55 with 140# auto hammer **LOGGED BY:** CSS

HOLE DIAMETER: 8" hollow stem auger **HOLE ELEVATION:** -----

SAMPLER: D = 3" OD, 2½" ID Split-spoon; X = 2½" OD, 2" ID Split-spoon; I = Standard Penetrometer (2" OD SPT); S = Slough in sample

GROUND WATER DEPTH: Initial: ----- Final: -----

DESCRIPTION OF EARTH MATERIALS	SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
upper .5 to 1 foot fill or disturbed ground												
ALLUVIAL/COLLUVIAL DEPOSITS: **CLAYEY SAND:** Black (7.5YR 2.5/1) streaked with fine veins of dark red (2.5YR 3/6); moist, loose; mostly fine-grained sand; minor medium to coarse rounded sand	SC	1	S D D	12	>4.5							
		2										
		3	S D D	8	2.5 1.0							
		4										
FAT CLAY with SAND: Gray (7.5YR 5/1) coarsely mottled with strong brown (7.5YR 4/6); moist, hard; fine-grained sand; fine veins of dark red (2.5YR 3/6) (no red veins by 8 feet); grades coarser with depth	CH	5	S D D	33	>4.5							
		6										
		7										
MARINE TERRACE DEPOSITS: CLAYEY SAND: Brown (7.5YR 4/4), moist, dense	SC	8	S D D	49								
		9										
CLAYEY SAND with GRAVEL: Dark brown (7.5YR 3/3); moist, dense; mostly fine-grained sand; rounded gravel; average diameter is 1 inch; coarsens slightly with depth; increase in gravel concentrations and size with depth	SC	10	S D D	70								
		11										
		12										
		13										
		14										
		15	S D D	32								
		16										
		17										
		18										
BOTTOM OF HOLE = 20 Feet No Groundwater Encountered		19	S D D	84/ 11"								
		20										

DIABLO GREEN
CONSULTING

December 12, 2008

Ms. Sherree Brown
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

Re: Transmittal
Biological Resources Assessment (Revision 1)
Opal Cliffs Project
4400 Jade Street, Capitola
Santa Cruz County, California

Dear Ms. Brown:

Diablo Green Consulting Inc. (DGC) is pleased to submit the revised Biological Resources Assessment for the Opal Cliffs project in Capitola, Santa Cruz County, California, dated December 12, 2008 and prepared by WRA Environmental Consultants Inc. (WRA).

DGC is pleased to have prepared this analysis for Soquel Union Elementary School District. Please contact me at (925) 846-9800 should you have any questions.

Sincerely,
DIABLO GREEN CONSULTING INC.

Holly D. Moore

Holly D. Moore, REA
Senior Project Manager

Biological Resources Assessment

4400 JADE STREET, CAPITOLA, SANTA CRUZ COUNTY CALIFORNIA

Prepared For:

Attention: Holly Moore
Diablo Green Consulting, Inc
3942 Valley Avenue, Suite J
Pleasanton, California 94566
(925) 846-9800

WRA Contact:
Tom Fraser
fraser@wra-ca.com

Date:
December 31, 2007
(Updated December 12, 2008)

wra
ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

TABLE OF CONTENTS

1.0 INTRODUCTION. 1

2.0 REGULATORY BACKGROUND. 1
2.1 Special Status Species. 1
2.2 Sensitive Biological Communities. 3

3.0 METHODS. 5
3.1 Biological Communities. 5
3.1.1 Non-sensitive Biological Communities. 6
3.1.2 Sensitive Biological Communities.. 6
3.2 Special Status Species. 6
3.2.1 Literature Review. 6
3.2.2 Site Assessment. 7

4.0 RESULTS. 7
4.1 Biological Communities. 8
4.1.1 Non-sensitive Biological Communities. 8
4.1.2 Sensitive Biological Communities.. 8
4.2 Special Status Species. 9
4.2.1 Plants.. 9
4.2.2 Wildlife. 9

5.0 SUMMARY AND RECOMMENDATIONS.. 9
5.1 Biological Communities. 10
5.2 Special Status Plant Species. 10
5.3 Special Status Wildlife Species. 10

6.0 POTENTIAL IMPACTS AND MITIGATION. 10
6.1 Potentially Significant Impacts. 11
6.2 Mitigation Measures. 11

7.0 REFERENCES.. 12

LIST OF FIGURES

Figure 1. Project Area Location Map. 2

LIST OF TABLES

Table 1. Biological Communities within the Project Area. 8

LIST OF APPENDICES

Appendix A. List of Observed Plant and Animal Species
Appendix B. Potential for Special Status Plant and Wildlife Species to Occur in the Project Area
Appendix C. Representative Project Area Photographs

1.0 INTRODUCTION

On November 7, 2007, WRA, Inc. performed an assessment of biological resources at Jade Street Park (Project Area) in Capitola, Santa Cruz County, California (Figure 1). The Soquel Union School District plans to construct a preschool on a portion of the parcel, which is currently zoned for school purposes. This report describes the results of the site visit, which assessed the Project Area for the (1) presence of special status species; (2) potential to support special status species; and (3) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. This report also contains an evaluation of potential impacts to special status species and sensitive biological resources that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

Jade Street Park is a 9.6-acre city park located at 4400 Jade Street, in Capitola, California. It is bounded by Jade Street and residential units to the north, 47th Avenue to the east, railroad tracks to the south and a mobile home park to the west. The Project Area is level, and the elevation is approximately 40 feet (NGVD). The majority of the Project Area is developed in the form of sports fields, tennis courts, a community garden and community center. A portion of the site is paved for parking lots. Vegetation consists mainly of ornamental shrubs and trees, as well as the garden and playing fields. Land uses in the surrounding neighborhood include residential and commercial development.

A biological assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol surveys be conducted. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

2.0 REGULATORY BACKGROUND

The City of Capitola General Plan (Freitas and Freitas 1981) and Local Coastal Program (City of Capitola 1981) serve to protect and preserve the natural resources within the Capitola area. Chapter six of the general plan (Conservation Element) outlines regional policies on biological issues and concerns unique to the region including riparian corridors, Monterey Bay and the Capitola coastline, and Monarch butterfly groves. The following sections also address federal and state regulations in addition to local policies adopted by the City of Capitola, and explain the regulatory context of the biological resources assessment report. Applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts are also discussed.

2.1 Special Status Species

Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal

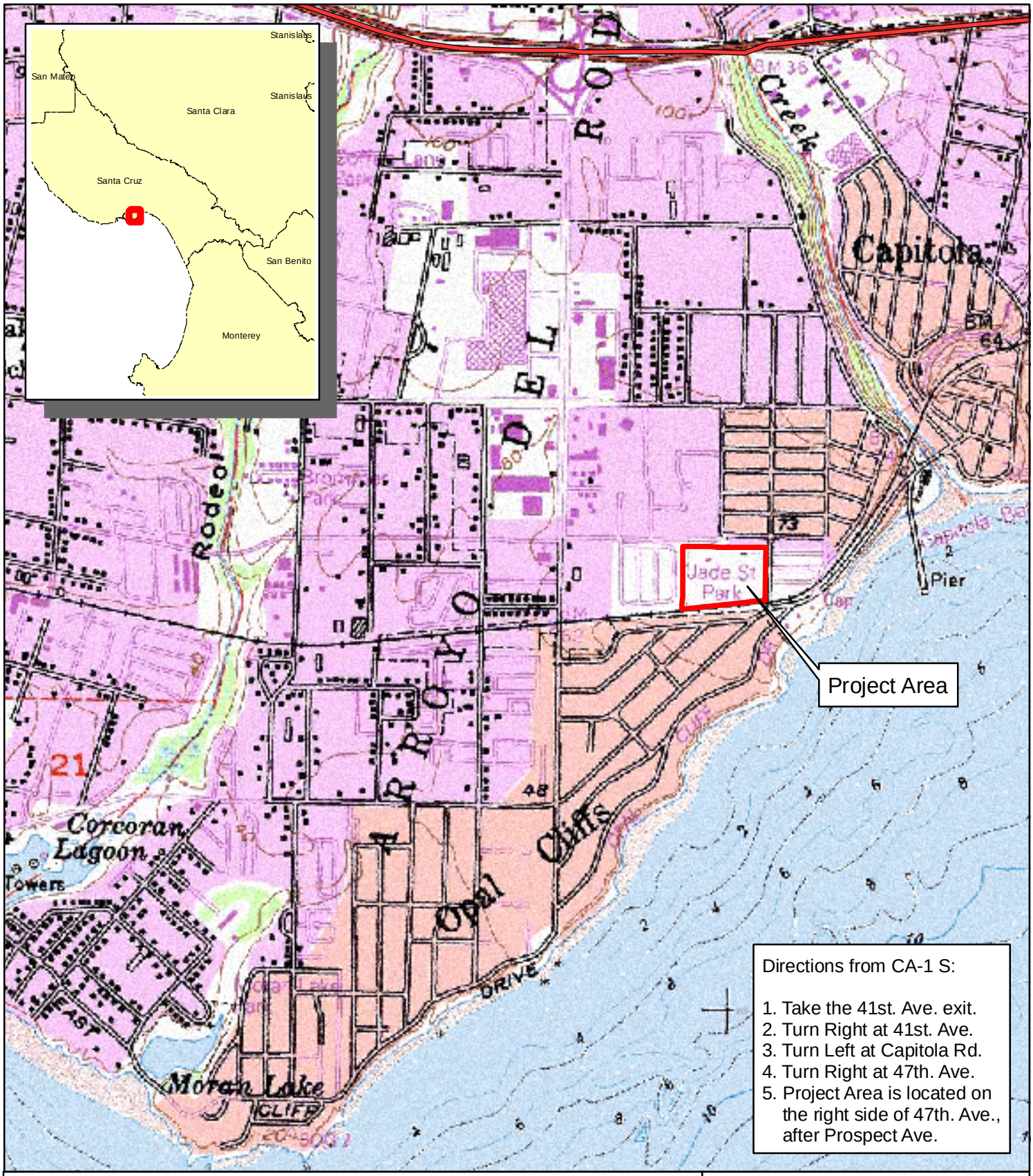


Figure 1. Project Area Location Map

4400 Jade St., Capitola
Santa Cruz County, California

N

0 500 1,000 2,000 Feet

wra
ENVIRONMENTAL CONSULTANTS

Date: November 2007
Basemap: USGS Topo Quad
Map By: Derek Chan
Filepath: L:\Acad 2000Files\16000\16133\gis\arcmap\Fig1_LocMap_20071119.mxd

Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFG special status invertebrates are all considered special status species. Although CDFG Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special status plant species. Impacts to these species are considered significant according to CEQA. CNPS List 3 plants have little or no protection under CEQA, but are included in this analysis for completeness.

Critical Habitat

Critical habitat is a term defined and used in the Federal Endangered Species Act as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the FESA "jeopardy standard." However, areas that are currently unoccupied by the species but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

2.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are protected under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the CDFG Streambed Alteration Program, and CEQA), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas, and General Plan elements).

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under

Section 404 of the Clean Water Act. The County of Santa Cruz has adopted the Corps definition of Waters of the U.S. in their Plan.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG. The City of Capitola general plan recommends special protection for significant riparian corridors present in the City, including Soquel Creek, Noble Gulch, and Tannery Gulch riparian corridors.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFG. CDFG ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFG on their *List of California Natural Communities Recognized by the CNDDB*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFG or USFWS must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County

General Plans or ordinances. The City of Capitola general plan recognizes a number of other sensitive biological communities including Monarch butterfly overwintering habitat found in Soquel Creek and Escalona Gulch.

Local Coastal Program Land Use Plan

The California Coastal Act of 1976 recognized the coastal resources of California as a distinct and valuable natural resource of vital and enduring interest to the people of California. Under the Act, the State Coastal Conservation and Development Commission prepared a statewide Coastal Plan. Most of the power vested in the California Coastal Commission by the Act is to be transferred to local governments through adoption and certification of "Local Coastal Programs."

The City of Capitola Local Coastal Program (LCP) was certified by the California Coastal Commission in 1981. The LCP contains an in-depth examination of the natural resources present in the Capitola area. The LCP also recommends policies and implementation measures for resource conservation and protection including water quality, erosion control, and stormwater runoff measures (Conditions 9, 12, 13 and 14), tree protection measures (Policy 8), and protection of riparian corridors (Policy 11) and other sensitive biological communities such as Monarch butterfly overwintering groves (Policy 18).

City of Capitola Tree Ordinance

The City of Capitola has adopted a local tree ordinance, outlined in Section 12.12.010 of the City Municipal Code. This ordinance provides for the protection and enhancement of existing tree cover throughout the City. Any proposed modification in the total tree canopy area on the Project Area must be approved and/or permits must be obtained according to the process outlined in the ordinance before tree work may proceed.

3.0 METHODS

On November 7, 2007, the Project Area was traversed on foot to determine (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats are present. All plant and wildlife species encountered were recorded and are summarized in Appendix A.

3.1 Biological Communities

Prior to the site visit, the Soil Survey of Santa Cruz County, California [U.S. Department of Agriculture (USDA) 1980], the Soquel 7.5 minute topographic quadrangle map [U.S. Geologic Survey (USGS) 1980] and aerial photographs of the Project Area were reviewed to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Project Area. Biological communities present in the Project Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

Wetlands and Waters

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the USFWS List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory, 1987) and Field Indicators of Hydric Soils in the United States (NRCS, 2002).

Other Sensitive Biological Communities

The Project Area was evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFG, and those communities that the City of Capitola considers sensitive. If present in the Project Area, these sensitive biological communities were mapped and are described in Section 4.1.2 below.

3.2 Special Status Species

3.2.1 Literature Review

Potential occurrence of special status species in the Project Area was evaluated by first determining which special status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special status species focused on the Soquel 7.5 minute USGS quadrangle and the eight surrounding USGS

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

quadrangles. The following sources were reviewed to determine which special status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- California Natural Diversity Database records (CNDDB) (CDFG 2007)
- CNPS Electronic Inventory records (CNPS 2007)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings 1994)
- A Field Guide to Western Reptiles and Amphibians (Stebbins, R.C. 2003)

3.2.2 Site Assessment

A site visit was made to the Project Area to search for suitable habitats for species identified in the literature review as occurring in the vicinity. The potential for each special status species to occur in the Project Area was then evaluated according to the following criteria:

1) No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

2) Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

5) Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the site visit, its presence will be recorded and discussed. Appendix B presents the evaluation of potential for occurrence of each special status plant and wildlife species known to occur in the vicinity of the Project Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above.

4.0 RESULTS

Jade Street Park is a 9.6-acre city park located at 4400 Jade Street, in Capitola, California. It is bounded by Jade Street and residential units to the north, 47th Avenue to the east, railroad tracks to the south and a mobile home park to the west. The Project Area is nearly level, and elevation is approximately 40 feet NGVD. The entire site appears to have been graded and leveled, and is

almost completely developed in the form of sports fields, tennis courts, parking lots, ornamental landscaping and a community center. A small community garden exists in the northeast corner of the Project Area. Vegetation consists mainly of ornamental shrubs and trees, as well as the garden and grass playing fields. Land uses in the surrounding neighborhood include residential and commercial development.

4.1 Biological Communities

Table 1 summarizes the area of the only biological community observed in the Project Area, developed land, a non-sensitive community. No sensitive biological communities were found in the Project Area.

Table 1. Biological Communities within the Project Area

Community Type	Area
Developed Land	9.6 acres
Total Project Area Size	**9.6 acres**

4.1.1 Non-sensitive Biological Communities

Developed Land

Although not described in the literature, Developed Land includes areas that have been paved, built upon, planted with ornamental plant species or otherwise developed or altered from a naturally-occurring state. The Project Area is composed entirely of developed land consisting of built structures, paved parking areas and playing courts, a softball diamond and soccer field, a jungle gym, planted ornamental tree species and a small community garden and unpaved parking area. Common observed species within the Project Area included coast redwood (*Sequoia sempervirens*) and sweetgum (*Liquidambar styraciflua*), as well as otherand other native and nonnative ornamental shrubs and trees. Small, unmaintained portions of the Project Area appear to be reverting to a semi-ruderal state and are dominated by weedy species or are unvegetated. These areas occur along the south property boundary between the playing fields and the train tracks. Common observed species in these areas included cheeseweed mallow (*Malva parviflora*) and English plantain (*Plantago lanceolata*).

4.1.2 Sensitive Biological Communities

Wetlands or “Other Waters”

No wetlands or “other waters” were observed in the Project Area. There were no observations of wetland hydrology or plants species that are frequently associated with wetlands. The entire Project Area is developed and no natural habitat was observed.

Streams, Lakes and Riparian Habitat

No riparian habitat was observed in the Project Area. There was no indication of past or present watercourses or woody riparian vegetation in the Project Area. The entire site is developed and no natural habitat was observed.

Other Sensitive Biological Communities

No other sensitive biological communities or sensitive habitat was observed in the Project Area. No other sensitive plant communities recognized by CDFG were observed and no communities that the City of Capitola recognizes as sensitive were observed in the Project Area.

4.2 Special Status Species

4.2.1 Plants

Based upon a review of the resources and databases given in Section 3.2.1, 48 special status plant species have been documented in the vicinity of the Project Area. The Project Area has the potential to support none of these species. Appendix B summarizes the potential for occurrence for each special status plant species with a documented occurrence in the vicinity of the Project Area. No special status plant species were observed in the Project Area during the assessment site visit. No special status plant species have a high or moderate potential to occur in the Project Area. A species list for observed plant species is provided in Appendix A.

4.2.2 Wildlife

Thirty-nine special status species of wildlife have been recorded in the vicinity of the Project Area. Appendix B summarizes the potential for each of these species to occur in the Project Area. Of these species, nine special status species have an unlikely potential of occurring within the Project Area. None of the special status species have a moderate potential or high potential of occurring within the Project Area. All of the wildlife observed in the Project Area are commonly found species, and many are adapted to occupying disturbed or urban areas. No special status wildlife species were observed. A species list for observed wildlife is provided in Appendix A.

Nine wildlife species have an unlikely potential for occurrence in the Project Area due to the altered environment and limited natural resources. There are no aquatic features to support fish or other aquatic organisms such as frogs and salamanders. Five of the listed species that are unlikely to occur within the site are birds that would most likely only utilize the Project Area for foraging or as a brief stop during migration. The other four listed species that have an unlikely potential to occur within the Project Area are bats which would most likely utilize the site to forage over, but may roost around the buildings or trees in the area. The chance of encountering any of these special status species for an extended period of time within the Project Area is unlikely, however there is the potential that any number of them may be observed during the course of construction activity.

5.0 SUMMARY AND RECOMMENDATIONS

No sensitive plant communities were identified within the Project Area. No special status plant species and no special status wildlife species were observed within the Project Area or have a moderate or high potential to occur within the Project Area. The following sections present recommendations for future studies and/or measures to avoid or reduce impacts to these species and sensitive habitats.

5.1 Biological Communities

The entire Project Area consists of developed land. No sensitive biological communities or sensitive habitat was observed in the Project Area. No other sensitive plant communities recognized by CDFG were observed. No future surveys or studies relating to sensitive biological communities or habitats are recommended for the Project Area.

A number of trees may be impacted as a result of the proposed project. Removal of any deciduous, flowering or evergreen tree over six inches in diameter at breast height (dbh) is regulated by the City of Capitola tree ordinance and will require a tree removal permit and adherence to specific policies laid out in the ordinance.

5.2 Special Status Plant Species

Of the 48 special status plant species with documented occurrences in the vicinity of the Project Area, no species were observed in the Project Area, and no species have a moderate or high potential to occur in the Project Area. This conclusion is based on the results of the site assessment and lack of any suitable habitat in the Project Area. No future protocol-level rare plant surveys are recommended for the Project Area.

5.3 Special Status Wildlife Species

No protocol-level wildlife surveys are recommended in the Project Area, however, breeding birds are protected under the Migratory Bird Treaty Act which prohibits the disturbance or harm of breeding birds and their eggs or young. Within the Project Area, an abandoned nest was found during the site assessment, and suitable nesting structures and material exist on site for various species. Since raptors and other birds may potentially nest within the trees within and adjacent to the Project Area, there is a potential for construction related impacts to nesting birds if they are utilizing the trees during construction. Disturbance that results in the abandonment of an active nest is considered a significant impact. It is recommended that breeding season (February 1 through August 31) surveys are carried out to determine the presence or absence of active nests. If an active nest is observed, an exclusion buffer of 100 to 500 feet (depending on the species and location) around the nest is recommended. An alternative recommendation is to schedule the construction outside of the bird breeding season to avoid potential impacts altogether.

6.0 POTENTIAL IMPACTS AND MITIGATION

The proposed project involves construction of a new preschool and associated parking areas, play structure and landscaping in the Project Area. The proposed project would result in development of approximately 2.4 acres of the 9.6 acres of the Project Area. All of the proposed Project Area is developed, and existing vegetation consists of planted ornamental trees and hedges, grass playing fields, a community garden and some small areas of semi-ruderal weedy species. None of these biological communities is considered sensitive under CEQA, by CDFG, or by the City of Capitola. The Project Area is surrounded by light commercial and residential development, meaning that no significant impacts to wildlife migratory corridors are likely to occur. No significant impacts to any special status plant or wildlife species are anticipated as a result of the proposed project. Potentially significant impacts as a result of the project and potential mitigation measures are discussed below.

6.1 Potentially Significant Impacts

Sensitive Biological Communities

No sensitive biological communities exist within the Project Area. No significant impacts to any sensitive biological communities are anticipated as a result of the project.

While not considered a sensitive biological community, the City of Capitola tree ordinance affords for the protection of all existing trees in the City. Removal, modification of tree habitat and pruning of certain trees are considered significant impacts under the ordinance. The removal of any deciduous or evergreen trees over six inches in diameter (dbh) on the Project Area is considered a significant impact by the ordinance and may require mitigation.

Special Status Plant Species

No special status plant species were observed within the Project Area or have a moderate or high potential to occur within the Project Area. No significant impacts to special status plant species are anticipated as a result of the project.

Special Status Wildlife Species

No special status wildlife species were observed within the Project Area or have a moderate or high potential to occur within the Project Area. However, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act. Any disturbance that results in the abandonment of an active nest is considered to be a significant impact and may require mitigation.

6.2 Mitigation Measures

Sensitive Biological Communities

No impacts to sensitive biological communities are expected to occur as a result of the proposed project; therefore, no mitigation measures are proposed.

Any significant impacts to trees over six inches in diameter (dbh) will require a tree removal permit and possibly mitigation in the form of tree replacement. The amount of mitigation necessary is dependent upon the remaining percentage of the Project Area covered by tree canopy after tree removal has taken place. If total tree canopy coverage will be below 15 percent of total site area after tree removal, tree replacement at a ratio of 2:1 is necessary to ensure that total tree canopy coverage remains at or above 15 percent. Tree replacement is not necessary when remaining total tree canopy will be at or above 30 percent, although tree removal permits still are necessary. In-lieu fees may be substituted for tree replacement only as a last resort and must be approved on a case by case basis.

Special Status Plant Species

No impacts to special status plant species are expected to occur as a result of the proposed project; therefore, no rare plant mitigation measures are proposed.

Special Status Wildlife Species

In order to avoid impacts to nesting birds protected by the Migratory Bird Treaty Act, it is recommended that breeding season (February through August) surveys are carried out to determine the presence or absence of active nests. If an active nest is observed, an exclusion buffer of 100 to 500 feet (depending on the species and location) around the nest is recommended as mitigation. If no active nests are observed during the survey(s) project activities may proceed. An alternative recommendation is to schedule the construction outside of the bird breeding season to avoid potential impacts altogether. No other impacts to special status wildlife species are expected as a result of the proposed project; therefore, no other wildlife mitigation measures are proposed.

7.0 REFERENCES

California Department of Fish and Game. 2007. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

California Native Plant Society. 2007. Electronic Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society, Sacramento, California.

City of Capitola. 1981. Local Coastal Program. Accessed online 12/12/08 at: http://www.ci.capitola.ca.us/capcity.nsf/ComDevIntro.html

City of Capitola Municipal Code. § 12.12. Community Tree and Forest Management. Accessed online 11/07/07. http://www.ci.capitola.ca.us/capcity.nsf/index.html

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.

Freitas and Freitas. 1981. City of Capitola General Plan. Access online 12/12/08 at: http://www.ci.capitola.ca.us/capcity.nsf/ComDevIntro.html

Hickman, J.C. (ed.) 1993. The Jepson manual: higher plants of California. University of California Press.

Holland, R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Prepared for the California Department of Fish and Game, Sacramento, California

Jennings, Mark R. 2004. An Annotated Check List of Amphibians and Reptile Species of California and Adjacent Waters. Third, revised edition. California Department of Fish and Game.

Natural Resources Conservation Service (NRCS). 2002. Field Indicators of Hydric Soils in the United States, version 5.0. G.W. Hurt, P.M. Whited, eds. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils, Fort Worth, TX.

Reed, Jr., Porter B. 1988. National List of Plant Species That Occur in Wetlands: National Summary. U.S. Fish & Wildlife Service. Biol. Rep. 88 (24). 244 pp.

Stebbins, R.C. A Field Guide to Western Reptiles and Amphibians, 3rd Edition. 2003. The Peterson Field Guide Series, Houghton Mifflin Company, New York.

U.S. Army Corps of Engineers (Corps). 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. December.

U.S. Army Corps of Engineers and the Environmental Protection Agency. 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.

U.S. Department of Agriculture, Soil Conservation Service. 1980. Soil Survey of Santa Cruz County, California. In cooperation with the University of California Agricultural Experiment Station.

U.S. Fish and Wildlife Service (USFWS). 2007 Official Species Lists, Sacramento Fish and Wildlife Service. Sacramento. November 2007.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento.

APPENDIX A

LIST OF OBSERVED PLANT AND ANIMAL SPECIES

Appendix A1. Wildlife species observed by WRA in or directly adjacent to the Project Area during the assessment conducted on November 7, 2007.	
SCIENTIFIC NAME	**COMMON NAME**
Birds	
Aphelocoma californica	Western Scrub-jay
Calypte anna	Anna's Hummingbird
Columba livia	Rock Dove
Corvus brachyrhynchos	American Crow
Dendroica coronata	Yellow-rumped Warbler
Falco columbarius	Merlin
Junco hyemalis	Dark-eyed Junco
Larus californicus	California Gull
Melospiza melodia	Song Sparrow
Regulus calendula	Ruby-crowned Kinglet
Sayornis nigricans	Black Phoebe
Sialia mexicana	Western Bluebird
Zenaida macroura	Mourning Dove
Zonotrichia leucophrys	White-crowned Sparrow
Reptiles	
Sceloporus occidentalis	Western fence lizard
Invertebrates	
Epiphyas postvittana	Light brown apple moth

Appendix A2. Plant species observed by WRA in or directly adjacent to the Project Area during the assessment conducted on November 7, 2007.

bold = native

SCIENTIFIC NAME	COMMON NAME
Anagallis arvensis	scarlet pimpernel
Arundo donax	giant reed
Avena barbata	wild oats
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Carduus pycnocephalus	Italian thistle
Convolvulus arvensis	bindweed
Cortaderia sp.	pampas grass
Cotoneaster pannosa	cotoneaster
Cupressus macrocarpa	**Monterey cypress**
Cynara scolymus	artichoke
Cynodon dactylon	Bermuda grass
Cyperus eragrostis	**tall flatsedge**
Erodium botrys	broad-leaf filaree
Eschscholzia californica	**California poppy**
Foeniculum vulgare	fennel
Geranium dissectum	cut leaf geranium
Hedera helix	English ivy
Hordeum marinum ssp. gussoneanum	Mediterranean barley
Hypochaeris radicata	rough cat's ear
Lactuca serriola	prickly lettuce
Limonium sp.	lavender
Liquidambar styraciflua	sweetgum
Lolium multiflorum	Italian rye grass
Malva parviflora	cheeseweed mallow
Medicago polymorpha	bur clover
Nerium oleander	oleander
Olea europaea	European olive
Passiflora manicata	red passionflower
Phyllostachys sp.	bamboo
Pinus sp.	**pine**
Platanus hybrida	London planetree
Plantago lanceolata	English plantain
Polygonum arenastrum	common knotweed

SCIENTIFIC NAME	COMMON NAME
Quercus agrifolia	**coast live oak**
Raphanus sativus	wild radish
*Rubus discolor**	Himalayan blackberry
Rubus leucodermis	**western raspberry**
Rubus ursinus	**California blackberry**
Sequoia sempervirens	**coast redwood**
Sonchus asper	prickly sow thistle
Trifolium sp.	clover
Vitis vinifera	wine grape
*Vulpia myuros var. myuros**	rattail fescue
Zantedeschia aethiopica	callalily
Zea mays	corn

APPENDIX B

POTENTIAL FOR SPECIAL STATUS PLANT AND WILDLIFE SPECIES TO OCCUR IN THE PROJECT AREA

Appendix B. Potential for Special Status Plant and Wildlife Species to Occur in the Project Area. List compiled from the California Department of Fish and Game (CDFG) Natural Diversity Database (2007), U.S. Fish and Wildlife Service (USFWS) County Species Lists (2007), California Native Plant Society (CNPS) Electronic Inventory (2007) search of the Felton, Loma Prieta, Moss Landing, Santa Cruz, Soquel,Laurel, and Watsonville West USGS 7.5' quadrangles and a review of other CDFG lists and publications (Jennings and Hayes 1994, Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mammals				
pallid bat *Antrozous pallidus*	CSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** Individuals may forage over site occasionally, but no suitable roosting habitat present within Project Area.	No further surveys or mitigation measures are necessary.
Towsend's western big-eared bat *Corynorhinus townsendii townsendii*	FSC, CSC, WBWG	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Very sensitive to human disturbance.	**No potential.** No suitable cave habitat in immediate vicinity; abundant human disturbance in Project Area would preclude the presence of this species.	No further surveys or mitigation measures are necessary.
southern sea otter *Enhydra lutris nereis*	FT, CFP	Nearshore marine environments from about Año Nuevo, San Mateo County. To Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
greater western mastiff bat *Eumops perotis californicus*	FSC, CSC, WBWG	Found in a wide variety of habitat. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**No potential.** No rocky outcrops or cliffs suitable for roosting in Project Area or immediate vicinity.	No further surveys or mitigation measures are necessary.
hoary bat *Lasiurus cinereus*	CSC	The most abundant bat in North America, and may be found in any location in California. Prefers open habitat or habitat mosaics and generally roosts in medium to large trees with dense foliage. Forages in open areas or along habitat edges.	**Unlikely.** This species is unlikely to roost in the Project Area due to marginal habitat, however it may occasionally forage over the site.	No further surveys or mitigation measures are necessary.
fringed myotis *Myotis thysanodes*	FSC, WBWG	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	**Unlikely.** No coniferous forest habitat on site. May occasionally forage over Project Area.	No further surveys or mitigation measures are necessary.
long-legged myotis *Myotis volans*	FSC, WBWG	Generally associated with woodlands and forest habitats. Roosts in large hollow snags in forested habitats. Other roosts include caves, mines and buildings.	**Unlikely.** No forested roosting habitat on site. May occasionally forage over Project Area.	No further surveys or mitigation measures are necessary.
American badger *Taxidea taxus*	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**No potential.** No suitable habitat in Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Birds				
Cooper's Hawk *Accipiter cooperii*	CSC	(Nesting) Associated with open or interrupted woodland and riparian habitats in the Coast ranges and foothills surrounding the Central Valley. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also nests in live oaks.	**Unlikely.** No suitable nesting habitat in Project Area, however may occasionally forage over site.	No further surveys or mitigation measures are necessary.
Tricolored Blackbird *Agelaius tricolor*	CSC, BCC	(Nesting colony) highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Unlikely.** No suitable nesting or foraging habitat within Project Area, however possible occurrence during migration.	No further surveys or mitigation measures are necessary.
Short-eared Owl *Asio flammeus*	CSC	(Nesting) found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**No potential.** No suitable nesting within Project Area. May occasionally forage off site in adjacent grassland areas.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Burrowing Owl *Athene cunicularia*	CSC, BCC	(Burrow sites and wintering observations) open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**No potential.** No suitable burrow sites or nesting habitat within the Project Area.	No further surveys or mitigation measures are necessary.
Western Snowy Plover *Charadrius alexandrinus nivosus*	FT, CSC	(Nesting) Federal listing applies only to the Pacific coastal population. Found on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	**No potential.** No sandy or gravel habitat found within the Project Area.	No further surveys or mitigation measures are necessary.
Western Yellow-billed Cuckoo *Coccyzus americanus occidentalis*	FC, SE, BCC, FS sensitive	(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**No potential.** No suitable riparian habitat found within Project Area.	No further surveys or mitigation measures are necessary.
White-tailed Kite *Elanus leucurus*	CFP	(Nesting) Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**No potential.** No suitable nesting or foraging habitat found within Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
American Peregrine Falcon *Falco peregrinus anatum*	FD, SE, BCC, CFP, CDF sensitive, FS sensitive	(Nesting) Prefers dry, open terrain, either level or hilly. Forages far afield, even to marshlands and ocean shores. Nests near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	**Unlikely.** No suitable nesting habitat in Project Area, however may occasionally forage over site.	No further surveys or mitigation measures are necessary.
Saltmarsh Common Yellowthroat *Geothlypis trichas sinuosa*	BCC, CSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Unlikely.** No suitable nesting or foraging habitat within Project Area, however possible occurrence during migration.	No further surveys or mitigation measures are necessary.
Bald Eagle *Haliaeetus leucocephalus*	FD, SE, CFP, CDF sensitive	(Nesting and wintering) Frequents ocean shores, lake margins, and rivers for both nesting and wintering. Requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches. Most nests are located within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branchwork. Shows a preference for ponderosa pine. Roosts communally in winter.	**No potential.** No suitable nesting habitat within or immediately adjacent to Project Area	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Loggerhead Shrike *Lanius ludovicianus*	BCC, CSC	(Nesting) broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**No potential.** No suitable foraging or nesting habitat within Project Area.	No further surveys or mitigation measures are necessary.
Osprey *Pandion haliaetus*	CSC, CDF sensitive	(Nesting) Frequents ocean shores, bays, fresh-water lakes, and larger streams. Prefers large trees, snags and dead-topped trees near large water bodies for cover and nesting. May travel 5-6 miles from nest to fishing areas.	**No potential.** No suitable nesting habitat found within Project Area.	No further surveys or mitigation measures are necessary.
California Brown Pelican *Pelecanus occidentalis californicus*	FE, SE, CFP	(Nesting colony) colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators.	**No potential.** No suitable habitat to nest or forage are found within the Project Area.	No further surveys or mitigation measures are necessary.
California Clapper Rail *Rallus longirostris obsoletus*	FE, SE, CFP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**No potential.** No marsh habitat within or immediately adjacent to Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Bank Swallow *Riparia riparia*	ST	Migrant in riparian and other lowland habitats in western California. Colonial nester in riparian areas with vertical cliffs and bands with fine-textured or fine-textured sandy soils near streams, rivers, lakes or the ocean.	**Unlikely.** No suitable nesting habitat within or immediately adjacent to Project Area, however may occasionally forage over site.	No further surveys or mitigation measures are necessary.
Least Bell's Vireo *Vireo bellii pusillus*	FE, SE, BCC	(Nesting) summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	**No potential.** No willow or riparian habitat present within Project Area.	No further surveys or mitigation measures are necessary.
Reptiles and Amphibians				
California tiger salamander *Ambystoma californiense*	FT, CSC, RP	Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Seasonal ponds and vernal pools are crucial to breeding. Adults utilize mammal burrows as estivation habitat.	**No potential.** No suitable aquatic habitat or upland habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	FE, SE, CFP	Wet meadows near sea level in a few restricted locales in Santa Cruz and Monterey counties. Aquatic larvae prefer shallow (<12 inches) water, using clumps of vegetation or debris for cover. Adults use mammal burrows.	**No potential.** No suitable aquatic habitat for larvae and no suitable upland habitat or corridors to upland habitat are found in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
black legless lizard *Anniella pulchra nigra*	CSC, FS sensitive	Sand dunes and sandy soils in the Monterey Bay and Morro Bay regions. Inhabit sandy soil/dune areas with bush lupine and mock heather as dominant plants. Moist soil is essential.	**No potential.** No sand dunes or sandy soil in the Project Area.	No further surveys or mitigation measures are necessary.
southwestern pond turtle *Emys (=Clemmys) marmorata pallida*	CSC, FS sensitive, RP	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 feet elevation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.
coast (California) horned lizard *Phrynosoma coronatum (frontale)*	CSC, FS sensitive	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**No potential.** No suitable habitat within the Project Area.	No further surveys or mitigation measures are necessary.
California red-legged frog *Rana aurora draytonii*	FT, CSC, RP	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to estivation habitat.	**No potential.** No suitable upland habitat, and no corridor to suitable habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
foothill yellow-legged frog *Rana boylii*	CSC, FS sensitive	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.
Fishes				
tidewater goby *Eucyclogobius newberryi*	FE, CSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.
steelhead - central CA coast ESU *Oncorhynchus mykiss*	FT, NMFS	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
coho salmon - central CA coast ESU *Oncorhynchus kisutch*	FE, SE, NMFS	Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only.	**No potential.** No suitable aquatic habitat is present in the Project Area.	No further surveys or mitigation measures are necessary.
Invertebrates				
Ohlone tiger beetle *Cicindela ohlone*	FE, SSI	Remnant native grasslands with California oatgrass and purple needlegrass in Santa Cruz County. Substrate is poorly-drained clay or sandy clay soil over bedrock of Santa Cruz mudstone.	**No potential.** No suitable habitat found within the Project Area.	No further surveys or mitigation measures are necessary.
Smith's blue butterfly *Euphilotes enoptes smithi*	FE, SSI	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz counties. Hostplant: *Eriogonum latifolium* and *Eriogonum parvifolium* are utilized as both larval and adult foodplants.	**No potential.** No suitable coastal dune habitat found within the Project Area.	No further surveys or mitigation measures are necessary.
California linderiella *Linderiella occidentalis*	RP	Occurs in vernal pools and other seasonal depressions containing clear water with low alkalinity and conductivity	**No potential.** Suitable vernal pool or seasonal swale habitat is not present in Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mount Hermon (=barbate) June beetle *Polyphylla barbata*	FE, SSI	Known only from sand hills at Mount Hermon, Santa Cruz County (type locality).	**No potential.** No suitable habitat found within the Project Area.	No further surveys or mitigation measures are necessary.
Zayante band-winged grasshopper *Trimerotropis infantilis*	FE, SSI	Endemic to isolated sandstone deposits in the Santa Cruz Mountains (the Zayante Sand Hills ecosystem). Restricted to sand parkland habitat found on ridges and hills within the Zayante Sand Hills ecosystem.	**No potential.** No suitable sandstone deposits found within the Project Area.	No further surveys or mitigation measures are necessary.
Plants				
bent-flowered fiddleneck *Amsinckia lunaris*	List 1B.2	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland. 3-500 meters. Blooms March-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
slender silver-moss *Anomobryum julaceum*	List 2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts. 100-1000 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz manzanita *Arctostaphylos andersonii*	List 1B	Broadleafed upland forest, Chaparral, North Coast coniferous forest/openings, edges. 60-730 meters. Blooms November-April.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Hooker's manzanita *Arctostaphylos hookeri* ssp. *hookeri*	List 1B	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub/sandy. 85-536 meters. Blooms January-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Pajaro manzanita *Arctostaphylos pajaroensis*	List 1B	Chaparral(sandy). 30-760 meters. Blooms December-March.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Bonny Doon manzanita *Arctostaphylos silvicola*	List 1B	Closed-cone coniferous forest, Chaparral, Lower montane coniferous forest/inland marine sands. 120-600 meters. Blooms February-March.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
marsh sandwort *Arenaria paludicola*	FE, SE List 1B	Bogs and fens, Marshes and swamps(freshwater)/sandy, openings. 3-170 meters. Blooms May-August.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz Mountains pussypaws *Calyptridium parryi* var. *hesseae*	List 3	Chaparral, Cismontane woodland. 305-1115 meters. Blooms May-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
swamp harebell *Campanula californica*	List 1B	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Marshes and swamps(freshwater), North Coast coniferous forest/mesic. 1-405 meters. Blooms June-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
bristly sedge *Carex comosa*	List 2	Coastal prairie, Marshes and swamps(lake margins), Valley and foothill grassland. 0-625 meters. Blooms May-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
deceiving sedge *Carex saliniformis*	List 1B	Coastal prairie, Coastal scrub, Meadows and seeps, Marshes and swamps(coastal salt)/mesic. 3-230 meters. Blooms June-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Coyote ceanothus *Ceanothus ferrisiae*	FE, List 1B	Chaparral, Coastal scrub, Valley and foothill grassland/serpentinite. 120-460 meters. Blooms January-May.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	List 1B	Valley and foothill grassland (alkaline). 1-230 meters. Blooms May-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Ben Lomond spineflower *Chorizanthe pungens* var. *hartwegiana*	FE, List 1B	Lower montane coniferous forest(maritime ponderosa pine sandhills). 90-610 meters. Blooms April-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Monterey spineflower *Chorizanthe pungens* var. *pungens*	FT, List 1B	Chaparral(maritime), Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland/sandy. 3-450 meters. Blooms April-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Scotts Valley spineflower *Chorizanthe robusta* var. *hartwegii*	FE, List 1B	Meadows and seeps(sandy), Valley and foothill grassland(mudstone and Purisima outcrops). 230-245 meters. Blooms April-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
robust spineflower *Chorizanthe robusta* var. *robusta*	FE, List 1B	Chaparral(maritime), Cismontane woodland(openings), Coastal dunes, Coastal scrub/sandy or gravelly. 3-300 meters. Blooms April-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
seaside bird's-beak *Cordylanthus rigidus* ssp. *littoralis*	SE, List 1B	Closed-cone coniferous forest, Chaparral(maritime), Cismontane woodland, Coastal dunes, Coastal scrub/sandy, often disturbed sites. 0-452 meters. Blooms April-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz cypress *Cupressus abramsiana*	FE, SE, List 1B	Closed-cone coniferous forest, Chaparral, Lower montane coniferous forest/sandstone or granitic. 280-800 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
tear drop moss *Dacryophyllum falcifolium*	List 1B	North Coast coniferous forest/carbonate. 50-275 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Norris' beard-moss *Didymodon norrisii*	List 2	Cismontane woodland, Lower montane coniferous forest/intermittently mesic, rock. 600-1700 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Ben Lomond buckwheat *Eriogonum nudum* var. *decurrens*	List 1B	Chaparral, Cismontane woodland, Lower montane coniferous forest(maritime ponderosa pine sandhills)/sandy. 50-800 meters. Blooms June-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
coast wallflower *Erysimum ammophilum*	List 1B	Chaparral(maritime), Coastal dunes, Coastal scrub/sandy, openings. 0-60 meters. Blooms February-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz wallflower *Erysimum teretifolium*	FE, SE, List 1B	Chaparral, Lower montane coniferous forest/inland marine sands. 120-610 meters. Blooms March-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
minute pocket-moss *Fissidens pauperculus*	List 1B	North Coast coniferous forest(damp coastal soil). 10-100 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
sand gilia Gilia tenuiflora ssp. *arenaria*	FE, ST, List 1B	Chaparral(maritime), Cismontane woodland, Coastal dunes, Coastal scrub/sandy, openings. 0-45 meters. Blooms April-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	List 1B	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland/sandy or serpentinite. 15-400 meters. Blooms June-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Loma Prieta hoita *Hoita strobilina*	List 1B	Chaparral, Cismontane woodland, Riparian woodland/usually serpentinite, mesic. 30-860 meters. Blooms May-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz tarplant *Holocarpha macradenia*	FT, SE, List 1B	Coastal prairie, Coastal scrub, Valley and foothill grassland/often clay, sandy. 10-220. Blooms June-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Kellogg's horkelia *Horkelia cuneata* ssp. *sericea*	List 1B	Closed-cone coniferous forest, Chaparral(maritime), Coastal dunes, Coastal scrub/sandy or gravelly, openings. 10-200 meters. Blooms April-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Point Reyes horkelia *Horkelia marinensis*	List 1B	Coastal dunes, Coastal prairie, Coastal scrub/sandy. 5-350 meters. Blooms May-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
smooth lessingia *Lessingia micradenia* var. *glabrata*	List 1B	Chaparral, Cismontane woodland/serpentinite, often roadsides. 120-420 meters. Blooms July-November.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
arcuate bush mallow *Malacothamnus arcuatus*	List 1B	Chaparral, Cismontane woodland. 15-355 meters. Blooms April-September.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Mt. Diablo cottonweed *Micropus amphibolus*	List 3	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland/rocky. 45-825 meters. Blooms March-May.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
marsh microseris *Microseris paludosa*	List 1B	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland. 5-300 meters. Blooms April-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
robust monardella *Monardella villosa* ssp. *globosa*	List 1B	Broadleafed upland forest (openings), Chaparral(openings), Cismontane woodland, Coastal scrub, Valley and foothill grassland. 100-915 meters. Blooms June-July.	**Not Present.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Dudley's lousewort *Pedicularis dudleyi*	SR, List 1B	Chaparral(maritime), Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland. 60-900 meters. Blooms April-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Santa Cruz Mountains beardtongue *Penstemon rattanii* var. *kleei*	List 1B	Chaparral, Lower montane coniferous forest, North Coast coniferous forest. 400-1100 meters. Blooms May-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
white-rayed pentachaeta *Pentachaeta bellidiflora*	FE, SE, List 1B	Cismontane woodland, Valley and foothill grassland(often serpentinite). 35-620 meters. Blooms March-May.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Monterey pine *Pinus radiata*	List 1B	Closed-cone coniferous forest, Cismontane woodland. 25-185 meters.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Choris' popcorn-flower *Plagiobothrys chorisianus* var. *chorisianus*	List 1B	Chaparral, Coastal prairie, Coastal scrub/mesic. 15-160 meters. Blooms March-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
San Francisco popcorn-flower *Plagiobothrys diffusus*	SE, List 1B	Coastal prairie, Valley and foothill grassland. 60-360 meters. Blooms March-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
spiny milkwort *Polygala subspinosa*	List 2	Great Basin scrub, Pinyon and juniper woodland/gravelly, rocky. 1330-1705 meters. Blooms May-August.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
Scotts Valley polygonum *Polygonum hickmanii*	FE, SE, List 1B	Valley and foothill grassland (mudstone and sandstone). 210-250 meters. Blooms May-August.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
pine rose *Rosa pinetorum*	List 1B	Closed-cone coniferous forest. 2-300 meters. Blooms May-July.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
San Francisco campion Silene verecunda ssp. *verecunda*	List 1B	Coastal bluff scrub, Chaparral, Coastal prairie, Coastal scrub, Valley and foothill grassland/sandy. 30-645 meters. Blooms March-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Santa Cruz clover *Trifolium buckwestiorum*	List 1B	Broadleafed upland forest, Cismontane woodland, Coastal prairie/gravelly, margins. 105-610 meters. Blooms April-October.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.
saline clover *Trifolium depauperatum* var. *hydrophilum*	List 1B	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools. 0-300 meters. Blooms April-June.	**No potential.** No suitable habitat exists in the Project Area.	No further surveys or mitigation measures are necessary.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
FD	Federal De-listed
NMFS	Species under the Jurisdiction of the National Marine Fisheries Service
BCC	USFWS Birds of Conservation Concern
RP	Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
SE	State Endangered
ST	State Threatened
SR	State Rare
CSC	CDFG Species of Special Concern
CFP	CDFG Fully Protected Animal
SSI	CDFG Special Status Invertebrates
WBWG	Western Bat Working Group High Priority species
List 1B	CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere
List 2	CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere
List 3	CNPS List 3: Plants about which CNPS needs more information (a review list)

APPENDIX C

REPRESENTATIVE PROJECT AREA PHOTOGRAPHS

Appendix C

Top: Gazebo in community garden where inactive bird nest was observed.

Bottom: Representative photo of community garden looking east. Trailers are located east of 47th Ave. Photos taken 11/7/07.

wra ENVIRONMENTAL CONSULTANTS

Appendix C

Top: Looking south from entrance of community garden at playing field with liquidamber and redwood trees.

Bottom: Looking west from southeast corner of property along railroad. Photos taken 11/7/07.

wra ENVIRONMENTAL CONSULTANTS

January 2, 2008

Ms. Sherree Brown
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

Re: Transmittal
Cultural Resources Study
Opal Cliffs Project
4400 Jade Street, Capitola
Santa Cruz County, California

Dear Ms. Brown:

Diablo Green Consulting Inc. (DGC), dba DGC Associates Inc., is pleased to submit the Cultural Resources Study for the Opal Cliffs project in Capitola, Santa Cruz County, California, dated December 2007 and prepared by Historic Resource Associates (HRA).

The survey recorded that "after a careful field inspection of the entire project area, no significant prehistoric or historic archaeological sites, features, or artifacts were found, nor were any significant historic buildings, structures, or objects identified within the boundaries of the project." Therefore, "no further cultural study is recommended for this project."

It should be noted that, according to HRA, "while the probability of finding subsurface archaeological features or artifacts is unlikely, if during the course of construction activities within the project area, a previously unidentified or subsurface archaeological site or feature is encountered, work should stop at that location and a qualified cultural resource professional should be contacted to examine the discovery and determine its significance."

DGC is pleased to have prepared this analysis for Soquel Union Elementary School District. Please contact me at (925) 846-9800 should you have any questions.

Sincerely,
DGC ASSOCIATES INC.

Holly D. Moore

Holly D. Moore, REA, CSST
Senior Project Manager

Diablo Green Consulting dba DGC Associates Inc. · A Woman-Owned California Corporation

3942 Valley Avenue, Suite J · Pleasanton · California · 94566 · Phone (925) 846-9800 · Fax (925) 397-3051

CULTURAL RESOURCES STUDY OF THE OPAL CLIFFS PROJECT 4400 JADE STREET, CAPITOLA, SANTA CRUZ COUNTY, CALIFORNIA 95010

DECEMBER 2007

PREPARED FOR:

Diablo Green Consulting, Inc.
3942 Valley Avenue, Suite J
Pleasanton, CA 94566

PREPARED BY:

Historic Resource Associates
2001 Sheffield Drive
El Dorado Hills, CA 95762-5905

TABLE OF CONTENTS

CULTURAL RESOURCES STUDY

I. Project Description and Summary of Findings . . 1

II. Cultural Setting 3

A. Environment 3
B. Climate and Hydrology 3
C. Archaeology 4
D. Ethnography 5
E. Historic Context 7

III. Research Results 9

IV. Survey Methods and Field Inventory . . . 10

V. Report of Study Findings 10

VI. Discussion and Interpretation 10

VII. Recommendations 11

VIII. Professional Qualifications 12

IX. References 12

ATTACHMENTS

Site Vicinity Map

Assessor’s Parcel Map

Site Plans

Photograph Record

Northwest Information Center Record Search

Native American Heritage Commission Record Search

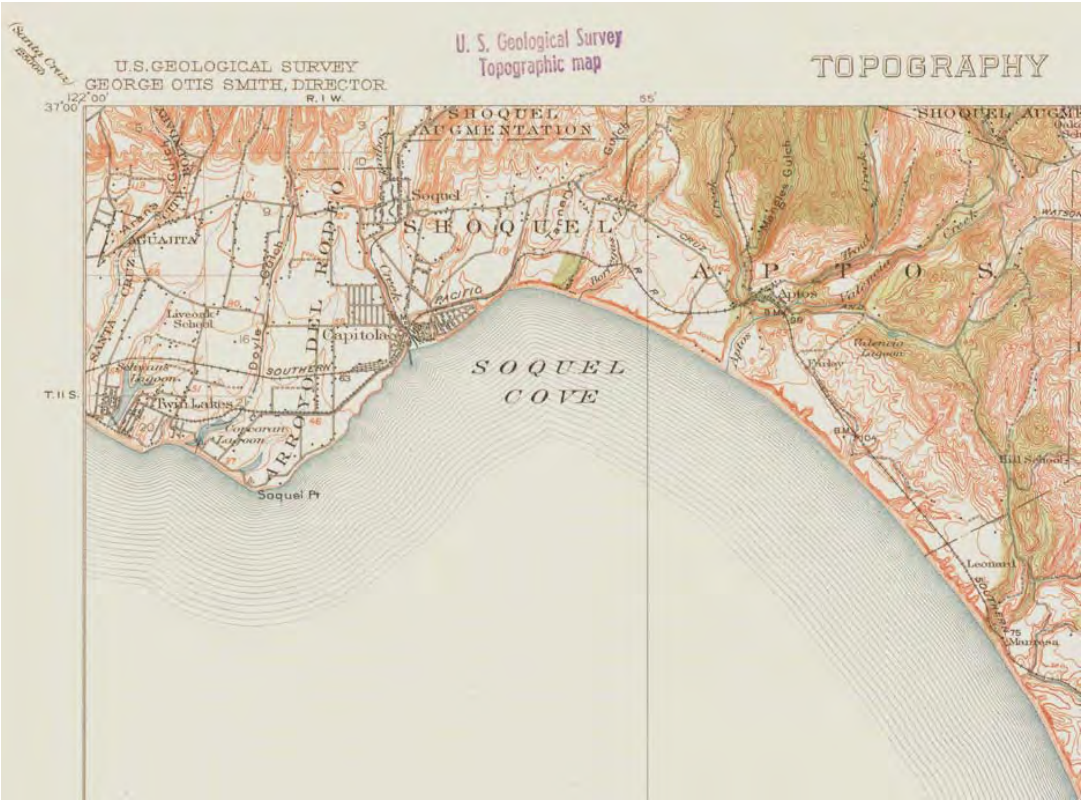
I. PROJECT DESCRIPTION AND SUMMARY OF FINDINGS

Historic Resource Associates has contracted with Diablo Green Consulting, Inc. to conduct a field investigation, identify, make recommendations, and prepare a final report in accordance with 36 CFR Part 800, Section 106 of the National Historic Preservation Act (NHPA), and with the criteria for defining significant properties for the California Register of Historic Resources (CRHR) under the California Environmental Quality Act (CEQA) for the development of a school to be located at 4400 Jade Street, Capitola, Santa Cruz County, California. The project is located in a portion of Section 16, Township 11 South, Range 1 West on the USGS 7.5' Soquel Topographic Quadrangle Map (refer to Site Vicinity Map).

The project, which is referred to as Opal Cliffs, is approximately 9.6 acres in size, and is identified as Assessors Parcel Number (APN) 034:551:02. The project involves the development of an elementary school on property owned by the Soquel Union Elementary District since circa 1956. The project area is now occupied by a community garden and soccer field, being part of the Capitola Community Center. The proposed project area is bounded on the south by the Southern Pacific railroad tracks, on the east by 47th Street, and on the north by Jade Street. Surrounding houses, mobile home parks, and apartments appear to have been built circa 1960-1980. The railroad right of way dates to the 1870s.

The project as designed calls for excavation, grading, concrete work, paving, new construction, utilities, and water/sewer connections. The project parcel has already undergone extensive grading and landscaping. The community gardens lie in the far northern end of the project area, and the soil has been cultivated and supplanted with fertilizers, top soil, and other non-native materials to induce good plant growth. The soccer field has been graded, cultivated, and planted in grass with a sprinkler system, street trees, and other facilities in keeping with its current use.

On November 8, 2007, the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) conducted a record search (07-660) of the proposed project area (refer to NWIC Record Search). Review of data maps, historic-period maps, and literature for Santa Cruz County indicated that the project area contained no recorded Native American or historic-period resources. No previous studies had been conducted of the project area. Review of historical literature and maps indicated Southern Pacific Railroad sidings and buildings adjacent to the project area, as indicated on the 1914 USGS 15' Capitola Quadrangle Map. A record search conducted on November 30, 2007 by the Native American Heritage Commission (NAHC) failed to indicate the presence of Native American cultural resources in the project area.



USGS 15' Capitola Quadrangle, 1914 (1" = 62,500')

After a careful field inspection of the entire project area, no significant prehistoric or historic archaeological sites, features, or artifacts were found, nor were any significant historic buildings, structures, or objects identified within the boundaries of the project, as defined by the proposed school development. Therefore, according to CEQA, and Section 36 CFR 800.4(d)(1) of the NHPA, no cultural resource properties were identified, and, therefore, no cultural resource properties will be affected by the proposed undertaking, and no further cultural resources study is recommended.

II. CULTURAL SETTING

A. Environment

The project area lies at an elevation of approximately 50 feet above mean sea level in what is referred to as the Opal Cliffs area, south of Capitola. The entire project area at some point was likely used for agriculture and later graded, cultivated, and landscaped by the school district for use by the community as a soccer field and garden. No native vegetation was observed on or near the project site.

The physical geography of the region is marked by broad marine terraces that rise eastward from the ocean to the Coast Range Mountains. These terraces comprise two rock formations, including the Santa Cruz Mudstone Formation, a soft, eroding bedrock, and the Monterey Formation, a hard silica-rich deposit containing Monterey chert, an important source of tool stones for the Native Americans of the Central Coast. These terraces have been exposed to continuous wave action, resulting in the formation of the steep cliffs along the coastline. Sandy "pocket" beaches occur intermittently, where streams have cut through the marine terrace to meet the sea, and are often paired with estuaries formed by some of the larger streams, such as Scott and Waddell Creeks (Environmental Science Associates 2001).

B. Climate and Hydrology

The modern climate of Santa Cruz County is Mediterranean and is characterized by relatively dry summers and moist winters. Average annual rainfall is 27 inches and mean annual temperature is 59 degrees. In the summer months, seasonal upwelling of cold ocean waters generate morning coastal fog. On-shore north or northwesterly winds usually increase during the day, clearing off the fog, then die down again by evening, when the fog returns (Ibid). Paleoenvironmental studies suggest that climatic conditions 30,000 to 5,000 years ago were slightly cooler and more moist than today. Pollen studies indicate that the climate was more like present day Fort Bragg in Northern California (Ibid; Jones and Hildebrandt 1990). Current conditions appear to have been in place for at least the past 5,000 years ago (Ibid). The topography of Santa Cruz County includes coastal terrace, ridge system, riverine, and upland meadow (Hylkema 1991). Modern vegetation was most likely present for many centuries before recorded history, and its diversity provided early inhabitants an array of plants and trees for food, medicine, tools and baskets.

C. Archaeology

The coastal region stretching from Santa Cruz to San Francisco has been the subject of numerous archaeological surveys and excavations since the early 1900s. The earliest of these investigations reflected an amateur archaeological approach, which included collecting museum specimens for display purposes or for private collections. In general, these studies were extremely limited in scope and provided little understanding of prehistoric culture of the Central Coast.

Beginning in the late 1960s, academic research by students at San Francisco State University (and later San Jose State University) expanded the number of recorded archaeological sites along the coasts of San Mateo and Santa Cruz counties. While much of this research was limited to site recording and limited sampling, several important studies provided valuable information for the development of a regional chronology and an integrated understanding of prehistoric life (Roop 1976; Hylkema 1991). Hylkema's 1991 thesis was particularity important, as it not only provided the first integrated examination of prehistoric adaptations along the San Mateo-Santa Cruz coast, but it also provided the basis for comparisons of local economies with those of surrounding areas, including the San Francisco Bay, Monterey Bay and inland valleys (Environmental Science Associates 2001). Finally, studies driven by the requirements of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA) since the 1970's have provided important data towards our understanding of the area’s prehistory (Jones and Hildebrandt 1990; Fitzgerald and Ruby 1997; Environmental Science Associates 2001).

Archaeological and ethnographic studies indicate that the North Coast was possibly occupied from as early as the 10,000 years ago. The earliest evidence for occupation of the region comes from a site located in the Santa Cruz Mountains near Scotts Valley. This deeply buried site has been dated to 8000 BC and is the only evidence of what archaeologists refer to as the Paleo Indian period (Cartier 1993), a designation that subsumes all occupations dating earlier than 5000 BC. Progressively rising sea levels documented for this period may have obliterated additional evidence for occupation of the coast during this time. As with the climate, sea levels appear to have stabilized to current conditions by 5000 years ago (Environmental Science Associates 2001).

Evidence of habitation along the coast proper comes later, during the Lower Archaic period (3000-5000 BC), and from a site at Sand Hill Bluff (Jones and Hildebrandt 1990). This locale appears to have been occupied over a span of 5000 years, beginning about 6000 years ago. Habitation of both the coastal and interior regions is evidenced in numerous sites dating to the

Middle Archaic (3000 - 1000 BC) and Upper Archaic (1000 BC - AD 1000). The latest prehistoric occupation appears to have occurred during what is known as the Emergent Period (AD 1000 - 1800), as evidenced at a site located at Davenport Landing (Fitzgerald and Ruby 1997) and at a site about 5 miles inland in the Santa Cruz Mountains (Hylkema 1991; Environmental Science Associates 2001).

D. Ethnography

Beginning immediately south of the Carquinez Strait, and continuing southward to Big Sur, was a region once occupied by the Costanoan peoples. Aboriginal groups of the San Francisco and Monterey Bay area came to be known collectively as Costanoan, a word derived from the Spanish word Costaños meaning 'coast people' (Levy 1977). The term Costanoan refers to a linguistic family consisting of eight languages: Karkin was spoken in a single tribelet on the southern edge of the Carquinez Strait; Chochenyo or East Bay Costanoan was spoken among the tribelets occupying the east shore of San Francisco Bay between Richmond and Mission San Jose, as well as the Livermore Valley; Tamyen or Santa Clara Costanoan was spoken around the south end of San Francisco Bay and in the lower Santa Clara Valley; Ramaytush or San Franciscp Costanoan was spoken in San Mateo and San Francisco counties; Awaswas or Santa Cruz Costanoan was spoken among the people living along the ocean shore between Davenport and Aptos in Santa Cruz County; Mutsun was spoken among the tribelets of the Pajaro River drainage; Rumsen speakers occupied the lower Carmel, Sur, and lower Salinas rivers; and Chalon or Soledad was spoken on the Salinas River (Levy 1977).

Most of what we know about native inhabitants of the region has been pieced together from the Spanish exploring expeditions, ethnographic accounts in the 1920s and 1930s, and archaeological research. The Costanoan territory was occupied by approximately 50 separate and politically autonomous tribelets, each one occupying one or more permanent village sites and consisting of 50 to 500 persons (Milliken 1993). The Costanoans encountered by the Spanish were hunter-gatherers who managed their resources to ensure a sustained livelihood. They lived in sedentary communities in domed structures covered with thatched roofs, and relied for subsistence on nuts and seeds from various trees and plants, local fauna, and fish, particularly salmon, from the rivers and Pacific Ocean. Materials crafted by the Costanoans and used in subsistence activities included baskets, mortars, pestles, nets, net sinkers, anchors, and a variety of chipped stone tools.

Trade with the surrounding Plains Miwok, Sierra Miwok and Yokuts allowed nonindigenous materials and food (i.e. piñon nuts) to be brought into the area as well. In exchange, the Costanoan are thought to have exported bows, salt, and salmon to neighboring groups (Levy

1977). Economic reciprocity, in addition to intermarriage, is thought to have linked settlements together, some of which, by Spanish accounts, indicate stable and prosperous villages with as many as 200 people (Milliken 1993). Overall population density along this part of the coast was nevertheless very sparse.

For the first human inhabitants living along the Santa Cruz County coastline, there was a variety of natural resources that were available. Plants bearing edible seeds and/or leafy greens are known to have been used throughout the year, as revealed by plant remains from archaeological sites. In the spring, lupine was harvested for its edible green leaves, while chia provided seeds. During the late spring and summer a variety of seed-bearing plants were gathered, including tarweed, goosefoot and elderberry. Soaproot was particularly important as it was used for food (edible root), fish poison, soap, and brushes (Fitzgerald and Ruby 1997). Numerous species of trees and shrubs were also a source of nuts and berries, including baynut, hazelnut, and tan oak, all of which were harvested in the fall (Ibid). Buckeye, California bay laurel and coast live oaks were also considered to have been economically important (Hylkema 1991).

Acorns and grass seeds constituted a significant proportion of the native diet. Ethnographic accounts indicate that the natives sought to increase seed production of coast grasslands through intentional burning. Rediscovered as "prescribed burning" in modern times, this prehistoric practice also served to increase forage and attract large mammals, such as black tailed deer, which were regularly hunted (Jones and Hildebrandt 1990). Other animals in the aboriginal larder came from the coastal scrubland, oak woodlands and forests of the area, habitats for terrestrial mammals, reptiles, fish, and amphibians. Modern and historic use of the region has altered somewhat the ecology of the Central Coast and reconstruction of prehistoric conditions is, at least partly, by inference, but species known to have been important to native peoples include a wide variety of small to medium mammals, including the jackrabbit, cottontail rabbit, kangaroo rat, ground squirrel and badger.

Studies have identified more than two hundred resident species of birds in the region but, perhaps more importantly, the cold and nutrient-rich waters immediately offshore lie astride the Pacific migratory waterfowl flyway. Avifaunal remains from archaeological sites on the Santa Cruz coast indicate that waterbirds, such as canvasback duck, common merganser and blue winged teal were part of the prehistoric diet (Dietz et al. 1988). Offshore vegetal resources such as kelp, seaweed and sea palm are known to have been exploited prehistorically. Native peoples collected these plants on-shore and roasted them for immediate consumption or dried and stored them for future use (Jones and Hildebrandt 1990). Shell refuse from an extensive menu of mussels, barnacles, limpets, chitons, abalone and clams are commonly found in coastal archaeological sites. Migratory marine mammals known historically on the Central Coast were

probably present prehistorically, and no doubt harbor seals, northern elephant seals, and sea lions were sources of protein and fat. These species were attracted by the same fish exploited by humans: Pacific mackerel, night smelt, white croaker, righteyed and lefteyed flounder and anchovy (Jones and Hildebrandt 1990).

The Rumsen were reportedly the first of the Costanoan peoples to be encountered by Spanish exploring expeditions in 1602 and between 1769 and 1776 (Levy 1977). Between 1770 and 1797, seven missions were established within Costanoan territory (Ibid). During the mission period, 1770-1835, significant changes occurred for the Costanoan people. The population was recruited into nearby missions and their traditional subsistence economy was replaced by an agricultural one. Analyses of mission baptismal records demonstrate that the last Costanoan tribelets living a traditional existence had disappeared by 1810 (Hylkema 1991; Cook 1943; Levy 1977; Environmental Science Associates 2001). The population declined from 10,000 in 1770 to less than 2,000 in 1832, due to the introduction of European diseases and falling birth rates.

The mission culture that had absorbed and to some degree supported the Costanoans was short-lived. The secularization or abandonment of the missions by the Mexican government in 1832 caused the Costanoan to relocate to different areas and establish small settlements, fragmenting the survivors and separating them farther away from their cultural heritage. It is believed that the Costanoan languages were probably extinct by 1935 (Environmental Science Associates 2001; Hylkena 1991; Levy 1977).

E. Historical Context

The diverse range of natural resources in Santa Cruz County played an important role in settlement patterns during prehistoric, ethonographic, and historic times. In 1774 Father Francisco Palou accompanied an expedition to San Francisco Bay and beyond. Father Palou recommended the banks of the San Lorenzo River for the establishment of a mission. On September 25, 1791, Mission Santa Cruz was completed (Verardo and Verardo 1987:13). During the mid-1790s the Mission expanded and by 1831 mission lands contained over 8,000 head of cattle, creating a large trade in hides and tallow. The mission also included a large number of Native American neophytes, many of whom would remain in the Mission system throughout their adult lives (Ibid:14).

In 1832 the Mission system was secularized, and the Indians of the Mission were given Spanish surnames and goods were distributed among them. In the meantime, American interest in California and the Santa Cruz area had grown. During the 1840s settlement increased along the northern California coastline, including exploratory incursions by notable individuals, such as John Charles Freemont in 1846 (Ibid:19). Fremont enlisted American volunteers and formed a small battalion, which included Americans living in the Santa Cruz area. Fremont's brief incursion against Mexico, known as the Bear Flag Revolt, ended with the treaty of Guadalupe-Hidalgo in 1848, wherein Alta California became a territory of the United States (Ibid).

With the discovery of gold at Coloma in January 1848, came a wave of new immigration to California and the Santa Cruz area. Tanneries sprang up along the coast, utilizing tan oak bark, which meant stripping the bark from the trees. Other industries included grist mills, saw mills, and small agriculture. In 1851, the first lime kiln was established in Santa Cruz County (Ibid:23). Another important industry that developed in the county was the production of "giant powder." In December 1861, the California Powder Works were established. The company was the first on the coast to produce nitro-cotton or smokeless powder for cannon. A great deal of the powder during the 1860s was shipped to the Central Pacific Railroad during its construction over the Sierra Nevada Mountains (Ibid:25). In 1876 the South Pacific Railroad, a narrow-gauge, ran between Felton and Santa Cruz. In 1879, direct service was extended from Santa Cruz to San Jose, Oakland, and the East Bay. By 1883, a line was extended through the Pajaro Valley (Ibid).

By the turn of the century, much of the natural wealth of Santa Cruz County had been exploited or was in jeopardy, including the vast stands of coastal redwood (*sequoia sempervirens*) that surrounded the community. Fortunately, through the efforts of Andrew P. Hill, a noted San Jose photographer, a tract of land north of Santa Cruz was set aside in 1904 as California's first state park. Originally known as Redwood State Park, the name of the state park was changed in the 1920s to Big Basin Redwoods State Park.

During the nineteenth and early twentieth century other small coastal communities in Santa Cruz County began to flourish. The development of a small sawmill along Aptos Creek in 1851 led to the formation of the community of Aptos. By the 1880s, thousands of board feet of lumber were being produced from the Aptos area. During the 1860s a hotel was built, followed by a school in 1871. Claus Spreckles, renowned sugar baron, built a hotel and wharf in Aptos, shortly after he purchased property in 1872 from Rafael Castro (Verardo and Verardo 1987:67-68). To the north, the community of Soquel developed in concert with Aptos, spurred by the development of tanneries and a large sugar refinery built by W.T. Garrat and Associates, known as the California Sugar Beet Company. Sugar beets were harvested in the Pajaro Valley and shipped to Soquel for processing. Along with tanneries and sugar refining, Soquel was also a

center for harvesting and manufacturing lumber. Frederick Hihn, one of the area's largest landowners, built a mill at Laurel and Soquel Creeks (Ibid:66).

Frederick Hihn, a native of Germany who came to California during the Gold Rush, obtained the land that is now Capitola Village in 1865 from the heirs of rancho grantee Martina Castro. A few years later, Hihn leased the parcel near the wharf at Soquel Landing to S. A. Hall, a former contractor who planned to settle down as a farmer. In 1874, his daughter, Lulu Hall Wolbach, suggested that he set up a tent camp along the beach for the summer. It may have been Lulu, a former Soquel teacher, who named the resort "Capitola" after the heroine in a series of popular novels. Camp Capitola welcomed its first guests on July 4, 1874 (Swift 2005).

The Hall family set up the tents along a dirt path every summer for five years, until increases in rent forced them to give up the lease. A series of other tenants continued the camp and began to make improvements. By the time the Santa Cruz-Watsonville Railroad was broad gauged in 1883, Capitola had become the destination of thousands of summer visitors who wanted to escape the sweltering heat of the state's interior. Hihn himself took over direction of the resort's progress in 1884, when he created a subdivision map and began to sell lots for summer homes. Visitors stayed at the big hotel or in cabins and tents along the beach (Swift 2005).

Following Hihn's death in 1913, Capitola was inherited by his daughter, Katherine Henderson, who sold it shortly after World War I to Henry Allen Rispin of San Francisco. Rispin's dream was to renovate and modernize Capitola so that it would be appealing to vacationers from the San Francisco Bay Area. He spent a fortune on his schemes for "Capitola-by-the-Sea," until he went bankrupt just before the start of the Great Depression in 1929. Incorporated in 1949, Capitola, which may be California's oldest continuing resort, is now guided by its city government (Swift 2005).

III. RESEARCH RESULTS

On November 8, 2007, a record search (07-660) was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) of the project area (refer to NWIC Record Search). After reviewing the State of California Office of Historic Preservation records, base maps, historic maps, and literature for Santa Cruz County, it was concluded that the proposed project area contains no recorded Native American or historic-period archaeological resources listed with the CHRIS.

There is no record of an archaeological study of the project area. Given the environmental setting, NWIC staff concluded that there was a moderate potential of identifying Native American cultural resources within the project area. State and federal inventories failed to list any historic properties within the proposed project area. Review of historical literature and maps indicated Southern Pacific Railroad sidings and buildings adjacent to the project area, as indicated on the 1914 USGS 15' Capitola Quadrangle Map. Therefore, NWIC staff concluded that there was a moderate potential of identifying historic-period archaeological resources within the project area.

On November 30, 2007, the Native American Heritage Commission (NAHC) conducted a record search of the sacred land file, which failed to indicate the presence of Native American cultural resources in the project area (refer to NAHC Record Search). Archival research was also conducted at the California State Library, Sacramento; Santa Cruz Public Library, Santa Cruz; the Internet; and within the reference library of Historic Resource Associates.

IV. SURVEY METHODS AND FIELD INVENTORY

A pedestrian survey was conducted within the project area, together with archival research.

V. REPORT OF STUDY FINDINGS

After a careful field inspection of the entire project area, no significant prehistoric or historic archaeological sites, features, or artifacts were found, nor were any significant historic buildings, structures, or objects identified within the boundaries of the project, according to 36 CFR 800, Section 800.4(d)(1) of the NHPA, and in accordance with Section 15064.5(a)(2)-(3) of CEQA guidelines, using the criteria described in Section 5024.1 of the California Public Resources Code.

VI. DISCUSSION AND INTERPRETATION

None.

VII. RECOMMENDATIONS

No further cultural study is recommended for this project. While the probability of finding subsurface archaeological features or artifacts is unlikely, if during the course of construction activities within the project area, a previously unidentified or subsurface archaeological site or feature is discovered, work should stop at that location and a qualified cultural resource professional should be contacted to examine the discovery and determine its significance.

California Health and Safety Code Section 7050.5; Public Resources Code Sections 5097.94, 5097.98 and 5097.99 require that if Native American human burials and skeletal remains are discovered inadvertently or advertently the following actions must be taken:

Stop work immediately, at that site and any nearby area reasonably suspected to have remains, and contact the County Coroner.

The Coroner has two working days to examine the remains after being notified by the person responsible for the excavation. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission.

The Native American Heritage Commission will immediately notify the person it believes to be the most likely descendant of the deceased Native American.

The most likely descendant has 24 hours to make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods.

If the descendant doesn't make recommendations within 24 hours the owner must reinter the remains in an area of the property secure from further disturbance, or:

If the owner doesn't accept the descendant's recommendations, the owner or the descendant may request mediation by the Native American Heritage Commission.

If mediation fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

VIII. PROFESSIONAL QUALIFICATIONS

Dana E. Supernowicz, principal of Historic Resource Associates, earned his M.A. degree in History at California State University, Sacramento in 1983, with an emphasis in California and Western United States history. Supernowicz has nearly 30 years of experience working in the field of cultural resources management for federal and state agencies, as well as 22 years in private consulting. He is a member of the Society for California Archaeology, Oregon-California Trails Association, and the National Trust for Historic Preservation. Supernowicz meets the Secretary of the Interior's Professional Standards in Architectural History, Archaeology, and History.

IX. REFERENCES

Secondary Sources

Alta, California Daily. Newspaper.

Bolton, H. E., ed.. *Historical Memoirs of New California*. Russell & Russell, New York. 1966.

Browning, P., ed. *The Discovery of San Francisco Bay: The Portolá Expedition*. Great West, Lafayette, California. 1992.

Carter, F. C. *Duhaut-Cilly's Account of California in the Years 1827-1828*. California Historical Society Quarterly XIV: 131-256. 1940.

Cartier, Robert. *The Scott's Valley Site: CA-SCR-177*. Santa Cruz Archaeological Society Monograph I. 1993.

Clark, D.T. *Santa Cruz County Place Names*. Santa Cruz: Santa Cruz Historical Society. 1986.

Cook, Sherburne F. *The Conflict Between the California Indians and White Civilization, I: The Indian Versus the Spanish Mission*. Ibero-Americana 21. Berkeley, CA. 1943.

Cook, Sherburne F. *The Epidemic of 1830-1833 in California and Oregon*. Berkeley: University of California Publications in American Archaeology and Ethnology 43(3):321-322. 1955.

Dietz, S.A., W. Hildebrandt, and T. Jones. *Archaeological Investigations at Elkhorn Slough: CA-MNT-229 a Middle Period Site on the Central Coast*. Papers in Northern California Anthropology, Number 3, Berkeley. 1988.

Elliott, Wallace W. *Santa Cruz County, California*. Wallace W. Elliott, San Francisco. 1879.

Environmental Science Associates. *Coast Dairies Long-Term Resource Protection and Use Plan: Draft Existing Conditions Report for the Coast Dairies Property* (Sections 1.0, 2.0 and 5.0), ESA prepared for the Trust for Public Lands. 2001.

Evans, A.S. *Alta California*. Bancroft Publishing, San Francisco. 1873.

Fitzgerald, R.T. and A. Ruby. *Archaeological Test Excavations at CA-SCR-117, the Davenport Landing Site*. Report prepared for U.S. Abalone, Inc. Davenport, CA. 1997. Copy of report on file at the NWIC, Rohnert Park, CA.

Hamman R. *California Central Coast Railways*. Pruett Publishing. Boulder Colorado. 1980.

Hoover, Mildred B. *Historic Spots in California*. Stanford University Press. Stanford, CA. Third edition. 1966.

Hylkema, M. G., *Prehistoric Native American Adaptations Along the Central California Coast of San Mateo and Santa Cruz Counties*. Master's thesis, San Jose State University, San Jose, CA. 1991.

Jones, D.A. and W. Hildebrandt. *Archaeological Investigations at Sand Hill Bluff: Portions of Prehistoric Site CA-SCR-7, Santa Cruz County*. Report prepared for Pacific Mariculture Incorporated by Far Western Anthropological Group, Inc. 1990.

Kroeber, A.L. *Handbook of the Indians of California*. Washington: Bureau of American Ethnology, Bulletin 78. 1925.

Kuchler, A.W. *Natural Vegetation of California* (Map). *In* Terrestrial Vegetation of California. M.G, Barbour and J. Major eds. John Wiley and Sons, New York. 1997.

Levy, R. "Costanoan." *In Handbook of North American Indians: Vol. 8, California*. R., Heizer, ed. Smithsonian Institution, Washington, D.C. 1977.

Milliken, R. *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press, Menlo Park, CA. 1993.

Moratto, Michael J. *California Archaeology*. Orlando, Florida: Academic Press, Inc. 1984.

Phelps. A. *Alta California: 1840-1842*. Arthur H. Clark, Glendale, CA. 1983.

Roop, W. *Adaptation on Ben Lomond Mountain: Excavation at CA-CSR-20*. Master's Thesis. San Francisco State University, San Francisco. 1976.

Shipley, William. "Native Languages of California." In *Handbook of North American Indians. Vol. 8: California*. R. F. Heizer, ed. Washington, D.C.: Smithsonian Institution. pp. 80-90. 1978.

State of California. *California Historical Landmarks*. Department of Parks and Recreation. Sacramento, CA. 1979.

State of California. *California Inventory of Historic Resources*. Department of Parks and Recreation. Sacramento, CA. 1976.

Storie, R. Earl. *Soil Survey of the Santa Cruz Area, CA*. Washington, D.C.: United States Department of Agriculture. 1935.

Swift, Carolyn. "A Brief History of Capitola." Capitola Historical Museum, Capitola, California. 2005.

Verardo, Jennie Dennis and Denzil Verardo. *Santa Cruz County: Restless Paradise*. Windsor Publications, Northridge, CA. 1987.

Watkins, R. C. *History of Monterey, Santa Cruz and San Benito Counties, California*. S.J. Clarke Publishing, Chicago. 1925.

Maps

Soil Survey of the Santa Cruz Area, CA, 1935

USGS 15' Capitola, CA Quadrangle 1914

USGS 7.5' Soquel, CA Quadrangle

SOURCE: USGS SOQUEL QUADRANGLE, CALIFORNIA (7.5 MINUTE SERIES) TOPOGRAPHIC MAP. IMAGE FROM MAPTECH MAPQUEST.

DIABLO GREEN CONSULTING

3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE:1:24,000	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE VICINITY

FIGURE 1
SITE VICINITY MAP

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

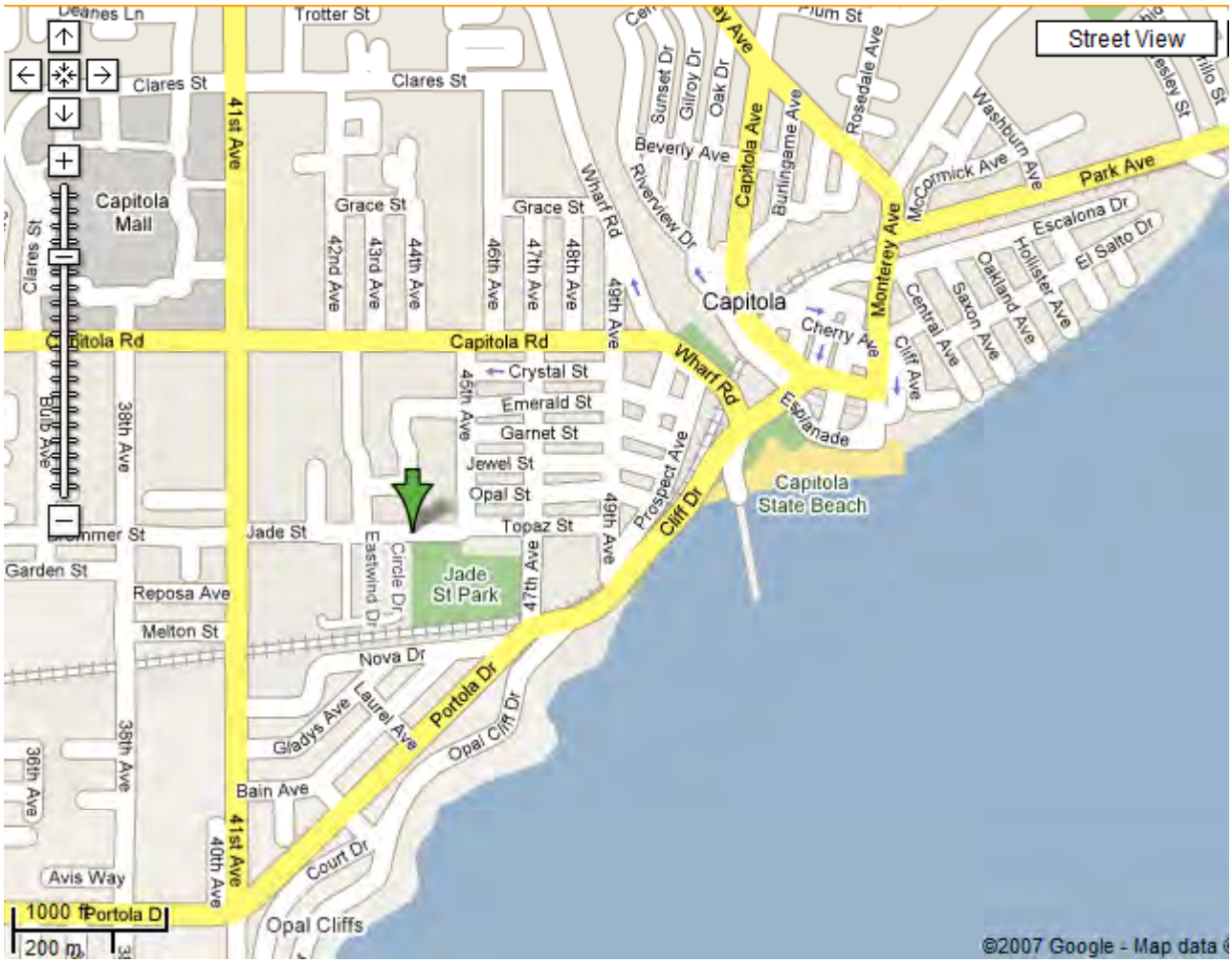


IMAGE SOURCE: GOOGLE MAPS, 2007

DIABLO GREEN CONSULTING

3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2a
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

IMAGE SOURCE: GOOGLE EARTH

DIABLO GREEN CONSULTING
3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2b
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

IMAGE SOURCE: GOOGLE MAPS, 2007

DIABLO GREEN CONSULTING
3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2c
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

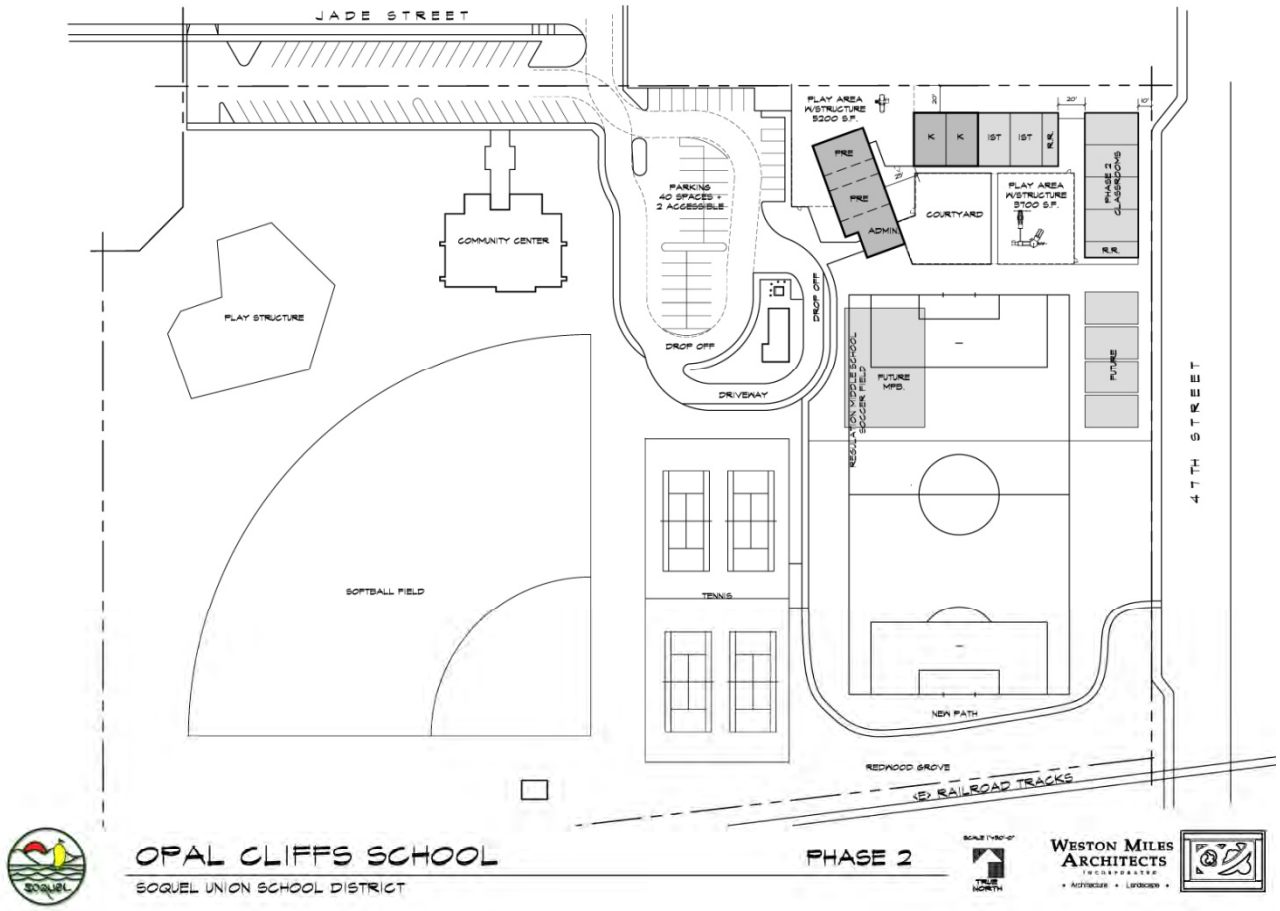


IMAGE SOURCE: SOQUEL UNION ELEMENTARY SCHOOL DISTRICT

DIABLO GREEN CONSULTING	3942 Valley Avenue, Ste J Pleasanton, CA 94566 (925) 846-9800	FIGURE 2d **SITE PLAN** OPAL CLIFFS 4400 JADE STREET CAPITOLA, CALIFORNIA
PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

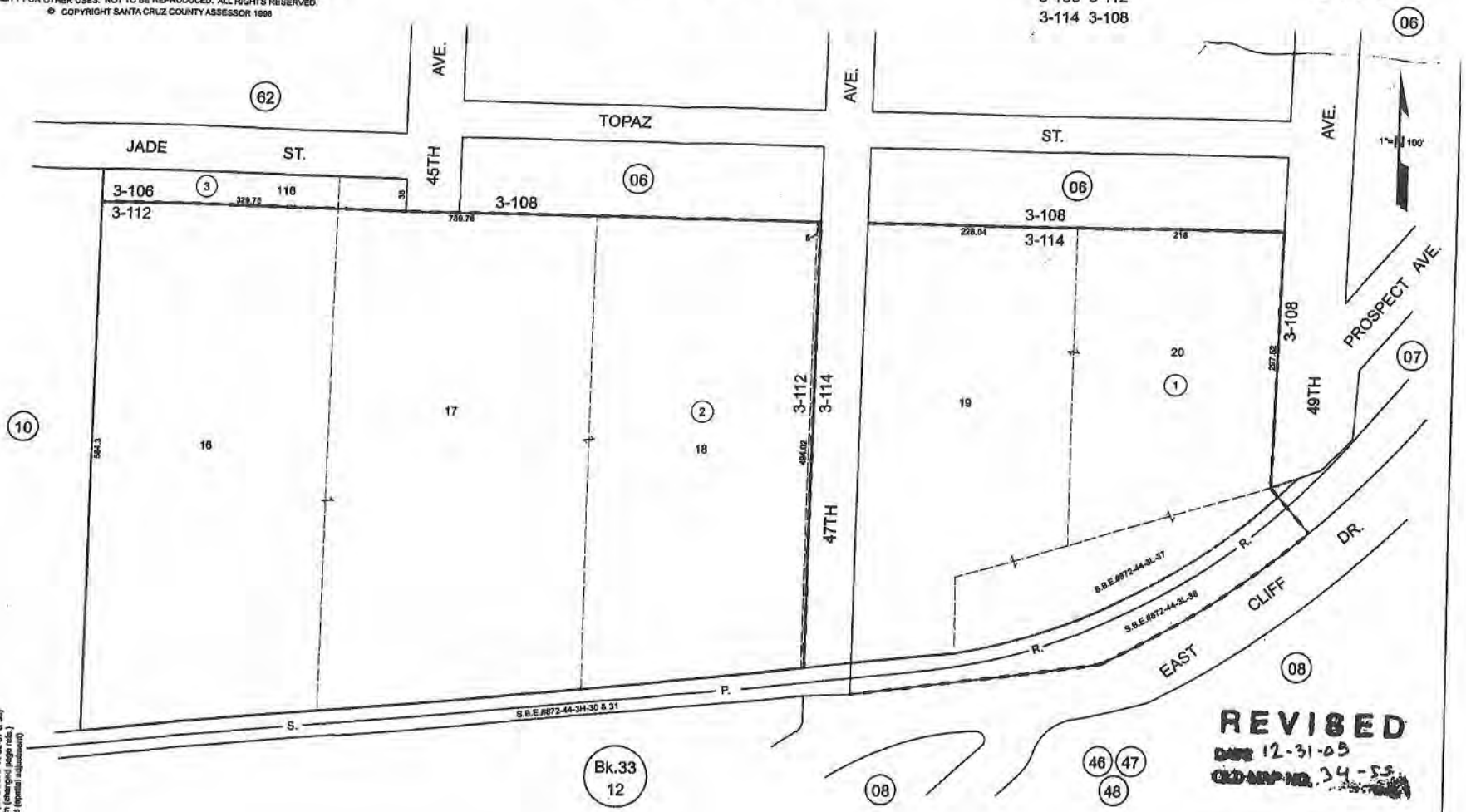
FOR TAX PURPOSES ONLY

THE ASSESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED.
© COPYRIGHT SANTA CRUZ COUNTY ASSESSOR 1996

CITY OF CAPITOLA

Tax Area Code
3-106 3-112
3-114 3-108

34-55



REVISED
DATE 12-31-05
OLD MAP NO. 34-55

Bk.33
12

Note - Assessor's Parcel & Block
Numbers Shown in Circles.

Assessor's Map No. 34-55
City of Capitola
County of Santa Cruz, Calif.

Electronically Redrawn 3/25/98 wrtp
Rev. 3/25/98 (Prc. to from pg. 55) wrtp
Rev. 4/27/99 GG (SBE #872-44-3L-37 & 38)
Rev. 4/17/00 mwm (changed page nos.)
Rev. 12/31/05 wd (parcel adjustment)

PHOTOGRAPH RECORD

OPAL CLIFFS PROJECT
4400 Jade Street, Capitola, California
November 2007

Photograph 1: View looking west across the existing soccer field at the site of the proposed school buildings.

Photograph 2: View looking south at the south end of the soccer field.

Photograph 3: View looking east towards 47th Street and the community gardens to the left.

Photograph 4: View looking west at the north end of the soccer field.

Photograph 5: View looking east along the far west end of the soccer field and the project area. Note the Southern Pacific Railroad tracks and right of way abutting this end of the project.

Photograph 6: View looking north at the mature trees bordering the west end of the project and in behind the Southern Pacific Railroad tracks and right of way.

Photograph 7: View looking east across the soccer field and the project area.

Photograph 8: View looking north along the west fence surrounding the community garden.

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1303 Maurice Avenue
Rohnert Park, California 94928-3609
Tel: 707.664.0880 • Fax: 707.664.0890
E-mail: leigh.jordan@sonoma.edu

November 8, 2007

NWIC File No.: 07-660

Holly D. Moore
Diablo Green Consulting
3942 Valley Avenue, Suite J
Pleasanton, CA 94566

Re: Record search results for the proposed Opal Cliffs School Site at 4400 Jade Street, Capitola, Santa Cruz County, California.

Dear Ms. Moore:

Per your request received by our office on October 30, 2007, a records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) data maps, historic-period maps, and literature for Santa Cruz County on file at this office. Review of this information indicates that the proposed project area contains no recorded Native American or historic-period archaeological resources. This office has no record of an archaeological study of the project area. State and federal inventories list no historic properties within the proposed project area.

At the time of Euroamerican contact the Native Americans that lived in the area were speakers of the *Awaswas* language, part of the Costanoan language family (Levy 1978:485). There is one Native American village area in the vicinity of the proposed project area referenced in the ethnographic literature [uypi (San Daniel) Levy 1978: 485].

Based on an evaluation of the environmental setting and features associated with known sites, Native American cultural resources in this part of Monterey County have been found adjacent to intermittent and perennial fresh-water courses, and near or adjacent to the bayshore. The Opal Cliffs School Site project area is located near the bayshore on a broad flat alluvial terrace within an alluvial fan between Rodeo and Soquel Creeks. Given the similarity of these environmental factors, there is a moderate likelihood that unrecorded Native American cultural resources exist in the proposed Opal Cliffs School Site project area.

Review of historical literature and maps indicated railroad sidings and two associated buildings within the project area that were associated with the Southern Pacific Railroad adjacent to the project area (1914 USGS Capitola 15' quadrangle map). With this in mind there is moderate possibility of identifying historic-period archaeological resources. Please note that the Southern Pacific Railroad and its associated buildings and structures have been evaluated and recorded in several other areas.

RECOMMENDATIONS:

1) There is a moderate possibility of identifying Native American sites and a moderate possibility of identifying historic-period archaeological resources in the project area. We recommend a qualified archaeologist conduct further archival and field study to identify cultural resources. Field study may include, but is not limited to, pedestrian survey, auguring, monitoring construction activities as well as other common methods used to identify the presence of archaeological resources.

2) Review for possible historic structures has included only those sources listed in the attached bibliography and should not be considered comprehensive. The Office of Historic Preservation has determined that buildings, structures, and objects 45 years or older may be of historical value. ***If the area of potential effect contains such properties, such as the railroad sidings and associated buildings related to the Southern Pacific Railroad adjacent to the project area, it is recommended that they be assessed by an architectural historian before commencement of project activities.***

3) If cultural resources are encountered **during the project,** avoid altering the materials and their context until a cultural resource consultant has evaluated the situation. Project personnel should not collect cultural resources. Prehistoric resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

4) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: http://ohp.parks.ca.gov/default.asp?page_id=1069.

Thank you for using our services. Please contact this office if you have any questions, (707) 664-0880.

Sincerely,

Jillian E. Guldenbrein

Jillian E. Guldenbrein
Researcher

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resource File System, the following literature was reviewed:

Clark, Donald Thomas
1986 *Santa Cruz County Place Names.* Santa Cruz Historical Society, Santa Cruz.

Fickewirth, Alvin A.
1992 *California Railroads.* Golden West Books, San Marino, CA.

General Land Office
1858 Survey Plat for Rancho Arroyo del Rodeo, Township 11 South/Range 1 West.

Hamman, Rick
1980 *California Central Coast Railways.* Pruett Publishing Company, Boulder, Colorado.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Rensch, William N. Abeloe, revised by Douglas E. Kyle
1990 *Historic Spots in California.* Fourth Edition. Stanford University Press, Stanford.

Kroeber, A.L.
1925 *Handbook of the Indians of California.* Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C. (Reprint by Dover Publications, Inc., New York, 1976)

Levy, Richard
1978 Costanoan. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

State of California Department of Parks and Recreation
1976 *California Inventory of Historic Resources.* State of California Department of Parks and Recreation, Sacramento.

State of California Office of Historic Preservation **
2007 *Historic Properties Directory.* Listing by City (through September 2007). State of California Office of Historic Preservation, Sacramento.

Woodbridge, Sally B.
1988 *California Architecture: Historic American Buildings Survey.* Chronicle Books, San Francisco.

**Note that the Office of Historic Preservation's *Historic Properties Directory* Includes National Register, State Registered Landmarks, and Historic Points of Interest.

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

November 30, 2007

Holly D. Moore
Senior Project Manager
DIABLO GREEN CONSULTING
3942 Valley Avenue, Suite J
Pleasanton, CA 94566

Sent by Fax: 925-397-3051
Number of Pages: 3

Re: Proposed Opal Cliffs School Site, Capitola, Santa Cruz County.

Dear Ms. Moore:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Santa Cruz County
November 29, 2007

Linda G. Yamane
1585 Mira Mar Ave.
Seaside , CA 93955-3326
(831) 394-5915
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Michelle Zimmer, Cultural Resource Coordinator
P O Box 3892
Clear Lake , CA 95422
408-375-4281
Ohlone/Costanoan

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakki@bigvalley.net
(209) 892-2436
(209) 892-2435 - Fax
Ohlone/Costanoan

Amah/MutsunTribal Band
Irene Zwierlein, Chairperson
789 Canada Road
Woodside , CA 94062
amah_mutsun@yahoo.com
(650) 851-7747 - Home
(650) 851-7489 - Fax
Ohlone/Costanoan

Amah MutsunTribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40
Sacramento , CA 95821
vlopez@amahmutsun.org
(916) 481-5785
Ohlone/Costanoan

Coastanoan Ohlone Rumsen-Mutsen Tribe
Patrick Orozco
644 Peartree Drive
Watsonville , CA 95075
(831) 728-8471
(831) 728-8471
Ohlone/Costanoan

Amah MutsunTribal Band
Edward Ketchum
35867 Yosemite Ave
Davis , CA 95616
aerieways@aol.com
Ohlone/Costanoan
Northern Valley Yokuts

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister , CA 95024
ams@garlic.com
831-637-4238
Ohlone/Costanoan

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Opal Cliffs school site, Capitola, Santa CRuz County.

Native American Contacts
Santa Cruz County
November 29, 2007

Trina Marine Ruano Family
Ramona Garibay, Representative
16010 Halmar Lane
Lathrop , CA 95330
510-300-5971 - cell

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Opal Cliffs school site, Capitola, Santa CRuz County.

cc: Sherree

RAIL TECHNOLOGY, INC.

Received
DEC 13 2006
L S Monterey

December 7, 2006

Devon Lincoln
Lozano Smith
4 Lower Ragsdale Drive, #200
Monterey, CA 93940-5758

Re: Railroad Risk Analysis for Soquel Union Elementary School District's proposed school site in Capitola, California

Dear Ms. Lincoln,

Rail Technology, Inc. (RTI) has conducted a site investigation and railroad risk analysis of a proposed school site located in Capitola, California. The proposed school site property is owned by the Soquel Union Elementary School District and is located along 47th Avenue and Jade Street. The property is approximately 9.5 acres in size and is adjacent to an operating railroad track. Therefore, under State regulations, when a proposed school site is located within 1,500 feet of a railroad track the School District is required to conduct a Railroad Risk Analysis before proceeding with detailed planning and construction. The following report and the opinions reached are based upon RTI's site investigation, research and evaluation of the railroad operating practices in the area of the proposed school site.

Project Description
The Soquel Union Elementary School District desires to use its property along 47th Avenue and Jade Street to construct a pre-school facility and expand the complex in the future to include an elementary school. The proposed school site property is located within a residential community and is adjacent to an active railroad branch line.

When complete, it is estimated that the pre-school facility will serve approximately 100 students ranging from 3 to 6 years in age. When the elementary school features are added it is anticipated that the complex will serve approximately 400 pre-school to 5th grade students. Due to the young ages of the students, in my opinion, the vast majority if not all of the pre-school and elementary school students will be transported to and from the school site by motor vehicle.

Railroad Ownership and Operations
The railroad line, located adjacent and parallel to the southern property line of the proposed school site is owned and operated by the Union Pacific Railroad (UPRR). It is a 32 mile long branch line that connects to UPRR's Coast Subdivision in Watsonville, CA (MP 0.00) and ends in Davenport, California (MP 32). It is commonly referred to as the "Santa Cruz" branch. This is a single track railroad operation with additional tracks for switching operations in Watsonville, Santa Cruz and Davenport.

UPRR operates freight service only over this line approximately three times per week, typically, during daylight hours on Mondays, Wednesdays and Fridays. The railroad's right of way is approximately 30 to 40 feet wide in the vicinity of the proposed school site. The branch line is managed and its operations controlled from UP's office in Watsonville.

(916) 362-9984 ▪ 9191 Folsom Blvd., # 4 ▪ Sacramento, CA 95826-3802 ▪ **FAX (916) 362-4205**

The proposed school site is located at the railroad's branchline milepost 16.38. UPRR operates all of its trains in compliance with the General Code of Operating Rules and per the safe practice operating requirements of the Federal Railroad Administration (FRA) and the California Public Utilities Commission (CPUC). The maximum operating speed on the line is 20 mph.

This branch line serves the RMC Pacific Materials cement plant located in Davenport, CA and it interchanges railcars with the Santa Cruz and Big Trees Railroad in Santa Cruz. The materials commonly carried on this line consist of coal, cement (RMC) and lumber products that are interchanged with the Santa Cruz and Big Trees railroad. No other industries are served by the line at this time.

Rail cars containing hazardous materials are not routinely carried on this line. However, if such a commodity is carried it is important to note that all hazardous materials shipped in railcars are strictly regulated and enforced under the Hazardous Materials Transportation Act, Title 49, and Part 174 of the Code of Federal Regulations. Further, it is important to understand that railroad cars that transport Hazardous Materials are designed and constructed with very high crash worthiness standards. In addition, all aspects of the railroads activities, as it relates to operations, equipment, track, and signals are strictly regulated and inspected frequently by the FRA and CPUC.

Railroad Track Description

As mentioned above, this is a single track rail line located generally in the middle of the railroad's right of way. The horizontal track alignment, next to the school property, is straight and the vertical track gradient is basically flat. The track itself is constructed with heavy weight jointed rails that are fastened to wooden ties with tie plates and spikes. The track is embedded in crushed rock.

The track appears to be well maintained meeting the FRA and CPUC minimum track safety requirements. Most of the right of way is fenced and there are no railroad structures in the local area. There are many "at-grade" public road crossings along the route that are equipped with train and track activated crossing warning devices. There is an at grade crossing with this equipment in place at 47th Ave. Visibility from adjacent public roadways and at the 47th Ave. crossing is very good.

There are no fiber optic or petroleum pipeline facilities located within the railroad's right of way. There are no former rail served industries or commercial and/or retail businesses near the proposed school site.

City of Capitola and Local Services

Capitola is a costal city in Santa Cruz County with a population of about 11,000. The City is administered by a Council–Manager form of government. City services include

Police and Fire Departments located in close proximity (0.6 miles) of the proposed school site. The City's and County's emergency plans include protocols to handle incidents involving railroad operations.

Local Community
The neighborhood surrounding the proposed school site is mixed residential. That is, a well established and groomed mobile home village is located on the east side of 47th Ave. between the track and Topaz Street while individual single family dwellings surround the area in all other directions.

New Brighton Middle School, which has been in operation for many decades is located about one mile north of the proposed site. This school is within several hundred feet of the same railroad line. No records of incidents or accidents relating to train operations and the school were found.

Local Planned Development
As of the date of our site review, there were no commercial or industrial construction activities underway in the general area of the railroad or proposed school site. According to UPRR sources, there are no existing plans to expand railroad freight operations on this line.

Future Passenger Rail Operations
The Santa Cruz County Regional Transportation Commission (RTC) has been working on plans to purchase this branch line from UPRR. In December 2004 the RTC signed a Letter of Intent with UPRR to purchase the line contingent upon funding commitments and other terms. The RTC desires to use a portion of the line (approx. 6 miles) from Seascape to Jade Street Park/Cliff Drive to provide a recreational rail service between Capitola and Seascape. It is envisioned that this service would be provided by an unsubsidized private operator.

The equipment used for this service would likely be a self propelled rail passenger car. These cars are often referred to as DMU's (Diesel Motorized Units) or RDC's (Rail Diesel Cars). This type of equipment was designed to operate on standard gauge railroad tracks and they are compatible with joint use (freight and passenger) operations on the line.

Two operating plans are being evaluated:

1. The "Original Project Plan" includes operating hourly trips along the route between the hours of 11:00 a.m. and 8:00 p.m. or nine round trips per day with no restrictions on the days of service. This operation would run for a maximum of 120 days during peak tourist months.

2. The "Business Plan Project" is described as operating service between the hours of 11:00 a.m. and 2:00 p.m. and again between 4:00 p.m. and 7:00 p.m. This service would be offered on Fridays through Mondays during the tourist months.

This project is presently undergoing environmental review, is subject to funding resolutions, Federal and State operating approvals and other financial and business risk considerations. Therefore, it will likely to be many years into the future before it ever becomes a reality. If it does become a reality, it's my opinion that the passenger service will pose little to no risk to the school site.

Railroad Risk Analysis

- The proposed school site is adjacent to a railroad track known as the UPRR Santa Cruz branch.
- The line is used by UPRR approximately three times per week.
- The track is constructed of heavy duty materials consistent with modern railroad freight operations. The track and supporting features appear to be well maintained.
- An "at-grade" railroad crossing is located on 47th Avenue. This crossing is equipped with active warning devices consisting of crossing gate arms, flashing lights and bells.
- The Union Pacific Railroad, the Federal Railroad Administration and the California Public Utilities Commission routinely inspect the track and signaling equipment to ensure it meets or exceeds the established safety standards.
- The prevailing winds in the area are coastal, light to moderate in intensity, and generally travel northeasterly over the area. The climate is very temperate.
- Train accidents are defined as those incidents meeting the threshold reporting requirements of the FRA in which the incidents cause injury, death or reportable damage of $6,600 or more.
- Most railroad accidents occur at public road crossings where pedestrians and vehicles interface with trains.
- Railroad derailments generally occur as a result of track or equipment failures.

- Hazardous materials are not commonly transported on this line however, it is important to note that all hazardous materials transported on railroads are strictly regulated and enforced under the Hazardous Materials Transportation Act, Title 49, and Part 174 of the Code of Federal Regulations.

- In the State of California, according to FRA data, approximately 30 train accidents per year involve trains carrying hazardous materials. Less than 10% of these accidents involve releases of hazardous materials. In the past ten years hazardous materials spills from railcars averaged one (1) incident per ten million train miles.

- The City of Capitola and Santa Cruz County Law Enforcement and Fire Departments have plans in place and are well equipped to handle rail transportation and hazardous materials incidents.

- Fire, law enforcement and emergency services are in close proximity to the proposed school site. Nothing about the location inhibits nor restricts emergency response personnel from accessing the school site or adjacent railroad if an incident were to occur.

Conclusions
It's my opinion that a derailment, due to normal train operations, is unlikely to occur in this area because:

1. Train speeds are limited to a maximum of 20 MPH
2. The track, right of way, structures and at-grade warning systems are well maintained
3. Visibility is very good for train crews and pedestrians alike
4. The rail equipment is maintained per Federal safety requirements

In the event that a train derailment were to occur on this track, the most likely scenario is, that the cars would remain upright and within the railroad right of way because of the slow train speeds and straight track alignment. It is my opinion that the highest risk of an incident involving railroad operations is either trespassers on the railroad's right of way or a motorist driving around a crossing gate arm.

In summary, based upon my field investigations, measurements taken, research conducted and my understanding of the present and potential future train operations on this branch line, it is my conclusion that railroad operations pose minimal risk to a pre-school and/or elementary school facility being constructed at this site.

Recommendations

1. Construct a security fence or sound wall along the east side of the property to physically separate the railroad right of way from the school property.

2. Formally notify the UPRR management and/or other rail operators in writing, at least one month prior to initiating or expanding school operations so that they can advise their train operating personnel to be cognizant of the new school.

3. Provide a continuous form of safety training for all school staff, students and parents on the hazards of trespassing or being in close proximity of an operating railroad.

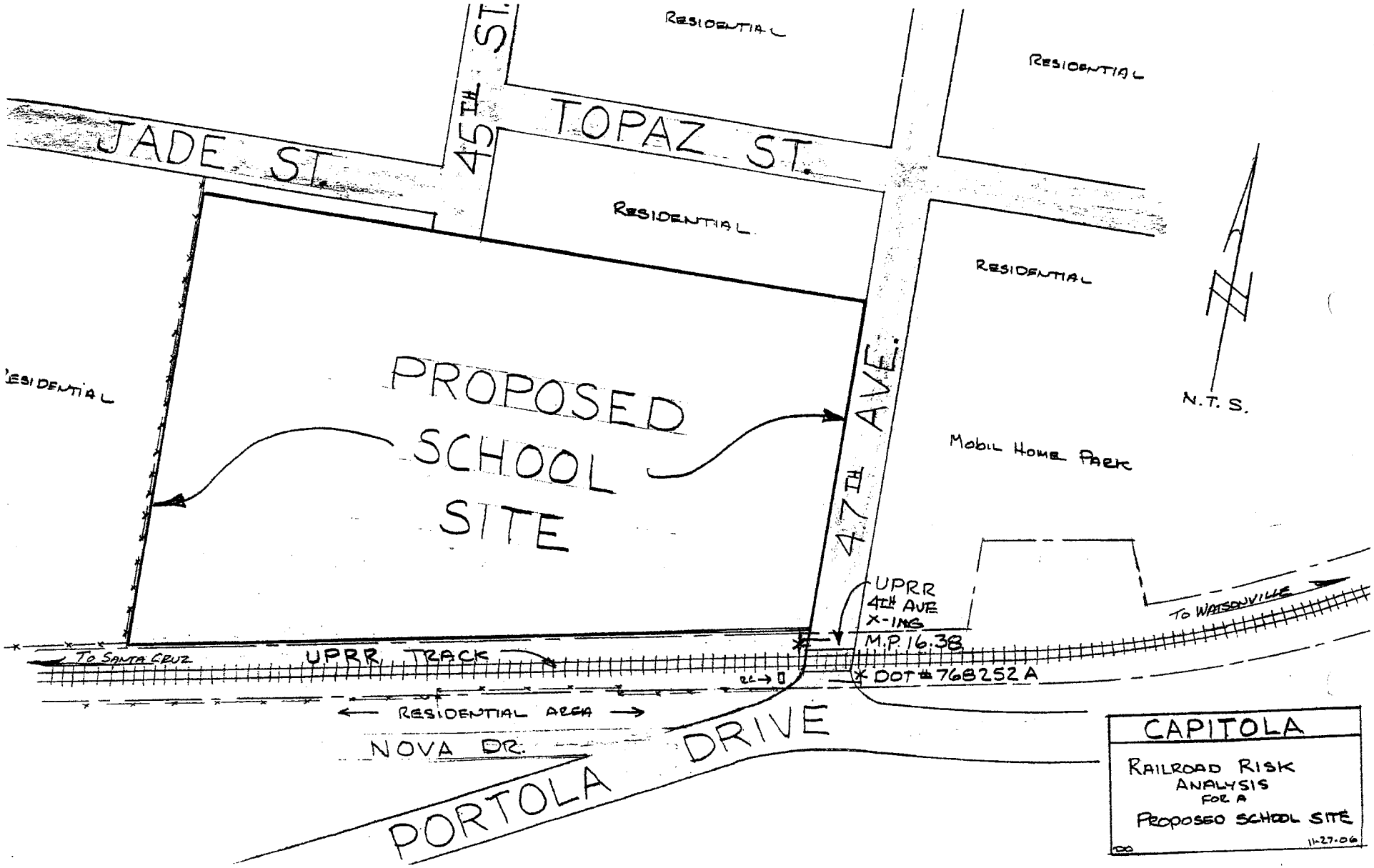
The following items have been enclosed for your use and information

*Track - Site Plan of Proposed School Site
*Pictures of Proposed School Site and Surrounding Area
*General Code of Operating Rules (UPRR is signatory)
*CPUC latest Annual Report of Railroad Accidents Occurring in California
*FRA Annual Railroad Accident Statistics
*Map of the UPRR Santa Cruz Branch
*Map of SCCRTC's "Proposed Recreational Rail Service" Area

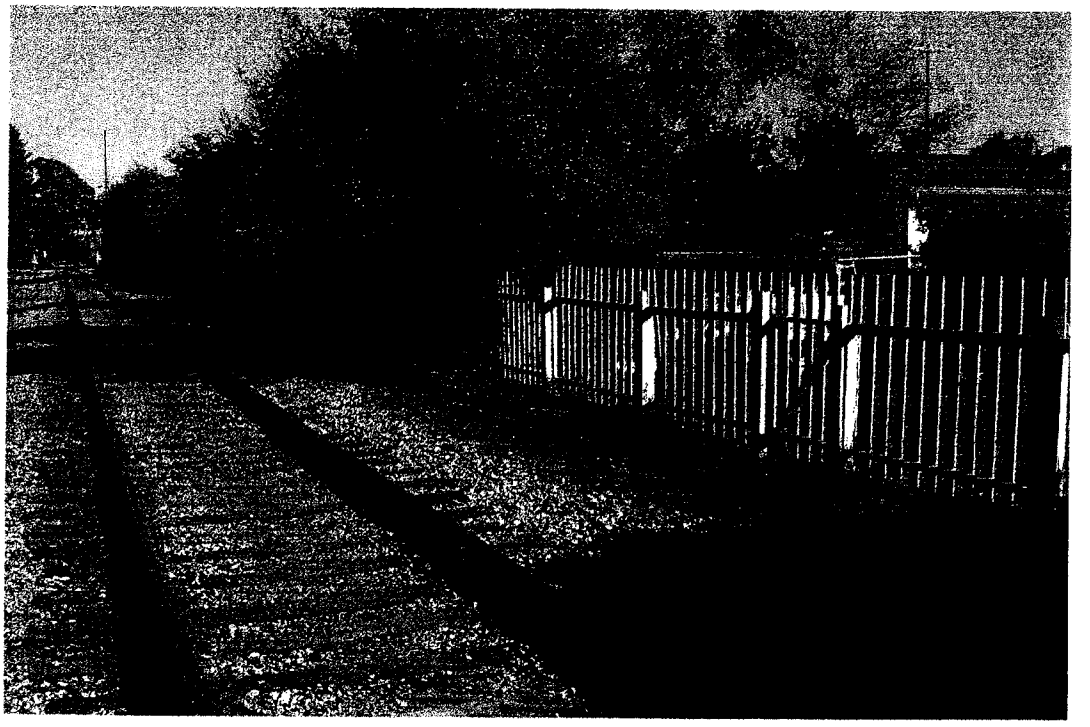
If you have any questions or require further information please do not hesitate to contact me at your convenience.

Sincerely,

Don D. Dali
President

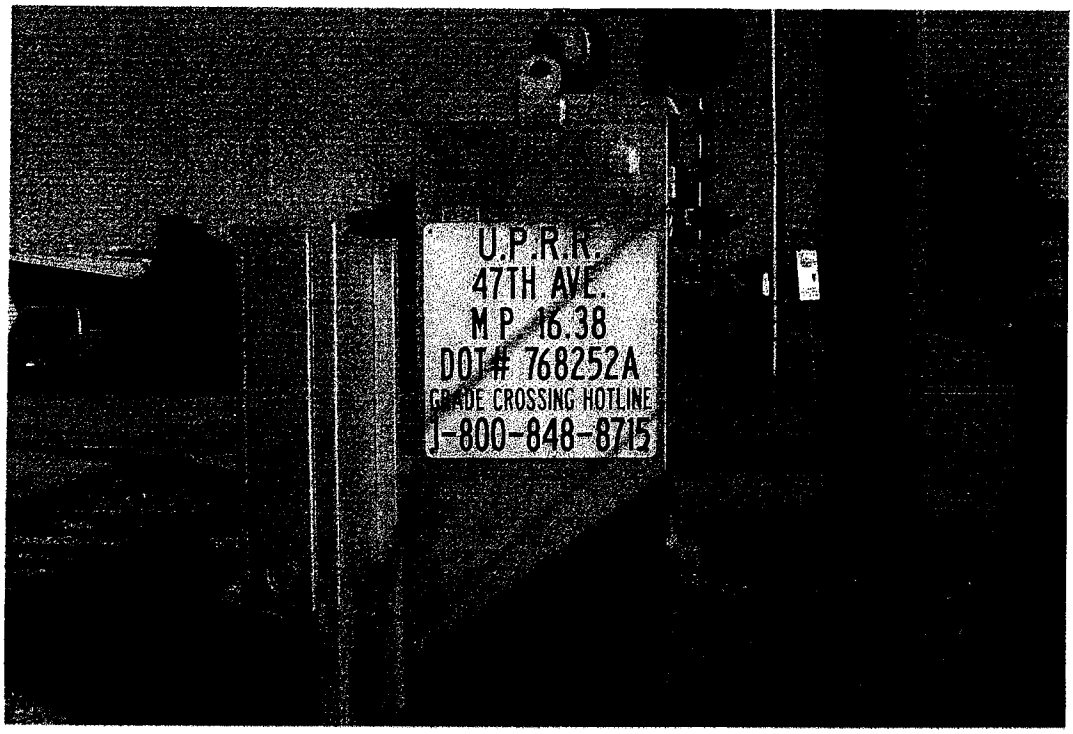

JADE ST.
45TH ST.
TOPAZ ST.
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
PROPOSED SCHOOL SITE
47TH AVE.
Mobil Home Park
N.T.S.
UPRR 47TH AVE X-ING
M.P. 16.38
DOT # 768252 A
TO WATSONVILLE
TO SANTA CRUZ
UPRR TRACK
RESIDENTIAL AREA
NOVA DR.
PORTOLA DRIVE
CAPITOLA
RAILROAD RISK ANALYSIS FOR A PROPOSED SCHOOL SITE
11-27-06

Looking Towards 47th Ave – School Site Parcel on the Left

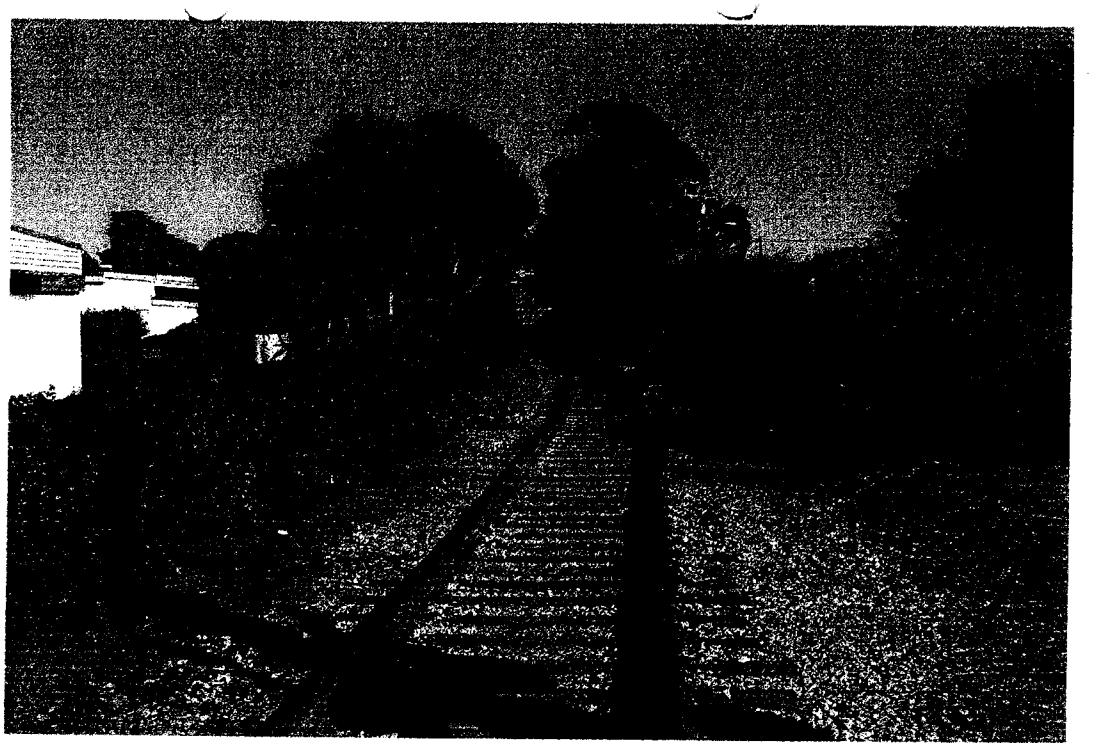


Residential Fence Along RR Property

47th Avenue RR Crossing – Looking East

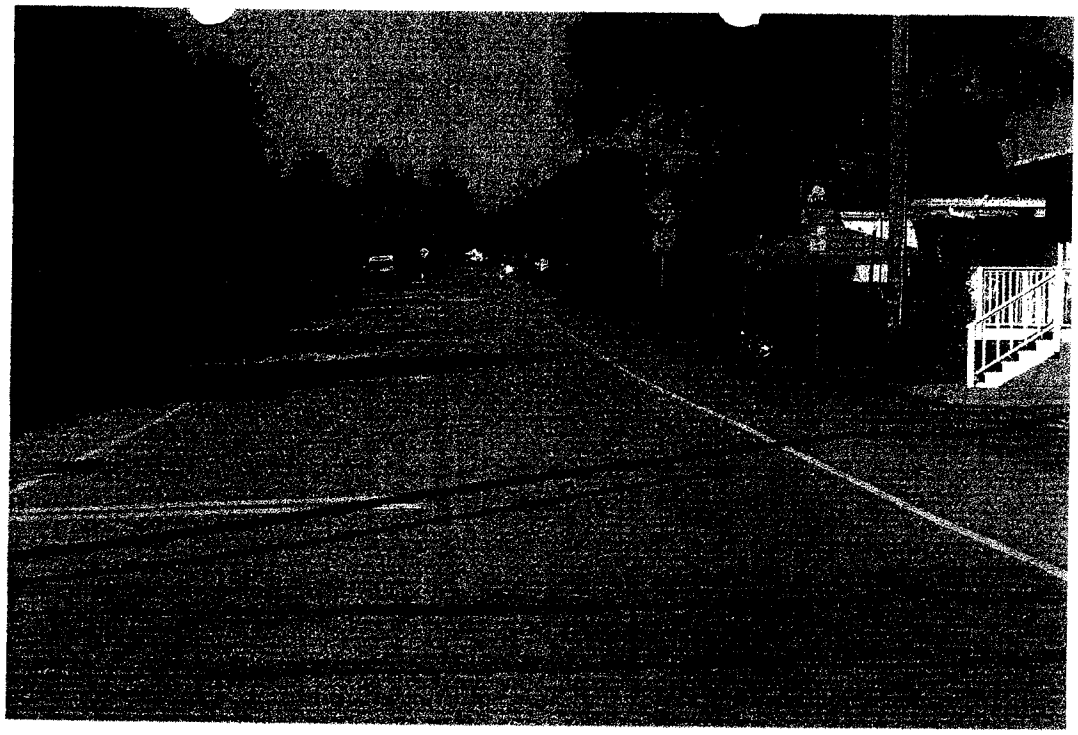


47th Avenue – RR Crossing Controls Case

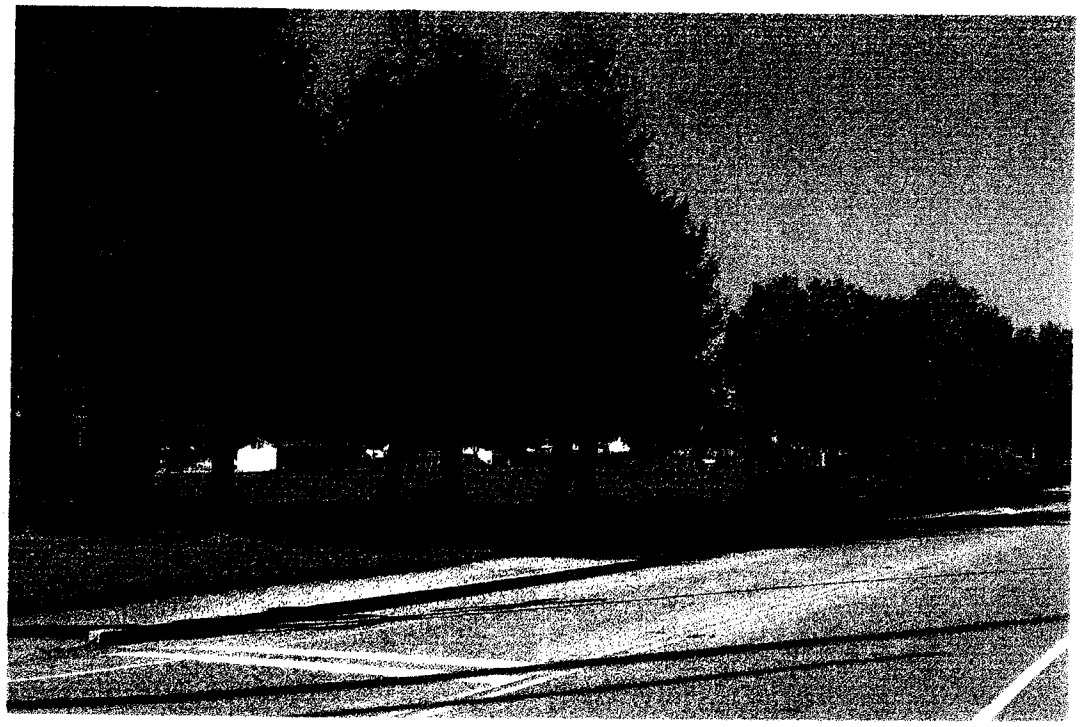


RR Right of Way – Looking East from 47th Avenue

Looking West from 47th Avenue



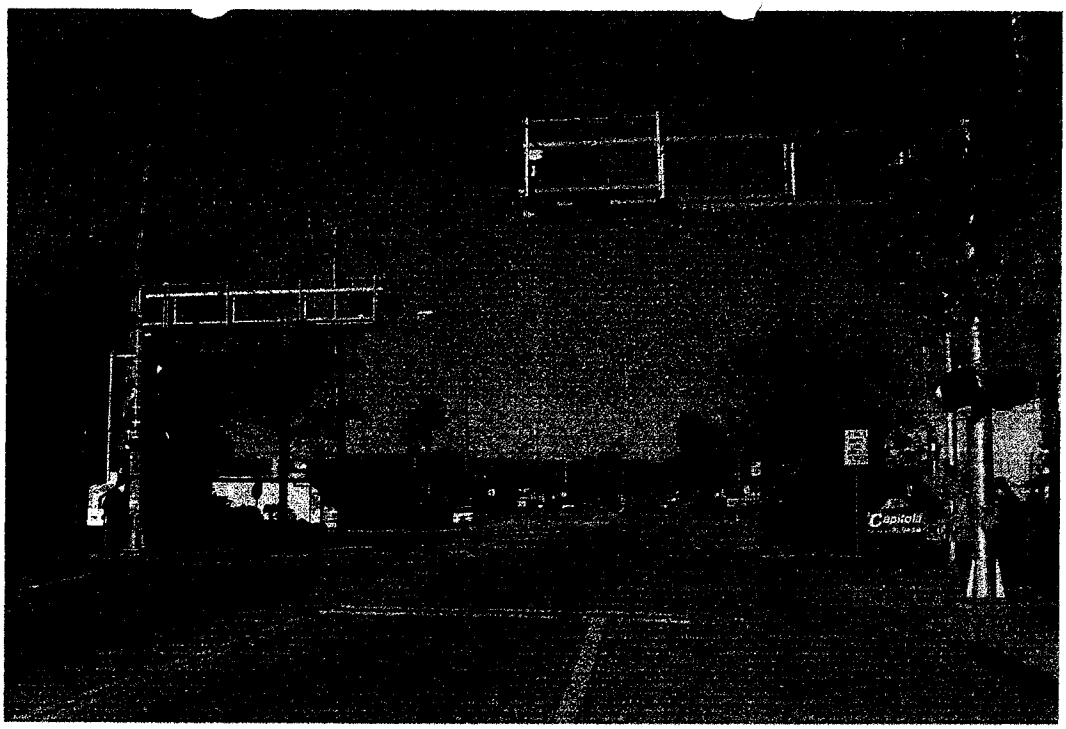
Looking North from 47th Avenue RR Crossing



Proposed School Site from 47th Avenue Crossing

Looking West at 47th Avenue – School Site on Right

Looking at RR Track from Proposed School Site Parcel



41st Avenue 1st Crossing – West of 47th Avenue

Monterey Road 1st Crossing East of 47th Avenue

GCOR 2000

General Code of Operating Rules

Fourth Edition

Effective April 2, 2000

These rules herein govern the operation of the railroads listed and must be complied with by all employees regardless of gender whose duties are in any way affected thereby.
They supersede all previous rules and instructions inconsistent therewith.

© 2000 General Code of Operating Rules Committee, All rights reserved.

Adopted by:

AT&L Railroad Company
Amtrak Western Division Peninsula Commute Service
Amtrak—Chicago Terminal
Amtrak—NOUPT
Acadiana Railway Company
Alabama & Gulf Railway
Alaska Railroad Corporation
Altamont Commuter Express Rail Authority
Apache Railway Company
Arizona and California Railway Company
Arizona Central Railroad
Arizona Eastern Railway Company
Arkansas Midland Railroad Company Inc.
Arkansas & Missouri Railroad Company
Ashtabula, Carson & Jefferson Railroad
Belt Railway Company of Chicago
BHP Nevada Railway Company
Burlington Northern Santa Fe Railway
California Western Railroad
Camas Prairie RailNet, Inc.
Canadian Pacific Railway
Cascade and Columbia River Railroad
Cedar Rapids & Iowa City Railway Company
Central California Traction Company
Central Kansas Railway
Central Montana Rail
Central Oregon & Pacific Railroad, Inc.
Chesapeake & Albemarle Railroad Company, Inc.
Council Bluffs Railway
Chicago Rail Link
Columbia Basin Railroad Co.
Columbia and Cowlitz Railway
Columbia Terminal
Dakota, Minnesota & Eastern Railroad
Dakota , Missouri Valley & Western Railroad, Inc.
Dakota Rail, Inc.
Dallas, Garland & Northeastern Railroad, Inc.
Daranelle & Russellville Railroad
DeQueen & Eastern Railroad Company
Duluth, Missabe & Iron Range Railway Company
Eastern Alabama Railway
Eastern Idaho Railroad
Escanaba & Lake Superior Railroad
Farmrail Corporation
Fort Worth & Western Railroad
Fox Valley & Western
Gateway Western Railway
Georgia Southwestern Railroad, Inc.
Georgia Woodlands Railroad
Grain Belt Corp
Grand Canyon Railway
Grand Rapids Eastern Railroad
Great Western Railway of Colorado
Great Western Railway of Iowa
Hutchinson and Northern Railway Company
Huron and Eastern Railway Company, Inc.
I&M Rail Link, LLC
Idaho Northern & Pacific Railroad Company
Illinois & Midland Railroad, Inc.
Illinois Railnet, Inc.
Indiana Rail Road Company
Indiana Southern Railroad, Inc.
Iowa Interstate Railroad Ltd.
Iowa Northern Railway Company
Jaxport Terminal Railway
Kansas City Southern Railway
Kansas City Terminal Railway Company
Lahaina Kaanapali & Pacific Railroad
Lewis and Clark Railway Company
Little Rock and Western Railway, LP
Louisiana and Delta Railroad Company
Manufacturers Junction Railway
McCloud Railway Company
Meridian and Bigbee Railroad
Mid-Michigan Railroad, Inc.
Minnesota, Dakota & Western Railway Company
Minnesota Northern Railroad, Inc.
Minnesota Commercial Railway Company
Minnesota Valley Transportation Company
Mississippi & Tennessee RailNet, Inc.
Missouri & Northern Arkansas Railroad Company, Inc.
Montana Rail Link
Montana Western Railway Company
Mount Vernon Terminal Railway, Inc.
Napa Valley Railroad Company
Nebkota Railway, Inc.
Nebraska, Kansas & Colorado RailNet
Nebraska Northeastern Railway Company
New England Central Railroad, Inc.
Newburgh & South Shore Railroad Company
New Orleans Lower Coast Railroad
New Orleans Public Belt Railroad
North Carolina & Virginia Railroad Company, Inc.

Northeast Illinois Regional Commuter Railroad Corp.
Northern Ohio & Western Railway
Northern Plains Railroad
Otter Tail Valley Railroad Company, Inc.
Osceola and St. Croix Valley Railroad Company
Pacific Harbor Line
Paloouse River and Coulee City Railroad
Pecos Valley Southern Railway Company
Pend Oreille Valley Railroad
Pittsburgh Industrial Railroad
Point Comfort & Northern Railway Company
Port Bienville Railroad
Port of Tillamook Bay Railroad
Progressive Rail Inc.
Puget Sound & Pacific Railroad
Rarus Railway, Inc.
Red River Valley & Western Railroad Co.
Rio Valley Switching Company
Saginaw Valley Railroad Company
Sand Springs Railway Company
San Diego & Imperial Valley Railroad Company, Inc.
San Diego Northern Railway
San Joaquin Valley Railroad Co., Inc.
San Pedro and Southwestern Railway Compnay
Santa Cruz, Big Trees & Pacific Railway Company
Santa Fe Southern Railway, Inc.
Sault Ste. Marie Bridge Company
SEMO Port Railroad
Sierra Railroad Company
South Carolina Central Railroad Company, Inc.
South Central Tennessee Railroad
South East Kansas Railroad
South Plains Lamesa Railroad Ltd.
Southern Switching Company
Southwestern Railroad Company, Inc.
Southern California Regional Rail Authority
St. Croix Valley Railroad Company
St. Maries River Railroad Company
Tacoma Municipal Belt Line Railway
Texas, Gonzales & Northern Railway Company
Texas - New Mexico Division
Texas North Western Railway Company
Texas Rock Crusher Railway Co.
Toledo, Peoria & Western Railway
Transportación Ferroviaria Mexicana
Trinity Railway Express
Trona Railway Company
Tulsa-Sapulpa Union Railway Company
Twin Cities & Western Railroad Company
Union Pacific Railroad
Utah Central Railway
Utah Railway Company
Ventura County Railway Company
Virginia Southern Division
West Texas and Lubbock Railroad
Wichita, Tillman & Jackson Railway
Willamette & Pacific Railroad, Inc.
Willamette Valley Railroad
Willamina and Grand Ronde Railway
Wisconsin Central Ltd.
Wisconsin & Southern Railroad Company
Wyoming/Colorado Railroad Company
Yreka Western Railroad

CALIFORNIA PUBLIC UTILITIES COMMISSION
Rail Safety and Carriers Division

Annual Report of Railroad Accidents Occurring in California

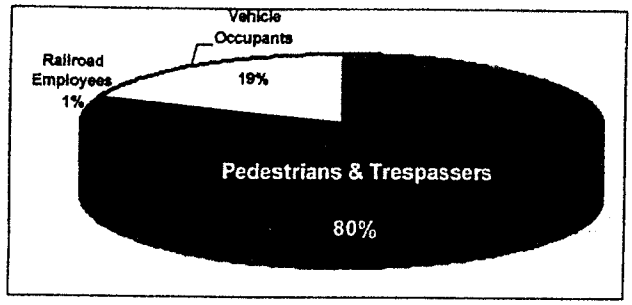
Calendar Year 1999

Executive Summary

Introduction

The purpose of the Annual Report of Railroad Accidents Occurring in California (Report) is to provide information regarding railroad and rail transit accidents/incidents involving passengers, motorists, pedestrians, trespassers, and employees. This report provides a concise record of railroad and rail transit accidents in California for 1999, and compares that record with those of the last 10 years. The Report reflects the on-going efforts to reduce the number of railroad and rail transit accidents in California over the past 10 years.

In 1999, there were a total of 753 accidents involving railroads and rail transit agencies. These rail-related accidents resulted in 134 fatalities; including 107 pedestrians, trespassers, and bicyclists, 26 occupants of vehicles, and one railroad employee. The majority of the 86 trespasser fatalities were the result of persons illegally trespassing on railroad/rail transit rights-of-way. These trespasser fatalities occurred at locations other than those authorized for public access (i.e. public highway- or pedestrian-rail grade crossings). Although some of the trespassing deaths were suicides, the majority of these fatalities, which included several children, were the direct result of persons illegally walking or playing on or along the tracks. Most of the 753 accidents and 134 deaths would not have occurred if pedestrians had not trespassed on railroad property and motorists had observed posted signs and warning devices.



1999 Rail Related Accident Fatalities

Summary of All Rail Accidents

TYPE OF ACCIDENT	TOTAL	KILLED	INJURED
Railroad	154	1	267
Railroad/LRV - Motorvehicle	306	26	162
Railroad/LRV - Pedestrian	186	107	80
Rail Transit	107	0	94
Total	753	134	603

Part I - Summary of Reportable Accidents/Incidents Occurring on Common Carrier Railroads

Part I of the Report identifies accidents and casualties on railroad property, and any accident or incident connected with a railroad operation reported to the Federal Railroad Administration (FRA). In 1999, California freight railroads operated 31.5 million train miles, an increase of 7.5% over 1998. The number of freight railroad

Executive Summary

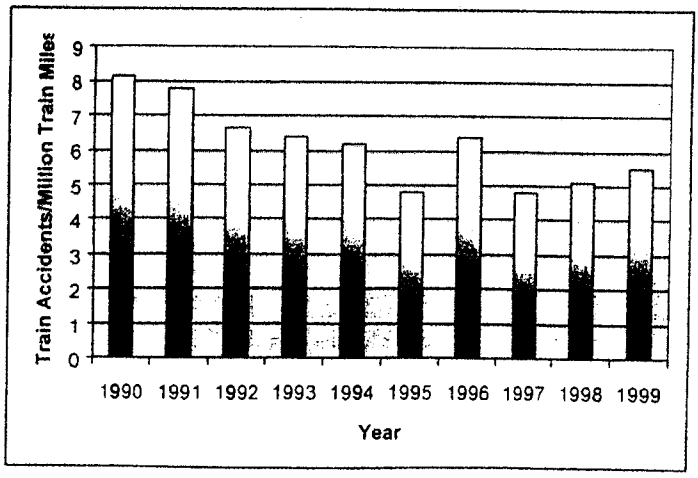
accidents increased from 128 accidents in 1998 to 149 accidents in 1999 (a 16% increase). During 1999, the total number of train accidents, freight and passenger trains combined, increased from 150 accidents in 1998 to 173 accidents in 1999. One train employee was killed on the job, and 267 were injured in 1999. This compares to one employee killed and 265 injured in 1998. The train accidents for 1999 resulted in a loss of 19.2 million dollars, an increase of about 34% from 1998.

Ratio of Train Accidents to Miles Traveled (1990-1999)

Year	Train Accidents*	Train Miles in Millions	Accident Rate Per Million Train Miles
1990	175	21.53	8.13
1991	163	21.03	[illegible]
1992	142	21.37	6.64
1993	138	21.55	[illegible]
1994	144	23.34	6.17
1995	126	26.21	4.81
1996	138	21.67	6.37
1997	123	25.63	[illegible]
1998	150	29.30	5.12
1999	173	[illegible]	[illegible]

*Train Accidents are those accidents meeting the threshold reporting requirements of FRA Form 54 which are collisions (excluding most grade crossing accidents), derailments, fires, explosions, natural disasters, and other events involving the operation of on-track equipment (standing or moving) and causing more than $6,600 of reportable damage.

Accident Rate Per Million Train Miles (1990-1999)

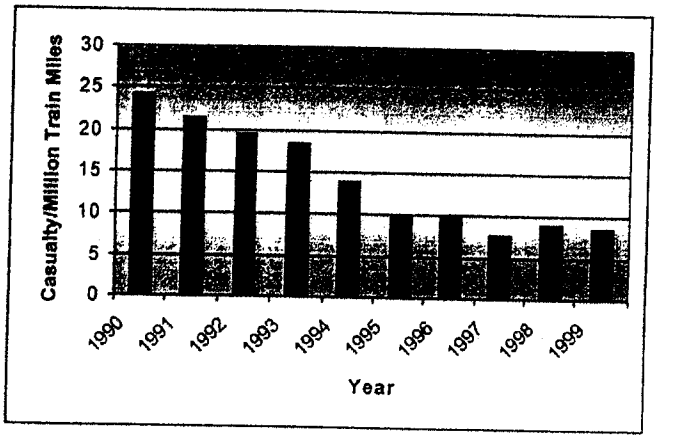


Executive Summary

Casualties to Train and Engine Crew (1990 –1999)

[illegible]	Train Miles in Millions	Casualties to Train and Engine Crew			[illegible]
		Killed	Injured	Total	
1990	21.53	4	517	521	[illegible]
1991	21.03	0	451	451	21.4
1992	21.37	1	415	416	19.5
1993	21.55	2	397	399	18.5
1994	23.34	1	324	325	13.9
1995	26.21	1	256	257	9.8
1996	21.67	3	212	215	[illegible]
1997	25.63	1	200	201	7.8
1998	29.30	1	265	266	[illegible]
1999	31.49	1	267	268	8.5

Casualty Rate Per Million Train Miles (1990-1999)



Executive Summary

Part II - Summary of Accidents/Incidents Occurring on Highway – Rail Grade Crossings as Reported by Common Carrier Railroads

Part II of the Report covers accidents at highway-rail grade crossings and accidents involving trespassers. These types of accidents involve the general public and are typically attributable to motorists and pedestrians ignoring signs and warning devices. Vehicles stalling or queuing on the tracks, drivers attempting to beat the train by maneuvering around activated gates, children playing on the tracks, trespassers crossing the tracks between public crossings as a shortcut and persons walking into or standing in front of an approaching train are examples of causes related to these type of accidents.

In 1999, there were 204 accidents at railroad crossings, resulting in 24 deaths and 73 injuries. The number of railroad grade crossing accidents increased by 9% from

1998 and casualties increased by 15%. Trespassers were involved in 130 accidents, resulting in 86 deaths and 44 injuries. This compares to 132 trespasser accidents with 79 killed, and 53 injured in 1998.

Between 1990 and 1999, the number of train accidents involving the general public have varied between a high of 369 accidents with 105 persons killed and 141 injured (1991) to a low of 278 accidents with 103 persons killed and 81 injured (1997).

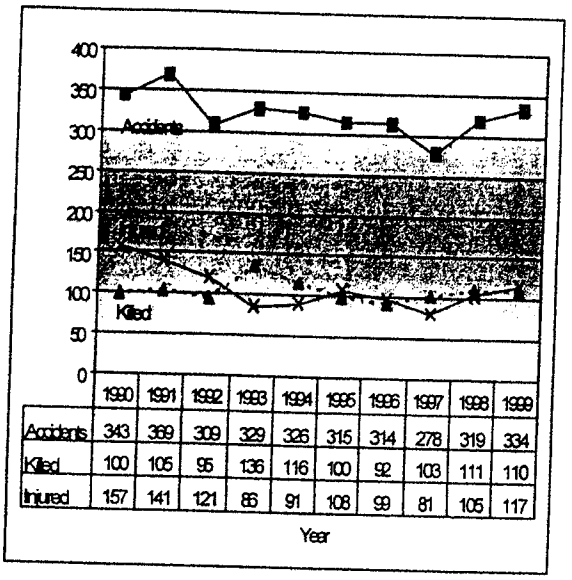
Types of Accidents Involving the General Public – 1999

Type of Accident	Accidents		Casualties			
	Total	% of Total	Killed	Injured	Total	% of Total
Grade Crossing Accidents*						
Vehicle-Train at Public Crossings	156	46.7	10	55	65	28.6
Vehicle-Train at Private Crossings	29	8.7	5	8	13	5.7
Miscellaneous	6	1.8	2	4	6	2.6
Pedestrian (Public & Private)	13	3.9	7	6	13	5.7
Subtotal	204	61.1	24	73	97	42.7
Between Crossings						
Trespasser	130	38.9	86	44	130	57.3
Total	334	100	110	117	227	100

"Vehicle" includes automobile, bus, van, truck-trailer, truck, or motorcycle.
"Miscellaneous" includes those accidents at public and private crossings where the train struck a bicycle.
"Trespasser" includes those persons who are on railroad operating property, and whose presence is prohibited, forbidden, or unlawful.
*Grade Crossings are intersections of a roadway with a railroad track(s) when both are at the same elevation.

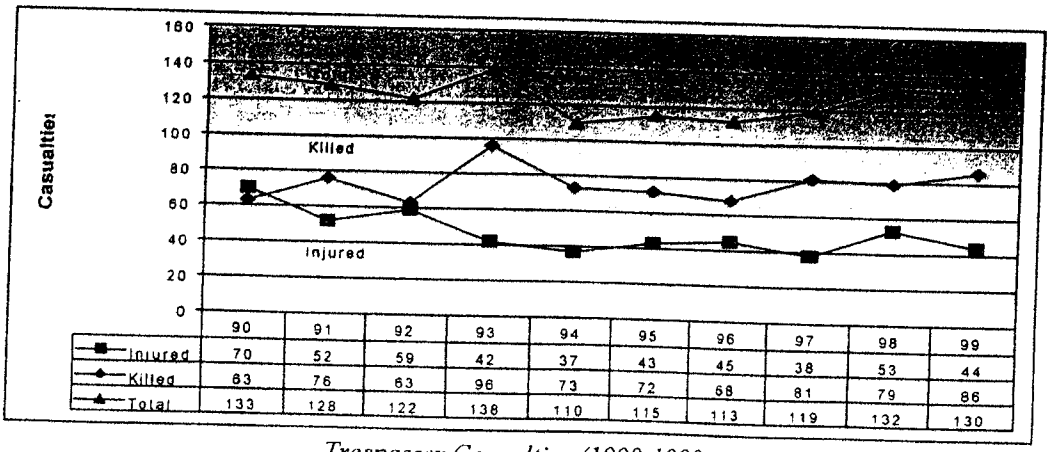
Executive Summary

Train Accidents Involving the General Public Including Trespassers (1990-1999)



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Accidents	343	369	309	329	326	315	314	278	319	334
Killed	100	105	95	136	116	100	92	103	111	110
Injured	157	141	121	86	91	108	99	81	105	117

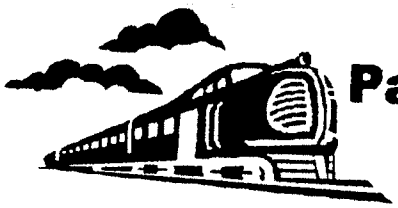
A large portion of the decline in train accidents can be attributed to the State's ongoing rail safety programs. The state and federal governments have expended millions of dollars to improve safety at railroad crossings. These programs are the State-mandated Grade Separation Program that provides funds for eliminating accidents by separating railroad tracks and streets through the use of overpasses and underpasses and closing crossings; the Automatic Grade Crossing Protection Maintenance Fund that pays the cities and counties share of the cost for maintaining automatic grade crossing devices; the Federal Railway-Highway Crossing Improvement Program (Section 130) which provides funds to the state for the use of upgrading railroad warning devices such as gates, cantilevers, signage, flashing lights at grade crossings; and the Operation Lifesaver Program that educates the public on rail safety.



	90	91	92	93	94	95	96	97	98	99
Injured	70	52	59	42	37	43	45	38	53	44
Killed	63	76	63	96	73	72	68	81	79	86
Total	133	128	122	138	110	115	113	119	132	130

Trespasser Casualties (1990-1999)

Trespasser accidents have increased by approximately 18% between 1994 and 1999. The numbers of persons illegally using the railroad right-of-way for access in-between public crossings account for the increases. Public education programs and stricter enforcement of trespasser violations may help to reduce the number of train-pedestrian accidents.



Part I – Railroad Accidents

Hazardous Materials

Tables 4 and 5 summarize train accidents involving hazardous materials in California, as reported to the FRA. The number of derailed or damaged cars, as shown in Table 4, decreased from 52 cars in 1998 to 44 cars in 1999 (15% decrease). The number of derailed or damaged cars per 10 million train miles traveled, as shown in Table 5, decreased from 17.75 in 1998 to 13.97 in 1999 (21% decrease). While train accidents involving hazardous materials increased in 1999, four accidents resulted in a release of hazardous materials with nine evacuations.

Table 4 - Hazardous Materials Train Accident Total (1990-1999)

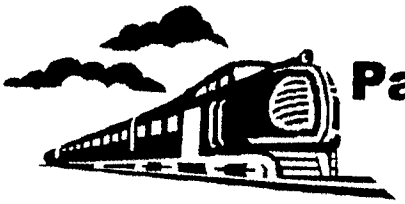
Year	Number of Accidents	Cars Carrying Hazardous Materials	Damaged or Derailed	Releases*	Evacuated	Injured	
1990	26	94	46	3	43	1	0
1991	27	106	37	3	300	53	[illegible]
1992	28	103	40	0	100	1	0
1993	31	231	34	0	30	6	[illegible]
1994	38	288	50	6	0	7	0
1995	28	215	66	1	200	2	[illegible]
1996	33	186	53	7	54	1	2
1997	19	101	23	10	[illegible]	0	[illegible]
1998	30	211	52	1	0	3	0
1999	38	[illegible]	46	[illegible]	[illegible]	2	[illegible]

* Releases due to derailments, collisions and fires as reported on FRA Form 54.
** Accident was at highway-rail grade crossing, not due to hazardous material exposure, no train crew casualites.

Table 5 - Hazardous Materials Train Accident Rate (1990-1999)

Year	Accidents per 10 Million Train Miles	Cars Carrying Hazardous Material per 10 Million Train Miles	Cars Damaged or Derailed per 10 Million Train Miles	Releases per 10 Million Train Miles*
1990	12.08	43.66	21.37	1.39
1991	12.83	50.40	17.59	1.43
1992	13.10	48.20	18.78	0.00
1993	14.39	107.19	15.78	0.00
1994	16.30	123.60	14.57	2.57
1995	10.68	82.03	25.18	0.38
1996	15.24	85.87	24.47	3.23
1997	7.41	39.41	8.97	0.00
1998	10.20	70.20	17.75	0.34
1999	12.07	93.68	13.97	1.27

* Releases due to derailments, collisions, or fires as reported on FRA Form 54.



Part I – Railroad Accidents

Other data sources give more information about the transportation of hazardous materials by rail. For example, the Environmental Protection Agency's (EPA) Emergency Response Notification System (ERNS) was notified of 71 chemical releases in California due to transportation by rail. Table 6 and Figure 3 are based on the initial notifications documented by the EPA's ERNS database for 1995 through 1999 for railroads, and other transportation means, and by substances. ERNS reports fall into three major categories: substances designated as hazardous under the CERCLA (Comprehensive Environmental Response, Compensation, and Litigation Act of 1980), as amended; oil and petroleum products, as defined by the Clean Air Act of 1972, as amended by the Oil Pollution Act of 1990; and all other types of materials. The use of data supports emergency response planning efforts, and assist decision makers in developing spill prevention programs. Another data source includes notifications from the Governor's Office of Emergency Services 24-Hour Warning Center (OES). For 1999, there were 113 OES notifications of incidents involving hazardous material.

The reported number of initial hazardous materials notifications reported to OES versus the number of incidents to the FRA varies due to the different threshold reporting requirements.

Table 6 shows an increase in hazardous materials releases by rail from 65 in 1998 to 71 in 1999. There has been a 38% decrease in reported hazardous materials releases since 1995 for rail. Figure 3 compares the percentages of total releases by transportation mode.

PU Code Section 765.5(d) requires the Commission to dedicate sufficient resources to implement the State Participation Program, regulating the rail transportation of hazardous materials as authorized by the Hazardous Material Uniform Safety Act of 1990 (P.L. 101-615). Accordingly, the FRA has certified three Commission staff members as hazardous materials inspectors. These inspectors conduct a variety of activities, including analysis of incidents reported from the OES, field inspections incidental to the notifications, and recommendations to prevent recurrences of incidents.

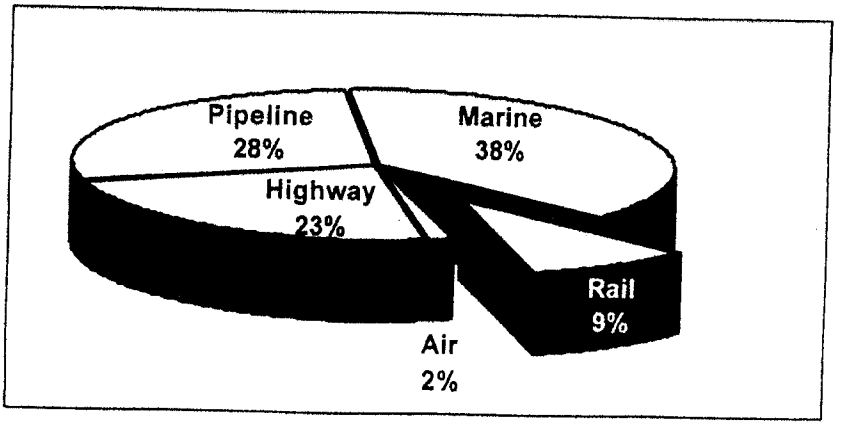
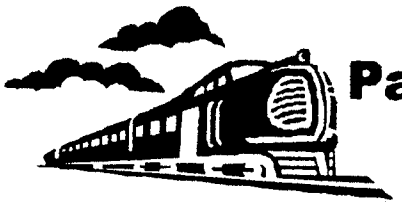
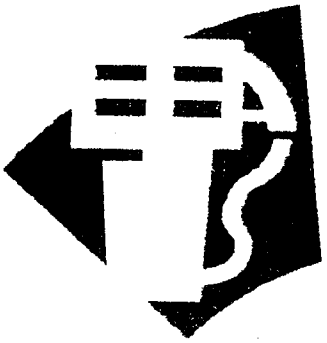


Figure 3 - Total Hazardous Material Releases by Transportation Mode-ERNS Data (1995-1999)



Part I – Railroad Accidents

Table 6 - Hazardous Material Releases by Transportation Mode (1995-1999)



Mode	Year	Oil[1]	CERCLA[2]	EHS/OTHER[3]	Total
Rail	1995	55	30	29	114
	1996	38	39	0	77
	1997	58	36	18	112
	1998	41	20	4	65
	1999	46	21	4	71
	Total	***238***	***146***	***55***	***439***
Highway	1995	210	36	32	278
	1996	231	50	1	282
	1997	142	37	27	206
	1998	121	24	15	160
	1999	133	28	19	180
	Total	***837***	***175***	***94***	***1,106***
Pipeline	1995	186	4	3	193
	1996	306	10	2	318
	1997	267	12	22	301
	1998	255	7	10	272
	1999	230	1	11	242
	Total	[redacted]	[redacted]	[redacted]	[redacted]
Marine	1995	322	2	2	326
	1996	325	6	0	331
	1997	322	8	69	399
	1998	335	0	4	339
	1999	363	2	10	375
	Total	***1,717***	***18***	***85***	***1,820***
Air	1995	15	2	2	19
	1996	15	0	0	15
	1997	9	1	1	11
	1998	9	0	1	10
	1999	14	0	3	17
	Total	***62***	***3***	***7***	***72***

Source: Emergency Response Notification System (ERNS- are initial notifications and may be subject to change.)

1. Oil: Oil and petroleum products, as defined by the Clean Water Act of 1972, as amended by the Oil Pollution Act of 1990, such as diesel fuels, lubricating oils, and gasoline.
2. CERCLA: A list of 775 environmentally hazardous chemicals designated by the Comprehensive Environmental Response, Compensation and Litigation Act of 1980. This table is based on the Chemical Table from Title 40 CFR, Part 302.4 of November 1990.
3. EHS: This category includes chemicals regulated as Extremely Hazardous Substances under EPCRA Section 302 excluding those chemicals also regulated as hazardous substances under CERCLA. In 1997, classifications changed with third category designated as "Other."

ACCIDENT/INCIDENT OVERVIEW
SELECTION: RAILROAD - Union Pacific RR Co. [UP] / January TO August,

TOTAL ACCIDENTS/INCIDENTS:	1,803	Number of fatal acciden
Overall frequency rate:	13.26	Total train miles:
Total fatalities:	147	Switching miles:
Total nonfatal conditions:	926	Employee hours:

Total accidents/incidents is the sum of train accidents, highway-rail
Total accident/incident rate is the number of events times 1,000,000 d

---

TOTAL TRAIN ACCIDENTS:	598	Number of fatal trai
Number per million train miles:	4.40	Collisions:
Total fatalities:	1	Derailments:
Total nonfatal conditions:	19	Other accidents:

----------Primary causes----------

Human factors:	30.77%	184	Track defects:
Equipment defects:	13.04%	78	Signal defects:
Miscellaneous causes:	17.73%	106	

Number of accidents on yard track:	350	58.53% of all train ac
Nbr per million yard train miles:	32.74	For other tracks:

Train accidents represent 33.17% of all reported events.

Number of train accidents involving passenger trains . . %

Number of train accidents that resulted in a release of hazardous mate
Number of persons evacuated 0 Number of rail cars releasing hazm

A train accident is an event involving ontrack rail equipment that res
and track above a certain threshold. Lading, clearing costs, environm

---

HIGHWAY-RAIL		TRESPASSING INCIDENTS(
Incidents:	384	
Number per million train miles:	2.82	Frequency per million
Total fatalities:	58	Tota
Total nonfatal conditions:	149	Total nonfata
Number of fatal crossing incidents	45	11.72%

Highway-rail and trespassing incidents account for 97.96% of all fatal
Highway-rail incidents represent 21.30% of all reported events.

A highway-rail incident is any impact between a rail and a highway use
Includes motor vehicles and other highway/roadway/sidewalk users at bo

OTHER INCIDENTS:	821	Number of fatal other in
Other incidents account for:	45.54%	of all accidents/inciden
Total fatalities:	88	1 Number to employees
Total nonfatal conditions:	758	593 Number to employe

Other incidents include any event where that caused a death, an injury to a railroad employee. Most fatalities in this category are to tresp

EMPLOYEES ON DUTY CASES:	630	Frequency per 200,000 h
Total fatalities:	1	0.68% of all fatalities
Total nonfatal conditions:	629	67.93% of all nonfatal

ACCIDENT/INCIDENT OVERVIEW
SELECTION: RAILROAD - Union Pacific RR Co. [UP] / January TO Decembe

TOTAL ACCIDENTS/INCIDENTS:	2,714	Number of fatal acciden
Overall frequency rate:	13.63	Total train miles:
Total fatalities:	167	Switching miles:
Total nonfatal conditions:	1,451	Employee hours:

Total accidents/incidents is the sum of train accidents, highway-rail
Total accident/incident rate is the number of events times 1,000,000 d

---

TOTAL TRAIN ACCIDENTS:	949	Number of fatal trai
Number per million train miles:	4.77	Collisions:
Total fatalities:	3	Derailments:
Total nonfatal conditions:	36	Other accidents:

----------Primary causes----------

Human factors:	36.99%	351	Track defects:
Equipment defects:	9.80%	93	Signal defects:
Miscellaneous causes:	15.07%	143	

Number of accidents on yard track:	553	58.27% of all train ac
Nbr per million yard train miles:	34.77	For other tracks:

Train accidents represent 34.97% of all reported events.

Number of train accidents involving passenger trains . . %

Number of train accidents that resulted in a release of hazardous mate
Number of persons evacuated 1,932 Number of rail cars releasing hazm

A train accident is an event involving ontrack rail equipment that res
and track above a certain threshold. Lading, clearing costs, environm

---

HIGHWAY-RAIL		TRESPASSING INCIDENTS(
Incidents:	559	
Number per million train miles:	2.81	Frequency per million
Total fatalities:	63	Tota
Total nonfatal conditions:	232	Total nonfata
Number of fatal crossing incidents	54	9.66%

Highway-rail and trespassing incidents account for 94.61% of all fatal
Highway-rail incidents represent 20.60% of all reported events.

A highway-rail incident is any impact between a rail and a highway use
Includes motor vehicles and other highway/roadway/sidewalk users at bo

OTHER INCIDENTS:	1,206	Number of fatal other in
Other incidents account for:	44.44%	of all accidents/inciden
Total fatalities:	101	5 Number to employees
Total nonfatal conditions:	1,183	951 Number to employe

Other incidents include any event where that caused a death, an injury to a railroad employee. Most fatalities in this category are to tresp

EMPLOYEES ON DUTY CASES:	1,021	Frequency per 200,000 h
Total fatalities:	8	4.79% of all fatalities
Total nonfatal conditions:	1,013	69.81% of all nonfatal

ACCIDENT/INCIDENT OVERVIEW
SELECTION: RAILROAD - Union Pacific RR Co. [UP] / January TO Decembe

TOTAL ACCIDENTS/INCIDENTS:	2,696	Number of fatal acciden
Overall frequency rate:	13.96	Total train miles:
Total fatalities:	203	Switching miles:
Total nonfatal conditions:	1,444	Employee hours:

Total accidents/incidents is the sum of train accidents, highway-rail
Total accident/incident rate is the number of events times 1,000,000 d

---

TOTAL TRAIN ACCIDENTS:	961	Number of fatal trai
Number per million train miles:	4.98	Collisions:
Total fatalities:	8	Derailments:
Total nonfatal conditions:	109	Other accidents:

----------Primary causes----------

Human factors:	38.19%	367	Track defects:
Equipment defects:	10.82%	104	Signal defects:
Miscellaneous causes:	16.02%	154	

Number of accidents on yard track:	613	63.79% of all train ac
Nbr per million yard train miles:	39.11	For other tracks:

Train accidents represent 35.65% of all reported events.

Number of train accidents involving passenger trains . . %

Number of train accidents that resulted in a release of hazardous mate
Number of persons evacuated 354 Number of rail cars releasing hazm

A train accident is an event involving ontrack rail equipment that res
and track above a certain threshold. Lading, clearing costs, environm

---

HIGHWAY-RAIL		TRESPASSING INCIDENTS(
Incidents:	536	
Number per million train miles:	2.78	Frequency per million
Total fatalities:	77	Tota
Total nonfatal conditions:	198	Total nonfata
Number of fatal crossing incidents	70	13.06%

Highway-rail and trespassing incidents account for 94.58% of all fatal
Highway-rail incidents represent 19.88% of all reported events.

A highway-rail incident is any impact between a rail and a highway use
Includes motor vehicles and other highway/roadway/sidewalk users at bo

OTHER INCIDENTS:	1,199	Number of fatal other in
Other incidents account for:	44.47%	of all accidents/inciden
Total fatalities:	118	. Number to employees
Total nonfatal conditions:	1,137	917 Number to employe

Other incidents include any event where that caused a death, an injury to a railroad employee. Most fatalities in this category are to tresp

EMPLOYEES ON DUTY CASES:	980	Frequency per 200,000 h
Total fatalities:	5	2.46% of all fatalities
Total nonfatal conditions:	975	67.52% of all nonfatal

ACCIDENT/INCIDENT OVERVIEW
SELECTION: RAILROAD - Union Pacific RR Co. [UP] / January TO Decembe

TOTAL ACCIDENTS/INCIDENTS:	2,560	Number of fatal acciden
Overall frequency rate:	13.46	Total train miles:
Total fatalities:	207	Switching miles:
Total nonfatal conditions:	1,378	Employee hours:

Total accidents/incidents is the sum of train accidents, highway-rail
Total accident/incident rate is the number of events times 1,000,000 d

---

TOTAL TRAIN ACCIDENTS:	799	Number of fatal trai
Number per million train miles:	4.20	Collisions:
Total fatalities:	2	Derailments:
Total nonfatal conditions:	30	Other accidents:

		Primary causes	
Human factors:	38.30%	306	Track defects:
Equipment defects:	12.02%	96	Signal defects:
Miscellaneous causes:	13.64%	109	

Number of accidents on yard track:	474	59.32% of all train ac
Nbr per million yard train miles:	32.10	For other tracks:

Train accidents represent 31.21% of all reported events.

Number of train accidents involving passenger trains . . %

Number of train accidents that resulted in a release of hazardous mate
Number of persons evacuated 0 Number of rail cars releasing hazm

A train accident is an event involving ontrack rail equipment that res
and track above a certain threshold. Lading, clearing costs, environm

---

HIGHWAY-RAIL		TRESPASSING INCIDENTS(
Incidents:	495	
Number per million train miles:	2.60	Frequency per million
Total fatalities:	70	Tota
Total nonfatal conditions:	172	Total nonfata
Number of fatal crossing incidents	64	12.93%

Highway-rail and trespassing incidents account for 98.07% of all fatal
Highway-rail incidents represent 19.34% of all reported events.

A highway-rail incident is any impact between a rail and a highway use
Includes motor vehicles and other highway/roadway/sidewalk users at bo

OTHER INCIDENTS:	1,266	Number of fatal other in
Other incidents account for:	49.45%	of all accidents/inciden
Total fatalities:	135	2 Number to employees
Total nonfatal conditions:	1,176	945 Number to employe

Other incidents include any event where that caused a death, an injury to a railroad employee. Most fatalities in this category are to tresp

EMPLOYEES ON DUTY CASES:	986	Frequency per 200,000 h
Total fatalities:	3	1.45% of all fatalities
Total nonfatal conditions:	983	71.34% of all nonfatal

ACCIDENT/INCIDENT OVERVIEW
SELECTION: RAILROAD - Union Pacific RR Co. [UP] / January TO Decembe

TOTAL ACCIDENTS/INCIDENTS:	2,778	Number of fatal acciden
Overall frequency rate:	14.88	Total train miles:
Total fatalities:	221	Switching miles:
Total nonfatal conditions:	1,566	Employee hours:

Total accidents/incidents is the sum of train accidents, highway-rail
Total accident/incident rate is the number of events times 1,000,000 d

---

TOTAL TRAIN ACCIDENTS:	824	Number of fatal trai
Number per million train miles:	4.41	Collisions:
Total fatalities:	1	Derailments:
Total nonfatal conditions:	29	Other accidents:

----------Primary causes----------

Human factors:	35.07%	289	Track defects:
Equipment defects:	14.20%	117	Signal defects:
Miscellaneous causes:	11.77%	97	

Number of accidents on yard track:	468	56.80% of all train ac
Nbr per million yard train miles:	36.44	For other tracks:

Train accidents represent 29.66% of all reported events.

Number of train accidents involving passenger trains . . %

Number of train accidents that resulted in a release of hazardous mate
Number of persons evacuated 30 Number of rail cars releasing hazm

A train accident is an event involving ontrack rail equipment that res
and track above a certain threshold. Lading, clearing costs, environm

---

HIGHWAY-RAIL		TRESPASSING INCIDENTS(
Incidents:	532	
Number per million train miles:	2.85	Frequency per million
Total fatalities:	69	Tota
Total nonfatal conditions:	208	Total nonfata
Number of fatal crossing incidents	53	9.96%

Highway-rail and trespassing incidents account for 97.29% of all fatal
Highway-rail incidents represent 19.15% of all reported events.

A highway-rail incident is any impact between a rail and a highway use
Includes motor vehicles and other highway/roadway/sidewalk users at bo

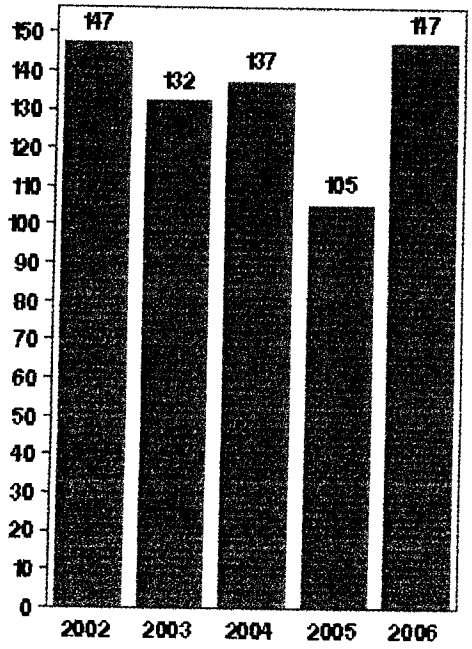
OTHER INCIDENTS:	1,422	Number of fatal other in
Other incidents account for:	51.19%	of all accidents/inciden
Total fatalities:	151	2 Number to employees
Total nonfatal conditions:	1,329	1,114 Number to employe

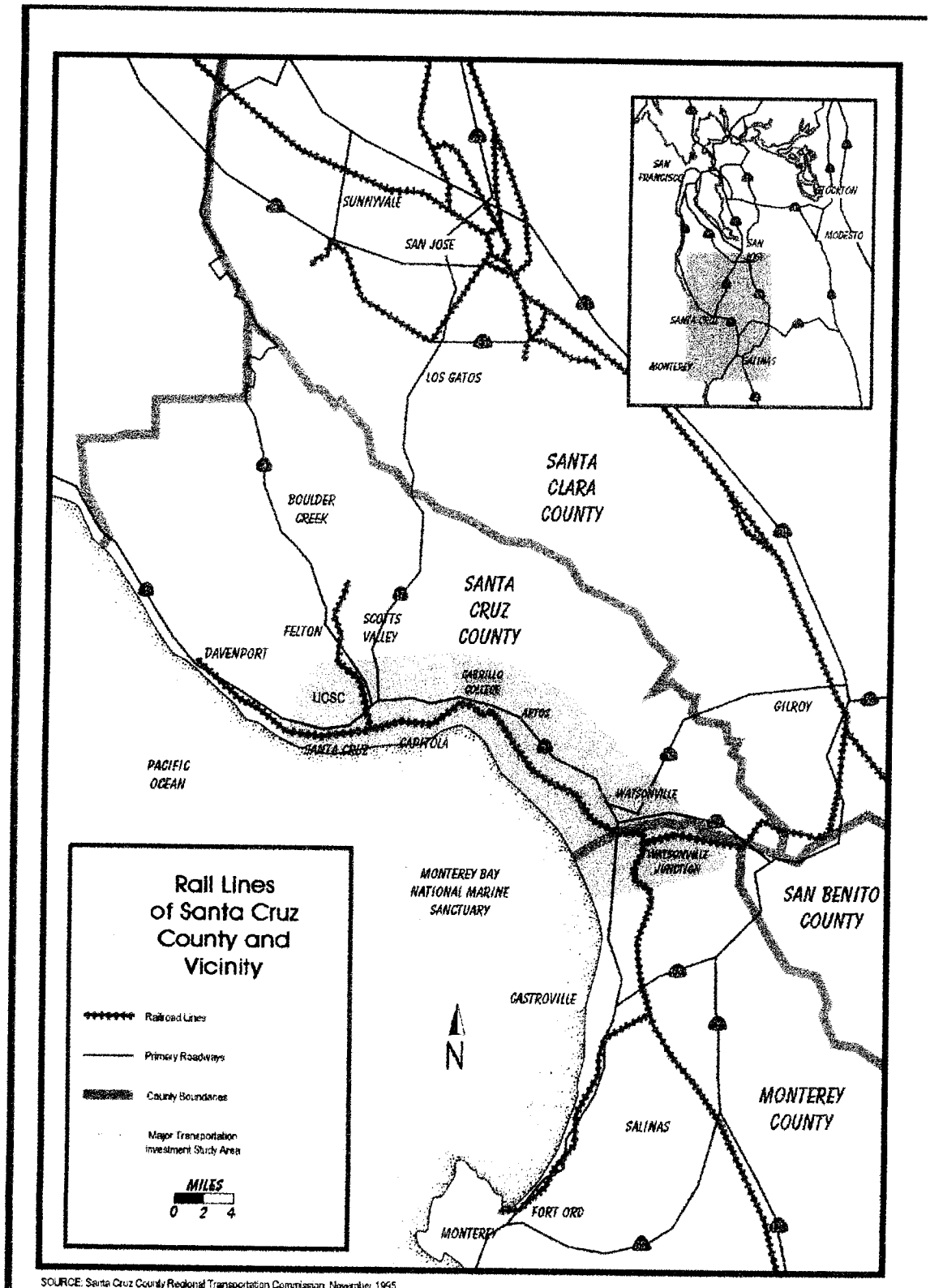
Other incidents include any event where that caused a death, an injury to a railroad employee. Most fatalities in this category are to tresp

EMPLOYEES ON DUTY CASES:	1,159	Frequency per 200,000 h
Total fatalities:	2	0.90% of all fatalities
Total nonfatal conditions:	1,157	73.88% of all nonfatal

TOTAL DEATHS, ALL ACCIDENTS/INCIDENTS

FOR Union Pacific RR Co. [UP], January – August (ALL YEARS)



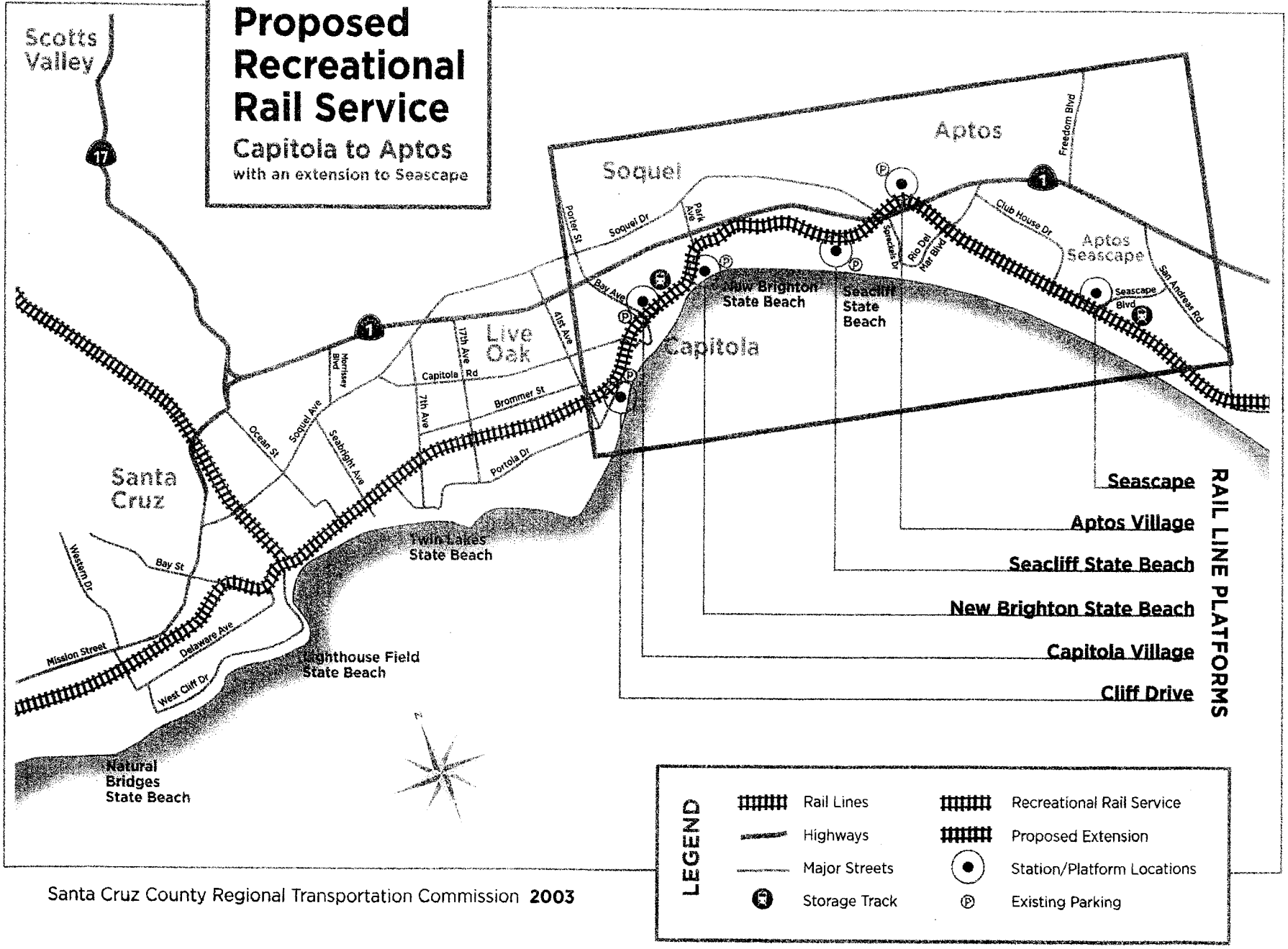


SOURCE: Santa Cruz County Regional Transportation Commission, November 1995

Proposed Recreational Rail Service

Capitola to Aptos

with an extension to Seascape



Santa Cruz County Regional Transportation Commission **2003**

SCCRTC
Santa Cruz County Regional Transportation Commission
1523 Pacific Avenue, Santa Cruz, CA 95060
phone (831) 460-3200 ~ fax (831) 460-3215
email: info@sccrtc.org website: www.sccrtc.org

NEWS RELEASE

FOR IMMEDIATE RELEASE: November 8, 2006
CONTACTS: George Dondero, Executive Director (831) 460-3200
Karena Pushnik, Senior Transportation Planner

Voters Approve Propositions Aimed at Funding Transportation

Santa Cruz County's ailing transportation system received a boost on Tuesday with voter approval of Propositions 1A and 1B. Proposition 1A dedicates gasoline sales taxes to transportation. Proposition 1B will bring $19.9 Billion to transportation through the sale of bonds. With passage of Propositions1A and 1B, residents can expect pot holes to be filled, buses to be upgraded, and major transportation projects to be constructed sooner than they otherwise could have been.

Proposition 1A ensures revenues from the state sales tax on gasoline are directed to public transit, local streets and roads, and regionally significant transportation projects. In recent years, these funds were regularly diverted to the state general fund, resulting in delays to several transportation projects in the region and making it difficult for public works departments, the Transit District, and other project sponsors to plan and build capital improvements. Passage of this proposition ensures more stable, reliable funding for transportation. Starting in FY2008/09, Santa Cruz County will receive approximately $7 million annually from the state sales tax on gasoline ($3 million for local streets and roads, $3 million for regionally significant projects, and $1 million for transit).

Without passage of Proposition 1A, projects such as acquisition of the rail line, safety improvements on Graham Hill Road, Highway 1/17 landscaping and Freeway Service Patrol were subject to further delays.

Proposition 1B – the transportation infrastructure bond, is projected to bring at least $50 million to Santa Cruz County over the next 10 years, to be distributed as follows:

- Local Streets and Roads: $12.2 million
- Public Transportation Modernization and Improvement: $27.7 million
- State Transportation Improvement Program (STIP): $11 million

The Regional Transportation Commission will consider projects to receive funds from the State Transportation Improvement Program (STIP) early next year.

In addition to these formula funds coming from the bonds sold under Proposition 1B, Santa Cruz County is eligible to receive some of the funds that will be distributed on a competitive basis, including $4.5 billion designated for highway projects that improve mobility on congested corridors. Applications for these funds are due to the State in January 2007. As the second most congested roadway in the Central Coast region (behind Highway 101 through Santa Barbara), Highway 1 in Santa Cruz County may be a strong candidate for these funds. The California Transportation Commission expects to decide which corridor projects receive funding in March 2007.

Though Proposition 1B will facilitate the delivery of several transportation projects in the region, agencies throughout the county will continue to struggle to find sufficient funding to maintain and improve the existing transportation system. Executive Director, George Dondero noted "This is a down payment for the region's transportation network. Public works departments have identified a $175 million backlog in local street and road maintenance. None of the bond measures include funding to expand existing transit or paratransit service. The work of the community-based Transportation Funding Task Force is still very important in finding long term solutions to local transportation needs."

One of the key responsibilities of the Regional Transportation Commission is to identify transportation needs in Santa Cruz County and select projects to receive funding as state and federal transportation monies become available. For more information, call SCCRTC at 831-460-3200 or visit www.sccrtc.org.

DGC ASSOCIATES

Environmental Consulting Services

ASTM E 1527-05
Phase I Environmental Site Assessment

4400 Jade Street
Capitola, California 95010

Prepared For:

Ms. Sherree Brown
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

DGC Project No. 07.10029.0001

Report Issue Date: September 25, 2007

3942 Valley Avenue, Suite J
Pleasanton, California 94566
Phone (925) 846-9800
Fax (925) 397-3051

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1
1.1 General Information 1
1.2 Findings and Conclusions Summary 2
1.3 Significant Data Gap Summary 3
1.4 Recommendations 3

2.0 INTRODUCTION 5
2.1 Purpose 5
2.2 Detailed Scope-of-Services 5
2.3 Significant Assumptions 6
2.4 Limitations and Exceptions 6
2.5 Special Terms and Conditions 8
2.6 User Reliance 8

3.0 SITE DESCRIPTION 9
3.1 Location and Legal Description 9
3.2 Site and Vicinity General Characteristics 9
3.3 Current Use of the Property 9
3.4 Description of Structures, Roads, Other Improvements on the Property 10
3.5 Current Uses of Adjoining Properties 11

4.0 USER-PROVIDED INFORMATION 13
4.1 Title Records 13
4.2 Environmental Liens or Activity and Use Limitations 13
4.3 Specialized Knowledge 13
4.4 Commonly Known or Reasonably Ascertainable Information 13
4.5 Valuation Reduction for Environmental Issues 13
4.6 Owner, Property Manager and Occupant Information 14
4.7 Reason for Performing Phase I ESA 14
4.8 Other 14
4.9 Other User Provided Documents 14

5.0 RECORDS REVIEW 15
5.1 Standard Environmental Records 15
5.1.1 Federal Agency Database Findings 16
5.1.2 State Agency Database Findings 16
5.2 Additional Local Environmental Record Sources 16
5.3 Physical Setting Sources 19
5.3.1 Topography 19
5.3.2 Geology 19
5.3.3 Soils 19
5.3.4 Hydrology and Groundwater Depth 19
5.3.5 Other Physical Setting Sources 20
5.4 Historical Records Sources 21
5.4.1 Aerial Photographs 21
5.4.2 Fire Insurance Maps 22
5.4.3 Property Tax Files 22

5.4.4 Land Title Records 22
5.4.5 Historical USGS Topographic Quadrangles 22
5.4.6 City Directories 23
5.4.7 Building Department Records 23
5.4.8 Zoning/Land Use Records 24
5.4.9 Prior Reports 24
5.4.10 Other Historical Sources 25
5.4.11 Rationale 25

6.0 SITE RECONNAISSANCE 26
6.1 Methodology and Limiting Conditions 26
6.2 General Site Setting 26
6.3 Interior and Exterior Observations 26
6.3.1 Current Uses(s) of the Property 26
6.3.2 Past Uses(s) of the Property 27
6.3.3 Hazardous Substances and Petroleum Products in Connection with Identified Uses 27
6.3.4 Storage Tanks 27
6.3.5 Odors 27
6.3.6 Pools of Liquid 27
6.3.7 Drums 28
6.3.8 Other Petroleum Products 28
6.3.9 Unidentified Substance Containers 28
6.3.10 Polychlorinated Biphenyls (PCBs) 28
6.4 Interior Observations 28
6.4.1 Heating and Cooling 28
6.4.2 Stains or Corrosion 28
6.4.3 Drains and Sumps 28
6.5 Exterior Observations 29
6.5.1 Waste Pits, Ponds or Lagoons 29
6.5.2 Stained Soil or Pavement 29
6.5.3 Stressed Vegetation 29
6.5.4 Non-hazardous Solid Waste 29
6.5.5 Stormwater Management System and Waste Water 29
6.5.6 Wells 30
6.5.7 Septic Systems 30
6.5.8 Landfills 30
6.5.9 Waste Generation, Storage and Disposal 30

7.0 INTERVIEWS 31
7.1 Interview with Owner 31
7.2 Interview with Past Owner(s) 32
7.3 Interview with User 32
7.4 Interview with Key Site Manager 32
7.5 Interviews with Major Occupants 32
7.6 Interviews with Local Government Officials 32
7.7 Interviews with Others 33

8.0 FINDINGS 34

9.0 OPINION 35

10.0 CONCLUSIONS 36

11.0 DEVIATIONS 37

12.0 ADDITIONAL (NON-ASTM) SERVICES 38
12.1 Asbestos-Containing Material (ACM) 38
12.2 Radon 38
12.3 Lead in Drinking Water 39
12.4 Lead-Based Paint (LBP) 39
12.5 High Voltage Power Lines 39
12.6 Additional User Requested Conditions 39

13.0 REFERENCES 40

14.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS 42

15.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS 43

16.0 APPENDICES 44

Appendix A Site Vicinity Map
Appendix B Site Plan
Appendix C Site Photographs
Appendix D User Provided Documentation
Appendix E Regulatory Database Report
Appendix F Aerial Photographs
Appendix G Historical Research Documentation
Appendix H Prior Reports
Appendix I Resumes
Appendix J Records of Communication
Appendix K Laboratory Reports
Appendix L Other Supporting Documentation
Appendix M Terminology

1.0 EXECUTIVE SUMMARY

1.1 General Information

Project Information:
Opal Cliffs School Site

Consultant Information:
Diablo Green Consulting Inc.
dba DGC Associates Inc.
3942 Valley Avenue, Suite J
Pleasanton, California 94566
Telephone: (925) 846-9800
Fax: (925) 397-3051
Reconnaissance Date: September 10, 2007
Site Assessor: Holly D. Moore
Senior Reviewer: William Mitchell
Environmental Professional: William Mitchell

Site Information:
4400 Jade Street
Capitola, California 95010
Santa Cruz County

Site Access Contact:
Ella Henson
Weston Miles Architects Inc.
Telephone: (408) 779-6686

Client Information:
Ms. Sherree Brown
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010
Telephone: (831) 464-5630
E-Mail: sbrown@suesd.org

Environmental Professional Statement:
We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in § 312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Holly D. Moore

Holly D. Moore, CSST, REA
Environmental Professional / Senior Project Manager / Site Assessor

William A. Mitchell

William A. Mitchell, PG, REA
Environmental Professional / Professional Geologist / Senior Reviewer

1.2 Findings and Conclusions Summary

DGC Associates Inc. (DGC) has performed this Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E 1527-05. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report.

This assessment has revealed no evidence of *recognized environmental conditions* in connection with the property.

FINDINGS AND CONCLUSIONS SUMMARY							
Report Section		**Further Action?**	**De Minimis Condition**	**Recognized Environmental Condition (REC)**	**Historical REC**	**ASTM Non-Scope Condition**	**Description**
4.0	**User Provided Information**	No					
5.1.1	**Federal Database Findings**	No					
5.1.2	**State and Tribal Database Findings**	No					
5.2	**Additional Local Environmental Record Sources**	No					
5.4	**Historical Records Sources**	**YES**		**X**			**See #1 below, potential pesticide use in the area to be developed**
6.3.3	**Hazardous Substance Use and Petroleum Products**	No					
6.3.4	**Storage Tanks - Underground Storage Tanks and Aboveground Storage Tanks (ASTs)**	No					
6.3.8	**Other Petroleum Products**	No					
6.3.9	**Unidentified Substance Containers**	No					
6.3.10	**Polychlorinated Biphenyls (PCBs)**	No					
6.4.3	**Drains and Sumps**	No					
6.5.1	**Waste Pits, Ponds and Lagoons**	No					
6.5.4	**Nonhazardous Solid Waste**	No					
6.5.5	**Stormwater Management System and Wastewater**	No					
6.5.6	**Wells**	No					
6.5.7	**Septic Systems**	No					
7.0	**Interviews**	No					
12.1	**Asbestos-Containing Material (ACM)**	No					
12.2	**Radon**	No					
12.3	**Lead in Drinking Water**	No					
12.4	**Lead-Based Paint (LBP)**	**YES**				**X**	**See #2 below**
12.5	**High Voltage Power Lines**	No					
12.6	**Additional User Requested Conditions**	No					

1) The area of the property to be developed with the Opal Cliffs school includes an area of the property that has been occupied as a community garden since at least 1998. Future development of the school includes construction of buildings to the south of the community garden, within the existing soccer field / grass area. Pesticides and herbicides may have been used in these areas in

the past. Therefore, this represents a *recognized environmental condition*. Recommendations are included within Section 1.4.

2) There are no buildings on the area of the property to be developed with the school. Further, the property is located at least one-half to one mile south of Highway 1 (Cabrillo Highway). Thus, it is not anticipated that lead deposited from freeway/interstate activities would impact the property. The northern adjacent properties are developed with homes, which have been present since at least the 1960's. Those homes may contain lead paint on their exteriors. Because the property is proposed to be developed with an elementary school and playground areas, DGC recommends sampling of the soils for metals including lead. Further details are provided within Section 1.4.

1.3 Significant Data Gap Summary

The following is a summary of *significant data gaps* identified in this report.

SIGNIFICANT DATA GAP SUMMARY		
Report Section		**Description**
3.5	**Current Uses of Adjoining Properties**	No *significant data gap* identified.
4.2	**Environmental Liens or Activity and Use Limitations (AULs)**	No *significant data gap* identified.
5.1	**Standard Environmental Records**	No *significant data gap* identified.
5.2	**Physical Setting Sources**	No *significant data gap* identified.
5.4	**Historical Records Sources**	No *significant data gap* identified.
6.1	**Methodology and Limiting Conditions**	No *significant data gap* identified.
7.0	**Interviews**	No *significant data gap* identified.

1.4 Recommendations

1) **Subsurface Investigation (pesticides)**: Pesticides and herbicides may have been used on the area to be developed with the elementary school. Common pesticides used in homes and lawns are now being shown in medical research to accelerate aging of the immune and nervous system resulting in serious health problems years after exposure. Therefore, DGC recommends soil sampling to ensure that the soils have not been impacted by such chemicals.

2) **Subsurface Investigation (lead)**: According to the United States Environmental Protection Agency (EPA), many homes built before 1978 contain lead-based paint. Lead can be found in homes and in soils. According to the EPA, childhood lead poisoning is a "major environmental health problem in the U.S." Lead can get into your body by eating paint chips or soil that contains lead, breathing in lead dust, etc. According to the EPA, lead is more dangerous to children that adults because "babies and young children often put their hands and other objects in their mouths", children's growing bodies absorb more lead, and "children's brains and nervous system are more sensitive to the damaging effects of lead." Because the property is proposed to be developed with an elementary school and playground areas, DGC recommends sampling of the soils for metals, including lead.

Cost Estimate: $12,000

The above estimates are based upon observed property conditions. Additional costs may apply if field conditions differ from those conditions observed during the property inspection.

2.0 INTRODUCTION

This report documents the findings, opinions and conclusions of a Phase I Environmental Site Assessment (ESA) of the property located at 4400 Jade Street in Capitola, Santa Cruz County, California (the "property").

This assessment was completed in general accordance with the ASTM "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM Designation E 1527-05). The United States Environmental Protection Agency (EPA) further addressed the requirements for a Phase I ESA within the Standards and Practices for All Appropriate Inquiries: Final Rule (AAI) released on November 1, 2005.

2.1 Purpose

The purpose of this Phase I ESA was to identify *recognized environmental conditions* and certain potential environmental conditions outside the scope of ASTM Standard Practice E 1527-05 in connection with the property at the time of the site reconnaissance. This report documents the findings, opinions and conclusions of the Phase I ESA.

2.2 Detailed Scope-of-Services

This Phase I ESA was conducted in general accordance with the ASTM Standard Practice E 1527-05, consistent with a level of care and skill ordinarily practiced by the environmental consulting profession currently providing similar services under similar circumstances. Significant additions, deletions or exceptions to ASTM Standard Practice E 1527-05 are noted below or in the corresponding sections of this report. The scope of this assessment included an evaluation of the following:

- Physical setting characteristics of the property through a review of referenced sources such as topographic maps and geologic, soils and hydrologic reports.

- Usage of the property, adjoining properties and surrounding area through a review of referenced historical sources such as land title records, fire insurance maps, city directories, aerial photographs, prior reports and interviews.

- Observations and interviews regarding current property usage and conditions including: the use, treatment, storage, disposal or generation of hazardous substances, petroleum products, hazardous wastes, nonhazardous solid wastes and wastewater.

- Environmental liens and activity and use limitations (AULs) associated with the property.

- Usage of adjoining and surrounding area properties and the likely impact of known or suspected releases of hazardous substances or petroleum products from those properties on the property.

- Information in referenced environmental agency databases and local environmental records, within the specified approximate minimum search distance from the property.

The scope of the assessment also included consideration of the following potential environmental conditions that are beyond the scope of ASTM Practice E 1527:

- Asbestos-containing material (ACM), consisting of providing an opinion on the potential for the presence of ACM based on the construction date of buildings on the property and visual observation of the condition of suspect ACM.

- Radon, consisting of the review of published radon data with regard to the potential for elevated levels of radon gas in the surrounding area of the property.

- Lead in drinking water, consisting of contacting the water supplier for information regarding whether or not the potable water provided to the property meets or exceeds drinking water standards for lead.

- Lead-based paint (LBP), consisting of providing an opinion on the potential for LBP based on the construction date of buildings on the property and visual observation of the condition of suspect LBP.

- Wetlands, consisting of a review of a current National Wetlands Inventory map of the surrounding area to note if the property is identified as having a wetland.

2.3 Significant Assumptions

Any assumptions in this report were not considered as having significant impact on the determination of *recognized environmental conditions* associated with the property.

2.4 Limitations and Exceptions

DGC has prepared this Phase I ESA report using reasonable efforts to identify *recognized environmental conditions* associated with hazardous substances or petroleum products at the property. Findings contained within this report are based on information collected from observations made on the day(s) of the site reconnaissance and from reasonably ascertainable information obtained from certain public agencies and other referenced sources.

The ASTM Standard Practice E 1527-05 recognizes inherent limitations for Phase I ESAs, including, but not limited to:

- *Uncertainty Not Eliminated* – A Phase I ESA cannot completely eliminate uncertainty regarding the potential for *recognized environmental conditions* in connection with any property.

- *Not Exhaustive* – A Phase I ESA is not an exhaustive investigation of the property and environmental conditions on such property.

- *Past Uses of the Property* – Phase I requirements only require review of standard historical sources at five year intervals. Therefore, past uses of property at less than five year intervals may not be discovered.

Users of this report may refer to ASTM Standard Practice E 1527-05 for further information regarding these and other limitations. This report is not definitive and should not be assumed to be a complete and/or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions determined by surface observations, interviews and reviews of historical sources. The most reliable method of evaluating subsurface conditions is through intrusive techniques, which are beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other property construction purposes. Any use of this report by any party, beyond the scope and intent of the original parties, shall be at the sole risk and expense of such user.

DGC makes no representation or warranty that the past or current operations at the property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, DGC is not responsible for consequences or conditions arising from facts not fully disclosed to DGC during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search distances and is assumed to be correct and complete unless obviously contradicted by DGC's observations or other credible referenced sources reviewed during the assessment. DGC shall not be liable for any such database firm's failure to make relevant files or documents properly available, to properly index files, or otherwise to fail to maintain or produce accurate or complete records.

DGC used reasonable efforts to identify evidence of aboveground and underground storage tanks and ancillary equipment on the property during the assessment. "Reasonable efforts" were limited to observation of accessible areas, review of referenced public records and interviews. These reasonable efforts may not identify subsurface equipment or evidence hidden from view by things including, but not limited to, snow cover, paving, construction activities, stored materials and landscaping.

Any estimates of costs or quantities in this report are approximations for commercial real estate transaction due diligence purposes and are based on the findings, opinions and conclusions of this assessment, which are limited by the scope of the assessment, schedule demands, cost constraints, accessibility limitations and other factors associated with performing the Phase I ESA. Subsequent determinations of costs or quantities may vary from the estimates in this report. The estimated costs or quantities in this report are not intended to be used for financial disclosure related to the Financial Accounting Standards Board (FASB) Statement No. 143, FASB Interpretation No. 47, Sarbanes/Oxley Act or any United States Securities and Exchange Commission reporting obligations, and may not be used for such purposes in any form without the express written permission of DGC.

DGC is not a professional title insurance or land surveyor firm and makes no guarantee, express or implied, that any land title records acquired or reviewed in this report, or any physical descriptions or depictions of the property in this report, represent a comprehensive definition or precise delineation of property ownership or boundaries.

The Environmental Professional Statement in Section 1.1 of this report does not "certify" the findings contained in this report and is not a legal opinion of such *Environmental Professional*. The *Environmental Professional* Statement is intended to document DGC's opinion that an individual meeting the qualifications of an Environmental Professional was involved in the performance of the assessment and that the activities performed by, or under the supervision of, the *Environmental Professional* were performed in conformance with the standards and practices set forth in 40 CFR Part 312 per the methodology in ASTM Standard Practice E 1527-05 and the scope of work for this assessment.

Per ASTM Standard Practice E 1527-05, Section 6, User Responsibilities, the User of this assessment has specific obligations for performing tasks during this assessment that will help identify the possibility of *recognized environmental conditions* in connection with the property. Failure by the User to fully comply with the requirements may impact their ability to use this report to help qualify for *Landowner Liability Protections* (LLPs) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). DGC makes no representations or warranties regarding a User's qualification for protection under any federal, state or local laws, rules or regulations.

In accordance with the ASTM Standard Practice E 1527-05, this report is presumed to be valid for a six month period. If the report is older than six months, the following information must be updated in order for the report to be valid: (1) regulatory review, (2) site visit, (3) interviews, (4) specialized knowledge and (5) environmental liens search. Reports older than one year may not meet the ASTM Standard Practice 1527-05 and therefore, the entire report must be updated to reflect current conditions and property-specific information.

Other limitations and exceptions that are specific to the scope of this report may be found in corresponding sections.

2.5 Special Terms and Conditions

DGC makes no representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either express or implied. There were no special terms or contractual conditions for this assessment.

2.6 User Reliance

This report may be distributed and relied upon by client, its successors and assigns. Reliance on the information and conclusions in this report by any other person or entity is not authorized without the written consent of DGC.

Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, and with the acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the property that were not discovered within the authorized scope of the assessment.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The property address is 4400 Jade Street in Capitola, Santa Cruz County, California. A Site Vicinity Map is included in Appendix A, a Site Plan is included as Appendix B, and Site Photographs are provided in Appendix C.

According to the Santa Cruz County Assessor's Office (September 6, 2007 telephone conversation), the property is referenced as Assessor's Parcel Number (APN) 034-551-02. The parcel is owned by the Soquel Union Elementary School District and is approximately 9.6 acres in size. Due to the fact that the property is a public entity, the Santa Cruz County Assessor's Office had no information regarding how long the Soquel Union Elementary School District has owned the property. However, data research regarding the title on the property was completed by Environmental Data Resources Inc., indicating that the school district has owned the property since 1956.

According to Mr. Ryan Bane, Senior Planner with the City of Capitola, the property is zoned PF-S, defined as Public Facilities, School. The community center is zoned PF-P, defined as Public Facilities, Parks/Open Space. This is appropriate for the future and proposed use.

3.2 Site and Vicinity General Characteristics

The property is located in an area that is characterized by residential uses. The topography in the area is relatively flat with regional topography sloping gently to the south. No obvious *recognized environmental conditions* were observed in connection with adjacent or abutting properties, which are further discussed in Section 3.5.

3.3 Current Use of the Property

The property is currently developed with one single-story building occupied by the Capitola Community Center (4400 Jade Street). The property is further developed with a children's playground, baseball field, tennis courts (two), a municipal park (Jade Street Park), and a community garden. A building containing men's and women's restrooms is located on the eastern portion of the parking lot located on the side of the community center building. During the property inspection on September 10, 2007, the interior of the community center building was not accessible to DGC. DGC observed the Capitola Community Center building features from the exterior and perimeter of the building.

According to Ms. Ella Henson with Weston Miles Architects Inc., the proposed Opal Cliffs school site includes the area of the existing community garden. This existing community garden contains plats of land used by various individuals within the community for gardens. According to Ms. Henson, the school will consist of multiple modular buildings and will eventually expand to include a non-modular multi-purpose building. According to Ms. Sherree Brown, Assistant Superintendent, Business Services, with the Soquel Union Elementary School District (September 24, 2007 electronic mail), the school that is proposed includes "a Preschool/Early Childhood Education Center with the final plans of it becoming a fully functioning K-5 school. There will be two buildings to start with and then we will add as we grow."

According to a site plan produced by the Soquel Union School District for the proposed school buildings, an approximately 5,200 square foot play area with a play structure will be located at the northwestern portion of the area. One building containing two classrooms and the administration offices will be located on the western portion of the area that is currently the community garden. An additional building, containing four classrooms for kindergarten and first grade students and a restroom, will be located within the northern portion of the area that is currently the community garden. A courtyard and approximately 3,700 square foot play area will be developed in the center, with an additional classroom building proposed along the eastern portion of the area that is currently the community garden. Future plans include development of additional buildings to the south on the area that is currently a grass field. A copy of the plan provided by Weston Miles Architects, on behalf of the Soquel Union Elementary School District, in included as Figure 2d.

No environmental concerns were noted at the property.

3.4 Description of Structures, Roads, Other Improvements on the Property

The following table provides general descriptions of the property improvements.

PROPERTY IMPROVEMENTS	
Size of Property (approximate)	According to the Santa Cruz County Assessor's Office, the APN is approximately 9.6 acres in size.
General Topography of Property	Gentle slope to the south.
Adjoining and/or Access/Egress Roads	Jade Street to the north and 42nd Avenue to the east.
Paved or Concrete Areas (including parking)	An asphalt-paved parking lot exists on the northern boundary of the property, in front of the community center building near Jade Street. An additional parking lot is located on the eastern side of the community center building between the community center and the Jade Street Park within the center of the property.
Unimproved Areas	None; the property is covered with asphalt pavement, the community garden, tennis courts, a baseball field, playground area, and the municipal park.
Landscaped Areas	None.
Surface Water	None.
Potable Water Source	Soquel Creek Water District.
Sanitary Sewer Utility	Santa Cruz County.
Storm Sewer Utility	Santa Cruz County.
Electrical Utility	Pacific Gas and Electric Company (PG&E).
Natural Gas Utility	PG&E.
Current Occupancy Status	The community center is 100% occupied; the remaining portions of the property are used for community purposes.
Unoccupied Buildings/Spaces/Structures	None.

PROPERTY IMPROVEMENTS	
Number of Occupied Buildings	One building is located on the property (community center); no buildings are located on the portion of the property that is proposed to be developed with the school (community garden).
General Building Description	Commercial building (community center); no buildings are located on the portion of the property that is proposed to be developed with the school (community garden).
Number of Floors	One.
Total Square Feet of Space (approximate)	The community center building is 5,376 square feet in size. No buildings are located on the portion of the property to be developed with the school, which is currently developed with a community garden.
Construction Completion Date (year)	The community center was built in 1987.
Construction Type	The community center building has a stucco exterior and the roof consists of wood shingles or composition roofing over solid sheathing (roof permitted for replacement in 2006; note within the City of Capitola records that the permit was cancelled).
Interior Finishes Description	Unknown – Interior of the community center not inspected by DGC.
Exterior Finishes Description	Stucco and paint.
Cooling System Type	Unknown – Community center building not inspected by DGC. No heating, ventilation and air conditioning (HVAC) system at the garden.
Heating System Type	Unknown – Community center building not inspected by DGC. No HVAC system at the garden.
Emergency Power	None.

3.5 Current Uses of Adjoining Properties

Current uses of the adjoining properties were observed to be as follows:

Direction from Property	Address	Occupant(s) Name	Current Use	Potential Environmental Conditions
North (beyond Jade Street)	4425 Jade Street, 4455 Jade Street, 1355 45th Avenue	Apartment buildings	Residential	None observed
East (beyond 47th Avenue)	Mobile home park	Mobile homes	Mobile home park	None observed
South (beyond Southern Pacific Railroad tracks)	Homes off Portola Drive and Nova Drive, including 4255 Portola Drive	Single-family homes	Single-family homes	None observed

Direction from Property	Address	Occupant(s) Name	Current Use	Potential Environmental Conditions
West	Mobile home park along Circle Drive, Eastwind Drive, and Westwind Drive, including 41 and 43 Eastwind Drive	Mobile homes	Mobile home park	None observed

None of the surrounding properties were listed within the Environmental Data Resources, Inc. (EDR) *The EDR-Radius Map with GeoCheck®* regulatory database report (EDR database report). No further evaluation of the adjacent properties appears to be warranted.

4.0 USER-PROVIDED INFORMATION

The following section summarizes information (if any) provided by the client (User) with regard to the ESA. Documentation may be found in Appendix D or where referenced in this report.

4.1 Title Records

User provided no title records for the property.

4.2 Environmental Liens or Activity and Use Limitations

User is not aware of any environmental clean-up liens against the property that are filed or recorded under federal, tribal, state or local law. User/client is not aware of any activity and use limitations (AULs), such as engineering controls, or institutional controls, which are in place at the property and/or have been filed or recorded in a registry.

Per the scope of work approved for this assessment, DGC obtained information regarding property environmental liens or activity and use limitations from Environmental Data Resources Inc. (EDR). The lien search for APN 034-551-02 identified Soquel Union School District as the owner of the property, as recorded through a deed dated March 13, 1956 and recorded March 17, 1956. Title was received from Frank T. Blake and Anna V. Blake. The lien search on the property did not encounter any environmental liens or activity and use limitations (AULs) that have been filed against the property.

A copy of the EDR environmental lien search report is included in Appendix L.

4.3 Specialized Knowledge

User does not have any specialized knowledge or experience related to *recognized environmental conditions* associated with the property or nearby properties.

4.4 Commonly Known or Reasonably Ascertainable Information

User does not know of any specific chemicals that are present or once were present at the property. User does not know of any spills or other chemical releases that have taken place at the property. Ms. Sherree Brown, Assistant Superintendent, Business Services, with the Soquel Union Elementary School District (September 24, 2007 electronic mail), was not aware of any environmental concerns at the property, "with the exception of the fact that the area where the school will be built has been used as a garden, thus there may be pesticide usage." DGC's recommendations regarding the potential for prior pesticide and herbicide use within the community garden is discussed within Section 1.4.

User does not know of any environmental clean-ups that have taken place at the property.

4.5 Valuation Reduction for Environmental Issues

According to ASTM, in a transaction involving the purchase of a parcel of commercial real estate, "the user shall consider the relationship of the purchase price of the property to the fair market value of the property if the property was not affected by hazardous substances or petroleum products. The user should try to identify an explanation for a lower price which does not reasonably reflect fair market value if the property were not contaminated, and make a written record of such explanation. Among the factors to

consider will be the information that becomes known to the user pursuant to the Phase I Environmental Site Assessment. This standard does not require that a real estate appraisal be obtained in order to ascertain fair market value of the property."

User provided no information regarding a significant valuation reduction for environmental issues associated with the property.

4.6 Owner, Property Manager and Occupant Information

Ms. Ella Henson of Weston Miles Architects provided directions and access directions to DGC. Ms. Henson requested that property occupants not be interviewed as a part of the assessment. Thus, occupants at the Capitola Community Center building were not interviewed as part of this evaluation.

4.7 Reason for Performing Phase I ESA

The purpose of a Phase I ESA is to qualify for CERCLA liability protection for releases or threatened releases of hazardous substances. As noted within the United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries: Final Rule, "Under section 101(35)(B) of CERCLA, as amended by the Small Business Liability Relief and Brownfields Revitalization Act (Pub. L. 107–118, 115 stat. 2356, '"the Brownfields Amendments'') such persons and businesses are required to conduct all appropriate inquiries prior to or on the date on which the property is acquired. Prospective landowners who do not conduct all appropriate inquiries prior to or on the date of obtaining ownership of the property may lose their ability to claim protection from CERCLA liability as an innocent landowner, bona fide prospective purchaser, or contiguous property owner."

User indicated that this Phase I ESA was requested in connection with a financial transaction involving the property. The Phase I ESA has been requested to understand potential environmental conditions that could materially impact the operation of the business associated with the parcel or commercial real estate.

4.8 Other

The User was not aware of any indicators that point to the presence or likely presence of contamination at the property except for the potential for use of pesticides within the garden, which is discussed further within Section 1.4.

The User does not have any knowledge or experience with the property that may be pertinent to the environmental professional.

4.9 Other User Provided Documents

User provided no other documents as described in the ASTM Standard Practice E 1527-05.

5.0 RECORDS REVIEW

5.1 Standard Environmental Records

The regulatory agency database report discussed in this section, provided by EDR of Milford, Connecticut, was reviewed for information regarding reported releases of hazardous substances and petroleum products on or near the property. DGC also reviewed the "unmappable" (also referred to as "orphan") listings within the database report, cross-referencing available address information and facility names. Unmappable sites are listings that could not be plotted with confidence, but are potentially in the general area of the property based on the partial street address, city, or zip code. Any unmappable site that was identified by DGC as a being within the approximate minimum search distance from the property based on the site reconnaissance and/or cross-referencing to mapped listings, is included in the discussion within this section. The complete regulatory agency database report may be found in Appendix E.

The following is a summary of the findings of the database review.

SUMMARY OF FEDERAL, STATE AND TRIBAL DATABASE FINDINGS			
Regulatory Database	**Approx. Minimum Search Distance**	**Property Listed?**	**# Sites Listed**
Federal National Priority (NPL)	1 mile	No	0
Federal Resource Conservation and Recovery Act (RCRA), Corrective Action facilities (CORRACTS)	1 mile	No	0
Federal Delisted NPL	1 mile	No	0
Proposed NPL	1 mile	No	0
Department of Defense (DOD)	1 mile	No	0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list	½ mile	No	0
Federal CERCLIS No Further Remedial Action Planned (NFRAP)	½ mile	No	0
Federal RCRIS non- CORRACTS Treatment, Storage, and Disposal Facilities (TSD)	½ mile	No	0
Federal RCRA Generators	Property & Adjoining	No	0
Federal Institutional Control/Engineering Control Registry	Property	No	0
Federal Emergency Response Notification System (ERNS) list	Property	No	0
State and Tribal NPL (HIST Cal-Sites)	1 mile	No	0
Notify 65	1 mile	No	2
State and Tribal Brownfield Sites (ENVIROSTOR and DEED)	1 mile	No	0
DTSC State Response Sites (RESPONSE)	1 mile	No	0
State and Tribal CERCLIS (ENVIROSTOR)	1 mile	No	0
Department of Conservation Recycler Database (SWRCY)	½ mile	No	0
State and Tribal Landfill or Solid Waste Disposal Sites	½ mile	No	0
California Environmental Protection Agency "Cortese" Hazardous Waste and Substances Site List (Cortese)	½ mile	No	3

SUMMARY OF FEDERAL, STATE AND TRIBAL DATABASE FINDINGS			
Regulatory Database	**Approx. Minimum Search Distance**	**Property Listed?**	**# Sites Listed**
State and Tribal Leaking Underground Storage Tanks (LUST)	½ mile	No	4
State Water Resources Control Board Waste Management Unit Database (WMUDS/SWAT)	½ mile	No	0
State and Tribal Voluntary Cleanup Site	½ mile	No	0
California Regional Water Quality Control Board Spills, Leaks, Investigations and Cleanups (SLIC)	½ mile	No	0
DTSC Cleaner Facilities (DRYCLEANERS)	¼ mile	No	0
California Facility Inventory Database (CA FID UST)	Property & Adjoining	No	1
State Water Resources Control Board Hazardous Substance Storage Container Database (HIST UST)	Property & Adjoining	No	1
Statewide Environmental Evaluation and Planning System (SWEEPS UST)	Property & Adjoining	No	1
State and Tribal Registered Underground Storage Tanks (UST)	Property & Adjoining	No	0
California Environmental Protection Agency Facility and Manifest Data (HAZNET)	Property	No	0
Emissions Inventory (EMI)	Property	No	0
State and Tribal Institutional Control/Engineering Control Registry	Property	No	0
EDR Proprietary Manufactured Gas Plants	1 mile	No	0

5.1.1 Federal Agency Database Findings

No regulatory database listings were identified for the property, or additional facilities within the recommended search radii, within the federal environmental databases researched by EDR.

5.1.2 State Agency Database Findings

Based on distance, topography, assumed groundwater gradient, current regulatory status, and/or the absence of reported releases, none of the sites listed in the state and tribal databases are considered to represent a likely past, present or material threat of release on the property.

5.2 Additional Local Environmental Record Sources

Local Environmental Health Department

DGC contacted the Central Coast Region, Regional Water Quality Control Board (RWQCB), regarding potential environmental records for the property. According to Ms. Sue Gerdsen with the RWQCB (September 14, 2007 telephone conversation), there are no records for the property (4400 and 4455 Jade Street).

DGC reviewed the RWQCB GeoTracker web site (http://www.geotracker.swrcb.ca.gov) for information regarding the property. No data was available for the property

Local Environmental Agency

DGC contacted the Santa Cruz County Environmental Health Department (SCCEHD) regarding environmental records for the property. According to Ms. Ella Zubeth with the SCCEHD (September 11, 2007 telephone conversation), there are no records for the property (4400 and 4455 Jade Street).

Department of Toxic Substances Control (DTSC)

DGC researched the DTSC EnviroStor website (www.envirostor.dtsc.ca.gov) to investigate possible records of contaminated sites within the city and county where the property is located. No sites were identified within the DTSC database in the area of the property.

DGC further contacted the DTSC in Berkeley, California, regarding records for the property. According to the DTSC (September 11, 2007 correspondence), records are being reviewed. A copy of the response from the DTSC is included within Appendix J. If additional information is obtained that alters the conclusion of this report, an addendum will be issued. Otherwise, the data will remain on file in DGC's Pleasanton, California office.

Department of Planning and Zoning

According to the Santa Cruz County Assessor's Office (September 6, 2007 telephone conversation), the property is referenced as Assessor's Parcel Number (APN) 034-551-02. The parcel is owned by the Soquel Union Elementary School District and is approximately 9.6 acres in size. Due to the fact that the property is a public entity, the Santa Cruz County Assessor's Office had no information regarding how long the Soquel Union Elementary School District has owned the property.

According to Mr. Ryan Bane, Senior Planner with the City of Capitola, the property is zoned PF-S, defined as Public Facilities, School. The community center is zoned PF-P, defined as Public Facilities, Parks/Open Space. This is appropriate for the future and proposed use.

Compliance with the California Environmental Quality Act (CEQA, California Public Resources Code, Division 13, Environmental Protection), will be mandated within the City of Capitola planning processes. Because the Soquel Union Elementary School District is a public entity, CEQA compliance will likely be enforced. According to Mr. Bane with the City of Capitola (September 25, 2007 telephone conversation), a California Coastal Commission permit would be required. Following this, the City of Capitola would recommend that the school district comply with CEQA prior to the permitting process with the City of Capitola. CEQA documentation (initial study, negative declaration, categorical exemption, etc.) would be presented to the City of Capitola along with the permit application. According to Mr. Bane, the project is not likely to require an Environmental Impact Report (EIR) because any impacts are likely to be able to be mitigated. Mr. Bane stated that an EIR is required only when impacts cannot be mitigated.

According to Section 15300 of CEQA, *Categorical Exemptions*, "Section 21084 of the Public Resources Code requires these Guidelines to include a list of classes of projects which have been determined not to have a significant effect on the environment and which shall, therefore, be exempt from the provisions of CEQA." The proposed project would need to be evaluated under this section of CEQA in order to evaluate if the construction of the school would fall within a Categorical Exemption.

Electrical Utility Company

According to Mr. Ryan Bane with the City of Capitola, the Pacific Gas and Electric Company (PG&E) provides electrical and natural gas utilities to the property.

Water Utility

According to Mr. Ryan Bane with the City of Capitola, the Soquel Creek Water District (SCWD) provides drinking water to the area of the property. DGC reviewed the 2006 Consumer Confidence / Water Quality Report prepared by the SCWD.

According to the SCWD, "drinking water standards are established by the U.S. Environmental Protection Agency (USEPA) and California Department of Health Services (DHS)." For the 2006 Consumer Confidence / Water Quality Report, the SCWD "tested for over 150 constituents in order to ensure your water meets State and Federal drinking water standards." Water sources from the SCWD include the Purisma Aquifer and the Aromas Red Sands Aquifer. According to the SCWD, customers received water from "16 wells pumping from two underground aquifers." Both water sources meet all current drinking water standards. According to the SCWD, "delivered water represents a blend from several wells." Customers in Capitola generally receive water from the Purisma Formation.

The SCWD did not record elevated levels of lead and/or other contaminants in the drinking water. A copy of the 2006 Consumer Confidence / Annual Water Quality Report is included in Appendix L.

Sewer Utility

According to Mr. Ryan Bane, Senior Planner with the City of Capitola, Santa Cruz County provides sewer services for the area of the property.

Building Department

DGC reviewed available historical building department records obtained from the City of Capitola Building Department. A summary of the data obtained is included in Section 5.4.7.

Other Local Environmental Records Sources

County of Santa Cruz, Agricultural Commissioners Office

DGC contacted the County of Santa Cruz, Agricultural Commissioner's Office, in order to determine if there were any known records for the property. A response has not been received. If any data is received that alters the conclusions of this report, an addendum will be issued. Otherwise, the response will be maintained at DGC's Pleasanton, California office.

5.3 Physical Setting Sources

5.3.1 Topography

The property is located at an elevation of approximately 63 feet above mean sea level (AMSL), as shown on the United States Geological Survey (USGS) *Soquel Quadrangle, California – Santa Cruz County, 7.5-Minute Series Topographic* map (USGS Soquel Quadrangle map). The property is located in Township 11 South, Range 1 West, Section 15, of the Mount Diablo Baseline and Meridian.

No on-site water features were observed during the site visit. Storm water runoff from the property would likely flow to storm drains along Jade Street (north of the property) and 47th Avenue (east of the property).

A copy of the topographic map showing the site location is included in Appendix A.

5.3.2 Geology

According to the EDR database report, the rock stratigraphic unit in the area of the property is of the Cenozoic era, Tertiary system, Pliocene series. The geologic age for the area of the property is classified as stratified sequence. EDR obtains their geologic data from the Geologic Age and Rock Stratigraphic Unit Source, a USGS publication dated 1994.

DGC further reviewed the State of California, California Department of Conservation, California Geological Survey (CGS), *Generalized Geologic Map of California*, dated April 2002. This publication shows "the distribution of rocks exposed at the surface of the earth as well as other geologic information." The CGS map indicates that geology in the area of the property generally consists of Tertiary sedimentary rocks. According to CGS, this includes "sandstone, shale, and conglomerate usually deposited in relatively shallow marine water near the continental margin. These rocks are exposed mostly in the coastal regions of California." A copy of the CGS map publication is included in Appendix L.

5.3.3 Soils

According to the EDR database report, soils in the area of the property consist of Danville loams. These soils do not meet the requirements for a hydric soil.

According to EDR, Danville loams are classified as Class C soils, indicating soils with slow infiltration rates. The soils include "layers impeding downward movement of water, or soils with moderately fine or fine textures." According to the Soil Layer Information included within the EDR database report, soils consist of loams from a depth of zero to 17 inches below ground surface (bgs), clays from a depth of 17 to 29 inches bgs, and gravelly-sandy clay loams from a depth of 29 to 65 inches bgs.

EDR obtains their data from the United States Department of Agriculture (USDA), Soil Conservation Service.

5.3.4 Hydrology and Groundwater Depth

As shown on the USGS Soquel Quadrangle map (7.5-minute series), based on the mapped topography for the area of the property, the surface topography in the immediate vicinity of the property slopes towards the south and the Pacific Ocean. Therefore, local groundwater would be expected to flow from the north

(upgradient) to the south (downgradient). The federal USGS database researched within the EDR database report documented a depth to groundwater of 46.54 to 86 feet below ground surface (bgs) from wells located one-eighth to one-quarter mile from the property.

Please note that estimated groundwater levels and/or flow directions may vary due to fluctuations in precipitation, tidal influence, local usage demands, geology, underground structures, or dewatering operations, and can be more accurately determined through the installation of groundwater monitoring wells. In addition, topography is not always a reliable indicator of groundwater gradient. Actual groundwater flow direction is often locally influenced by factors such as underground structures, seasonal fluctuations, soil and bedrock geology, production wells, and other factors beyond the scope of this study. The actual groundwater flow direction under the property can be accurately determined only by installing groundwater-monitoring wells, which was beyond the scope of this project.

5.3.5 Other Physical Setting Sources

Flood Plain Map

According to the EDR database report, the facility is located on the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) identified under Community Number 060354, Panel 0001C). The EDR database report did not identify the property within a 100-year or 500-year flood zone. A copy of the FEMA FIRM was not available.

Wetlands Map

DGC reviewed the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper (http://wetlandsfws.er.usgs.gov/wtlnds/launch.html) for information regarding wetlands in the area of the property. Wetlands were not identified within the area of the property on the NWI map. The nearest wetlands to the property were identified at least one-quarter to one-half mile to the northeast and southwest. A copy of the applicable NWI wetland map is included within Appendix L.

DGC further reviewed the EDR database report. According to the EDR database report, no wetlands were identified on the property.

5.4 Historical Records Sources

The following table summarizes the findings of the research presented below pertaining to historical property and surrounding area uses.

HISTORICAL USE SUMMARY				
Period	**Identified Historical Uses**		**Source(s)**	**Intervals/Comments**
	Property	**Surrounding Area**		
Prior to 1940	Undeveloped	Undeveloped	USGS Maps	The earliest record available is a 1914 historical USGS topographic map
1941-1960	Undeveloped	Residential	Aerial Photographs City Directories USGS Maps	Eight year data gap (1948-1856). No use changes and no concerns indicated.
1961-1980	Undeveloped	Residential	Aerial Photographs City Directories USGS Maps	No concerns indicated
1981 to present	Municipal park; community center (built in 1985-1987)	Residential	Aerial Photographs City Directories USGS Maps	No concerns indicated

5.4.1 Aerial Photographs

DGC reviewed available aerial photographs of the property and surrounding areas from EDR. Available aerial photographs ranged from 1948 to 1998. The following are descriptions and interpretations from the aerial photograph review.

AERIAL PHOTOGRAPH SUMMARY		
Year	**Scale**	**Comments**
1948 and 1956	1 inch = 555 feet 1 inch = 555 feet	The property and the area currently developed with the Jade Street Park appeared to be undeveloped. The northern, eastern and western adjacent properties appeared to be undeveloped. The southern adjacent properties, across the railroad tracks, appeared to be developed with homes.
1964	1 inch = 400 feet	The property and the area currently developed with the Jade Street Park appeared to be undeveloped. The northern adjacent properties along Jade Street appeared to be undeveloped, and the northern adjacent properties along Topaz Street appeared to be developed with homes. The eastern and southern adjacent properties appeared to be developed with homes. The western adjacent properties (existing mobile home park) appeared to be beginning development with the mobile home park.
1977	1 inch = 541 feet	The property and the area currently developed with the Jade Street Park appeared to be undeveloped. All surrounding properties appeared to be developed with homes.
1982	1 inch = 690 feet	The tennis courts and grassy area of the park appeared to be developed, though the community center building did not appear to be developed. The northern, eastern, southern, and western adjacent properties all appeared to be developed with residential properties.

AERIAL PHOTOGRAPH SUMMARY		
Year	**Scale**	**Comments**
1987	1 inch = 666 feet	The property appeared to be developed with the existing community center building, baseball fields and municipal park. The tennis courts were not visible, though this may be due to the resolution and quality of the photograph. The northern, eastern, southern, and western adjacent properties all appeared to be developed with residential properties.
1998	1 inch = 666 feet	The property appeared to be developed with the existing community center building, baseball field, tennis courts, and municipal park. A trail was visible across the northern portion of Jade Street Park, where a pathway currently divides the park from the community garden. It was not evident if the community garden was present. The northern, eastern, southern, and western adjacent properties all appeared to be developed with residential properties.

The review of aerial photographs did not identify past uses indicating *recognized environmental conditions* at the property and/or surrounding area.

Copies of reproducible aerial photographs are included in Appendix F.

5.4.2 Fire Insurance Maps

A search for fire insurance maps for the property and surrounding area was conducted by EDR. No such maps for the property were available. Documentation is included in Appendix G.

5.4.3 Property Tax Files

No historical information was available for the property.

5.4.4 Land Title Records

The acquisition of recorded land title records was not required by the scope of work for the Phase I ESA.

5.4.5 Historical USGS Topographic Quadrangles

DGC reviewed available historical USGS Topographic Quadrangles for information regarding past uses of the property. DGC reviewed the USGS Capitola Quadrangle map (15-minute series); and the USGS Soquel Quadrangle map (7.5-minute series) dated 1954, 1968 (photorevised from 1954), 1980 (photorevised from 1954), and 1994 (photorevised from 1954).

On the 1914 USGS map, the property and all surrounding properties appeared to be undeveloped. The Southern Pacific Railroad (SPRR) tracks were developed to the south of the property.

On the 1954 USGS map, the property and Jade Street were not developed. The residential neighborhood to the north of the property (including Topaz Street) appeared to be developed. This area appeared to be shaded pink, indicating areas of dense development where individual structures were not shown. The residential neighborhood to the south of the property, beyond the Southern Pacific Railroad tracks, appeared to be developed with at least the streets within the residential neighborhood (shaded pink – individual structures were not depicted). The mobile home parks to the east and west of the property did not appear to be developed.

On the 1968 USGS map, the property and Jade Street Park were not developed. A trailer park was depicted to the west of the property. The northern adjacent properties, across Jade Street, were not developed. The northern adjacent properties, across Topaz Street, appeared to be shaded pink indicating areas of dense development where individual structures were not shown. The streets appeared to be as existing and residential development in the area was presumed. Railroad tracks were present to the south of the property, beyond which the area was shaded pink indicating areas of dense development where individual structures were not shown.

On the 1980 USGS map, no development was depicted on the property. A trailer park was identified to the west of the property. Railroad tracks were developed to the south of the property. The area of the property and surrounding areas were shaded pink, indicating areas of dense development where individual structures are not shown.

On the 1994 USGS map, the Jade Street Park was shown in the vicinity of the property. A trailer park was evident to the west of the property. Railroad tracks were developed to the south of the property. The area of the property and surrounding areas were shaded pink, indicating areas of dense development where individual structures are not shown.

The review of historic USGS Topographic Quadrangles did not identify past uses indicating *recognized environmental conditions* at the property and/or surrounding area.

5.4.6 City Directories

Research regarding the availability of historical city directories was conducted by EDR. The following are descriptions and interpretations from the historical city directory review. Documentation is included in Appendix G.

CITY DIRECTORY SUMMARY	
Year	**Comments**
1961 and 1966	**Property**: Street not listed in research source. **Surrounding Area**: Street not listed in research source.
1970, 1975, 1980, 1985, and 1990	**Property**: Address not listed in research source. **Surrounding Area**: Apartment building (4455 Jade Street), Apartment building (4425 Jade Street), Apartment building (4375 Jade Street).
2001 and 2006	**Property**: Capitola Community Center (4400 Jade Street). **Surrounding Area**: Apartment building (4455 Jade Street), Apartment building (4425 Jade Street), Apartment building (4375 Jade Street).

The Capitola Community Center is listed within the city directories on the property in 2001 and 2006. The review of city directories did not identify past uses indicating *recognized environmental conditions* at the property and/or surrounding areas.

5.4.7 Building Department Records

DGC reviewed available historical building department records obtained from the City of Capitola Building Department for information regarding past uses of the property. The following represents a summary of the information reviewed.

CITY OF CAPITOLA RECORDS FOR 4400 JADE STREET (COMMUNITY CENTER BUILDING)	
DATE	**PERMIT DETAIL**
August 8, 1985	Washington-Jensen & Associates memorandum noting that Granite Construction started on the grading for the building pad; on-site stockpiled soil was used to create the required fill. Noted that heating and ventilation would be through a forced-air furnace.
November 15, 1985	Building Permit #11440. New community center. Owner identified as the City of Capitola. Community center to be 5,376 square feet in size.
March 25, 1986	Letter to the City of Capitola from Washington-Jensen & Associates regarding the rough framing inspection and rough plumbing and electrical inspection.
January 27, 1987	Letter from Golden Age Nutrition (GAN) to the City of Capitola that GAN was providing meals to seniors at the property.
March 4, 1987	Certificate of Occupancy for 4400 Jade Street. Owner identified as the City of Capitola. Zoning listed as PF (Public Facilities).
August 23, 1989	Note to file. Reviewed illness problem with Rebecca Doerr at the Community Center. Advised improved ventilation and that the use of dry cleaning chemicals on the carpet should be stopped.
February 20, 1992	Electrical Permit #14204. Install 20 amp branch circuit.
June 29, 1993	Electrical Permit #14728. Install 50 amp circuit at the Jade Street Community Center. Owner identified as Soquel Elementary School District.
October 4, 2006	Re-roof. Owner identified as the Soquel Union Elementary School District. Noted the roof to consist of wood shingles over solid sheathing; planned to install composition roofing over the solid sheathing.
March 5, 2007	Letter of Permit Cancellation for the October 2006 re-roofing permit. Permit set to expire April 4, 2007.

Records at the City of Capitola indicate that the community center building on the property initiated construction in 1985 and was completed by 1987. An August 23, 1989 note within the City of Capitola Building Department file recommended that the use of dry cleaning chemicals on the carpet should be stopped. It is unknown why dry cleaning chemicals would have been used on the carpet, but it is presumed to have been for housekeeping practices. Thus, the chemicals would have been used in limited quantities and are not expected to have impacted the foundation or subsurface of the community center building.

The review of building department records did not identify past uses indicating *recognized environmental conditions* at the property and/or surrounding area.

5.4.8 Zoning/Land Use Records

DGC attempted to review available historical zoning/land use records from the City of Capitola for information regarding past uses of the property and surrounding area. The Certificate of Occupancy dated 1987 showed the property zoned as PF (Public Facilities), the same as the existing zoning on the property.

No additional historical zoning information was available for the property.

5.4.9 Prior Reports

No prior environmental reports were provided or reviewed for the property.

5.4.10 Other Historical Sources

No other historical sources were reviewed.

5.4.11 Rationale

The objective of reviewing historical resources within a Phase I ESA is to develop a history of the previous uses of the property. Historical property uses are investigated in order to establish the likelihood that past uses have led to adverse environmental conditions at the property.

Pursuant to ASTM standard E 1527, reasonably ascertainable historical sources were obtained to document use from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. Section 5.4 of this report serves to describe all identified uses for the property, the earliest date of historical resources identified by DGC, as well as reasoning for any data failure encountered within the research completed by DGC.

Per the ASTM guidelines, ***data failure*** is described "a failure to achieve the historical research objectives in 8.3.1 through 8.3.2.2 even after reviewing the *standard historical sources* in 8.3.4.1 through 8.3.4.8 that are *reasonably ascertainable* and likely to be useful. *Data failure* is one type of *data gap*." A ***data gap*** is "a lack of or inability to obtain information required by this practice despite *good faith* efforts by the *environmental professional* to gather such information. *Data gaps* may result from incompleteness in any of the activities required by this practice, including, but not limited to *site reconnaissance* (for example, an inability to conduct the *site visit*), and *interviews* (for example, an inability to interview the *key site manager*, regulatory officials, etc.)."

6.0 SITE RECONNAISSANCE

The site reconnaissance was conducted by Ms. Holly Moore, Senior Project Manager with DGC, on September 10, 2007. DGC was unaccompanied during the property inspection. The following is a summary of visual and/or physical observations of the property on the day of the site visit.

6.1 Methodology and Limiting Conditions

The site reconnaissance consisted of visual and/or physical observations of: the property and improvements; adjoining sites as viewed from the property; and, the surrounding area based on visual observations made during the trip to and from the property. Unimproved portions of the property (if any) were observed along the perimeter and in a general grid pattern in safely accessible areas. Building exteriors (if any) were observed along the perimeter from the ground, unless described otherwise. Building interiors (if any) were observed as they were made safely accessible, unless described otherwise.

DGC completed the property inspection on September 10, 2007. At the time of the inspection, the interior of the Capitola Community Center building was not accessed. However, because this building is not proposed to be impacted by the proposed school buildings, which are proposed within the area currently occupied by the community garden, no concerns are indicated.

At the time of the property inspection, the weather was warm and visibility was clear.

6.2 General Site Setting

The property is located at an elevation of approximately 63 feet above mean sea level (AMSL), as shown on the United States Geological Survey (USGS) *Soquel Quadrangle, California – Santa Cruz County, 7.5-Minute Series Topographic* map (USGS Soquel Quadrangle map). The property is located in Township 11 South, Range 1 West, Section 15, of the Mount Diablo Baseline and Meridian.

No on-site water features were observed during the site visit. Storm water runoff from the property would likely flow to storm drains along Jade Street (north of the property) and 47th Avenue (east of the property).

A copy of the topographic map showing the site location is included in Appendix A.

6.3 Interior and Exterior Observations

6.3.1 Current Uses(s) of the Property

The property is currently developed with one single-story building occupied by the Capitola Community Center (4400 Jade Street). The property is further developed with a children's playground, baseball field, tennis courts (two), a municipal park (Jade Street Park), and a community garden. A building containing men's and women's restrooms is located on the eastern portion of the parking lot located on the side of the community center building. During the property inspection on September 10, 2007, the interior of the community center building was not accessible to DGC. DGC observed the property features from the exterior and perimeter of the property.

According to Ms. Ella Henson with Weston Miles Architects Inc., the proposed Opal Cliffs school site includes the area of the existing community garden. This existing community garden contains plats of land used by various individuals within the community for gardens. According to Ms. Henson, the school will consist of multiple modular buildings and will eventually expand to include a non-modular multi-purpose building. According to Ms. Sherree Brown, Assistant Superintendent, Business Services, with the Soquel Union Elementary School District (September 24, 2007 electronic mail), the school that is proposed includes "a Preschool/Early Childhood Education Center with the final plans of it becoming a fully functioning K-5 school. There will be two buildings to start with and then we will add as we grow."

According to a site plan produced by the Soquel Union School District for the proposed school buildings, an approximately 5,200 square foot play area with a play structure will be located at the northwestern portion of the area. One building containing two classrooms and the administration offices will be located on the western portion of the area that is currently the community garden. An additional building, containing four classrooms for kindergarten and first grade students and a restroom, will be located within the northern portion of the area that is currently the community garden. A courtyard and approximately 3,700 square foot play area will be developed in the center, with an additional classroom building proposed along the eastern portion of the area that is currently the community garden. Future plans include development of additional buildings to the south on the area that is currently a grass field. A copy of the plan provided by Weston Miles Architects, on behalf of the Soquel Union Elementary School District, in included as Figure 2d.

No environmental concerns were noted at the property.

6.3.2 Past Uses(s) of the Property

The property was undeveloped prior to construction of the community center building and establishment of the municipal park (Jade Street Park) between 1985 and 1987.

6.3.3 Hazardous Substances and Petroleum Products in Connection with Identified Uses

To the extent that present uses were identified that use, treat, store, dispose or, or generate hazardous substances and petroleum products on the property, DGC did not observe use and/or storage of hazardous materials on the property.

6.3.4 Storage Tanks

No USTs or ASTs were observed on the property as of DGC's site inspection on September 10, 2007.

6.3.5 Odors

DGC did not note any strong, pungent or noxious odors.

6.3.6 Pools of Liquid

DGC did not note any pools of liquid on the property.

6.3.7 Drums

DGC did not observe any drums or containers (as small as 5 gallons in size) that may contain hazardous substances or petroleum products on the property.

6.3.8 Other Petroleum Products

DGC did not observe the use, storage or disposal of other petroleum products in transformers, hydraulic lifts or other containers on the property.

6.3.9 Unidentified Substance Containers

DGC did not observe any open or damaged containers containing unidentified substances suspected of being hazardous substances or petroleum products.

6.3.10 Polychlorinated Biphenyls (PCBs)

DGC did not observe evidence of the use, storage or disposal of PCB-containing transformers, hydraulic lifts, or other equipment on the property.

One pad-mounted transformer was located along the eastern side of the parking lot adjacent to the community center building (immediately north of the men's and women's restroom building). Transformer T-958 was noted to be located on a concrete pad. Any leaks or releases from the transformer would be the responsibility of the utility (PG&E). Based on the installation date of the transformer (presumed to have been installed when the property was developed between 1985 and 1987), oils within the transformer are not anticipated to contain PCBs.

6.4 Interior Observations

6.4.1 Heating and Cooling

The means of heating and cooling the building(s) on the property are described below:

Heating – Unknown; the interior of the community center building was not inspected, as the proposed activities will not impact this area.

Cooling – Unknown; the interior of the community center building was not inspected, as the proposed activities will not impact this area.

6.4.2 Stains or Corrosion

DGC did not observe any stains or corrosion on the floors, walls, or ceilings at the property.

6.4.3 Drains and Sumps

DGC did not observe any floor drains or sumps at the property.

6.5 Exterior Observations

6.5.1 Waste Pits, Ponds or Lagoons

To the extent visually and/or physically observed, DGC did not observe evidence of waste pits, ponds or lagoons on the property or adjoining properties.

6.5.2 Stained Soil or Pavement

To the extent visually and/or physically observed or identified from interviews, DGC did not observe any stained soil or pavement on the exterior of the property.

6.5.3 Stressed Vegetation

To the extent visually and/or physically observed or identified from interviews, DGC observed no evidence of stressed vegetation (other than from insufficient water) on the property.

6.5.4 Non-hazardous Solid Waste

To the extent visually and/or physically observed or identified from interviews, DGC did not observe any areas, mounds, or depressions that are apparently filled or graded by non-natural causes or filled with fill of unknown origin suggesting trash or other solid waste disposal.

DGC observed evidence of the generation, storage or disposal of nonhazardous solid waste on the property as summarized below.

NONHAZARDOUS SOLID WASTE SUMMARY TABLE						
Type of Waste	**Generation Process**	**Quantity**	**Type of Storage**	**Location**	**Disposal/ Removal Method & Frequency**	**Evidence of Release?**
Municipal solid waste	Garbage	Two municipal waste dumpsters	Dumpster	Within parking area on the eastern side of the community center building	Waste Management / Once per week	No

Given the type of storage and kind of waste stored at the property, none of the waste listed above is identified as a *recognized environmental condition*.

6.5.5 Stormwater Management System and Waste Water

DGC observed evidence of wastewater generated, treated or discharged (including sanitary sewage and stormwater) on the property or to adjoining properties as summarized below.

WASTEWATER SUMMARY TABLE			
Type of Wastewater	**Generation Process**	**Treatment System?**	**Discharged To?**
Commercial sanitary sewage	Restrooms	No	Santa Cruz County.
Stormwater	Stormwater runoff	No	Santa Cruz County.

Wastewater is not considered to represent an environmental concern to the property.

6.5.6 Wells

DGC did not observe evidence of wells on the property.

6.5.7 Septic Systems

DGC did not observe evidence of a septic system on the property.

6.5.8 Landfills

DGC did not observe evidence of landfills at or near the property.

6.5.9 Waste Generation, Storage and Disposal

GENERATED WASTES			
Type of Waste	**Generation Process**	**Type of Storage**	**Disposal/Removal Method & Frequency**
Non-hazardous Solid			
Municipal trash	Routine site operations	Municipal waste dumpsters	Waste Management / Once per week
Non-hazardous Liquid			
Municipal sewage	Typical practices	Not Applicable	Santa Cruz County.
Hazardous Solid or Liquid			
None	Not Applicable	Not Applicable	Not Applicable
Non-hazardous Regulated Medical			
None	Not Applicable	Not Applicable	Not Applicable

7.0 INTERVIEWS

DGC completed interviews with persons knowledgeable about the property in order to obtain information regarding *recognized environmental conditions* in connection with the property. A summary of the interviews completed is presented below.

INTERVIEW SUMMARY				
Role	**Name**	**Title/Company**	**Years Assoc. With Property**	**Interview Type**
Owner	Sherree Brown	Assistant Superintendent / Soquel Union Elementary School District	3 years	Electronic mail
Site Contact / Coordinator	Ella Henson	Weston Miles Architects Inc.	Unknown	Telephone Electronic Mail
Local Govt. Official	Ryan Bane	Senior Planner / City of Capitola	N/A	In person Telephone

Interviews for this assessment were conducted in person, by telephone, or in writing, as noted and described below.

The person(s) interviewed were asked by DGC to be as specific as reasonably feasible in answering questions. The person(s) interviewed were asked to answer in good faith and to the extent of their knowledge. It should be noted that as noted by ASTM, while the environmental professional conducting the interview(s) "has an obligation to ask questions, in many instances the persons to whom the questions are addressed will have no obligation to answer them."

7.1 Interview with Owner

DGC interviewed Ms. Sherree Brown, Assistant Superintendent, Business Services, with the Soquel Union Elementary School District (September 24, 2007 electronic mail). Ms. Brown was not aware of any environmental concerns at the property, "with the exception of the fact that the area where the school will be built has been used as a garden, thus there may be pesticide usage." DGC's recommendations regarding the potential for prior pesticide and herbicide use within the community garden is discussed within Section 1.4.

Ms. Brown was not aware of the presence of any underground storage tanks (USTs) at the property. According to Ms. Brown, "the District would not have installed any such items at that site." Ms. Brown was not aware of historic dry cleaning uses on the property. Further, Ms. Brown was not aware of any environmental liens that have been filed against the property. Ms. Brown was not aware of any environmental clean-up activities that have occurred at the property or of any environmental concerns for the property.

A copy of the electronic mail from Ms. Brown is included in Appendix J.

7.2 Interview with Past Owner(s)

Per ASTM, interviews with past owners, operators, and occupants of the property who are likely to have material information regarding the potential for contamination at the property shall be conducted to the extent that they have been identified and that the information likely to be obtained is not duplicative of information already obtained from other sources.

No prior owners were interviewed for this assessment.

7.3 Interview with User

Per ASTM, "if the person to be interviewed is the user (the person on whose behalf the Phase I Environmental Site Assessment is being conducted), the user has an obligation to answer all questions posed by the person conducting the interview, in good faith, to the extent of his or her actual knowledge or to designate a key site manager to do so. If answers to questions are unknown or partially unknown to the user or such key site manager, this interview section of the Phase I Environmental Site Assessment shall not thereby be deemed incomplete."

DGC interviewed Ms. Ella Henson with Weston Miles Architects, Inc., regarding the proposed activities at the property. According to Ms. Henson, the proposed school will be built in the area where the existing community garden is located. The school will consist of multiple modular buildings and will eventually expand to include a non-modular multi-purpose building.

DGC further interviewed Ms. Sherree Brown with the Soquel Union Elementary School District regarding the property, as summarized within Section 7.1.

7.4 Interview with Key Site Manager

DGC conducted the property inspection on September 10, 2007. At the time of the property inspection, a key site manager was not available for comment. DGC interviewed the property owner (Ms. Sherree Brown of the Soquel Union Elementary School District) following the property inspection.

7.5 Interviews with Major Occupants

Per the ASTM guidelines, if a property has five or fewer current occupants, a reasonable attempt shall be made to interview a representative of each of them. If there are more than five current occupants, a reasonable attempt shall be made to interview the major occupant(s) and those other occupants whose operations are likely to indicate recognized environmental conditions.

The site inspection was completed by DGC on September 10, 2007. At the time of the inspection, DGC was unaccompanied and no occupants were interviewed per the request of the owner/User.

7.6 Interviews with Local Government Officials

The local government officials that were interviewed regarding the property are discussed within Section 5.2, Additional Local Environmental Record Sources.

7.7 Interviews with Others

The EPA final rule for All Appropriate Inquires the following related to interviews completed for the Phase I ESA:

> *"to include interviewing the current owner and occupant of the subject property. In addition, the rule provides that the inquiry of the environmental professional include interviews of additional individuals, including current and past facility managers with relevant knowledge of the property, past owners, occupants, or operators of the subject property, or employees of current and past occupants of the subject property, as necessary to meet the rule's objectives and in accordance with the performance factors. A primary purpose of the interviews portion of the all appropriate inquiries is to obtain information regarding the current and past ownership and uses of the property, and obtain information regarding the potential environmental conditions of the property. The final rule does not prescribe particular questions that must be asked during the interview."*

DGC did not interview any of the owners of the adjacent properties.

8.0 FINDINGS

The following summarizes known or suspected environmental conditions in connection with the property based on information collected during the ESA. DGC also provides a conclusion and rationale regarding whether or not any environmental conditions have been discovered that may be considered representative of a *recognized environmental condition*, a *historical recognized environmental condition*, or a *de minimus* condition in connection with the property.

- The results of this assessment have revealed *recognized environmental conditions* associated with the property, as summarized within Section 1.4.

- The results of this assessment have revealed no *historical recognized environmental conditions* associated with the property.

- The results of this assessment have revealed no de minimus conditions associated with the property.

There were no data gaps that significantly affected our ability to identify recognized environmental conditions associated with the property. Except for limitations and exceptions discussed in Section 2.4, this Phase I ESA complies with ASTM Standard E 1527-05. No additional services beyond the scope of the ASTM Standard E 1527-05 were conducted as part of this assessment.

9.0 OPINION

For each condition identified in Section 8.0, DGC provides an opinion of the impact on the property based on an evaluation of the results of record reviews, site reconnaissance and environmental sampling issues as discussed in this report and provides recommendations.

- The area of the property to be developed with the Opal Cliffs school includes an area of the property that has been occupied as a community garden since at least 1998. Future development of the school includes construction of buildings to the south of the community garden, within the existing soccer field / grass area. Pesticides and herbicides may have been used in these areas in the past. Therefore, this represents a *recognized environmental condition*. Recommendations are included within Section 1.4.

- There are no buildings on the area of the property to be developed with the school. Further, the property is located at least one-half to one mile south of Highway 1 (Cabrillo Highway). Thus, it is not anticipated that lead deposited from freeway/interstate activities would impact the property. The northern adjacent properties are developed with homes, which have been present since at least the 1960's. Those homes may contain lead paint on their exteriors. Because the property is proposed to be developed with an elementary school and playground areas, DGC recommends sampling of the soils for metals including lead. Further details are provided within Section 1.4.

10.0 CONCLUSIONS

DGC has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 for the property located at 4400 Jade Street in Capitola, Santa Cruz County, California, described throughout this report as the property. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report.

- The results of this assessment have revealed *recognized environmental conditions* associated with the property, as summarized within Section 1.4.

- The results of this assessment have revealed no *historical recognized environmental conditions* associated with the property.

- The results of this assessment have revealed no de minimus conditions associated with the property.

11.0 DEVIATIONS

This work was performed in general conformance with the scope and limitations of ASTM E 1527. Unless limited sampling or physical testing of materials was expressly provided for in the scope of work, the conclusions in this report were based solely on a visual inspection and on readily available records, interviews, and other secondary sources. DGC has made no independent investigation of the accuracy of these secondary sources and has assumed them to be accurate and complete. DGC does not warrant the accuracy or completeness of information provided by secondary sources. In addition, DGC does not warrant that contamination that may exist on the property has been discovered, that the property is suitable for any particular purpose, or that the property is clean or free of liability. Any cost estimates are based on general comparisons with past projects of similar scope and size, and actual cost or design-phase estimates may vary substantially from these estimates.

12.0 ADDITIONAL (NON-ASTM) SERVICES

Per the ASTM guidelines, any additional services contracted between the user and environmental professional, including a broader scope of assessment, more detailed conclusions, liability/risk evaluations, recommendation for Phase II testing, remediation techniques, etc., are beyond the scope of the ASTM practice and should only be included in the report if so specified in the terms of the engagement between the user and the environmental professional.

12.1 Asbestos-Containing Material (ACM)

In accordance with Section 112 of the Clean Air Act, the EPA established the National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. According to the EPA, the purpose of NESHAP "is to protect the public health by minimizing the release of asbestos when facilities which contain asbestos-containing materials (ACMs) are demolished or renovated." The NESHAP regulations specify "work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units)." In accordance with NESHAP, suspect ACM within the property building, including PACM, vinyl flooring, plaster, floor tiles, mastics, drywall, roofing materials, and other suspect ACMs, should be properly assessed prior to disturbance from renovation or demolition activities.

There are no buildings on the area of the property to be developed with the school (community garden). DGC further reviewed the State of California Department of Conservation, Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*, dated August 2000. A copy of the document is included in Appendix L. Based on a review of this document, the property is not located within an area considered to contain natural occurrences of asbestos within soils. Asbestos is not considered to represent an environmental concern at the property.

12.2 Radon

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. Elevated radon levels are most often associated with properties built over granite bedrock or decomposed granite. The EPA guidance action level for annual residential exposure to radon is 4.0 picoCuries per liter of air (pCi/L). The guidance action level is not a regulatory requirement for private owners of commercial real estate, but is commonly used for comparison purposes to suggest whether further action at a building may be prudent.

DGC's review of published radon data indicates that the property is located in an area of moderate propensity with regard to the potential for elevated levels of radon gas. Santa Cruz County is listed as being within EPA Radon Zone 2, where average indoor levels are expected to be between 2 and 4 pCi/L. Additional EPA statistics for Santa Cruz County report results for nine short term tests, with 89% of results measured below 4 pCi/L and 11% of results measured between four and 20 pCi/L.

Based on the undeveloped nature of the area of the property to be developed with the school, no additional investigations are recommended at this time. If any alterations to property use are proposed (i.e. residential), radon sampling should be performed to ensure that levels do not exceed EPA guidance levels.

12.3 Lead in Drinking Water

According to the United States Environmental Protection Agency (EPA), "Lead is rarely found in source water, but enters tap water through corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder." However, "new homes are also at risk: even legally "lead-free" plumbing may contain up to 8 percent lead." According to the EPA, the most common concern is with brass or chrome-plated brass faucets and fixtures "which can leach significant amounts of lead into the water, especially hot water."

DGC confirmed with the SCWD that the municipally supplied water meets or exceeds all drinking water standards, including those for lead. Based on the fact that the water supplied to the property area is from the municipality, lead in drinking water testing was not conducted for this ESA.

12.4 Lead-Based Paint (LBP)

According to Section 1004 of the Residential Lead-Based Paint Hazard Reduction Act of 1992, a lead-based paint (LBP) hazard means "any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency." Based upon this definition, intact LBP would not be considered a lead hazard. However, the condition of the paint should be monitored and maintained to ensure that it does not deteriorate and become a hazard.

There are no buildings on the area of the property to be developed with the school. Further, the property is located at least one-half to one mile south of Highway 1 (Cabrillo Highway). Thus, it is not anticipated that lead deposited from freeway/interstate activities would impact the property. The northern adjacent properties are developed with homes, which have been present since at least the 1960's. Those homes may contain lead paint on their exteriors.

According to the United States Environmental Protection Agency (EPA), many homes built before 1978 contain lead-based paint. Lead can be found in homes and in soils. According to the EPA, childhood lead poisoning is a "major environmental health problem in the U.S." Lead can get into your body by eating paint chips or soil that contains lead, breathing in lead dust, etc. According to the EPA, lead is more dangerous to children that adults because "babies and young children often put their hands and other objects in their mouths", children's growing bodies absorb more lead, and "children's brains and nervous system are more sensitive to the damaging effects of lead." Because the property is proposed to be developed with an elementary school and playground areas, DGC recommends sampling of the soils for metals including lead. Further details are provided within Section 1.4.

12.5 High Voltage Power Lines

High voltage power lines were not observed at the property. High voltage power lines are located in the vicinity coursing along Jade Street and to the north for the homes along Topaz Street, within approximately 75 feet of the property.

12.6 Additional User Requested Conditions

No additional User Requested Conditions were requested/addressed as part of this ESA.

13.0 REFERENCES

ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E 1527-05.

ASTM Guide for Environmental Site Assessments: Transaction Screen Process, ASTM Designation E1528-06.

Bane, Ryan. Senior Planner with the City of Capitola. In-person interview, September 10, 2007. Telephone interview, September 25, 2007.

Brown, Sherree. Owner (Soquel Union Elementary School District). Electronic mail interview. September 24, 2007.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA" or "Superfund"), as amended by Superfund Amendments and Reauthorization Act of 1986 ("SARA") and Small Business Liability Relief and Brownfields Revitalization Act of 2002 ("Brownfields Amendments"), 42 U.S.C. §§9601 *et seq.*

Chapter 1 EPA, Subchapter J-Superfund, Emergency Planning, and Community Right-To-Know Programs, 40 C.F.R Parts 300-399, United States Environmental Protection Agency.

California Regional Water Quality Control Board, Central Coast Region. File review request, August 29, 2007. Reply from Ms. Sue Gerdsen on September 14, 2007 of no records.

City of Capitola Building Department. File Review. September 10, 2007.

Department of Toxic Substances Control, correspondence dated September 11, 2007, and DTSC ENVIROSTOR web site review.

Environmental Data Resources, Inc. *The EDR-Radius Map with GeoCheck*, Inquiry Number 2023268.2s, dated September 6, 2007.

Environmental Data Resources, Inc. *The EDR Aerial Photo Decade Package*, Inquiry Number 2023268.5, dated September 7, 2007.

Environmental Data Resources, Inc. *The EDR Historical Topographic Map Report*, Inquiry Number 2023268.4, dated September 7, 2007.

Environmental Data Resources, Inc. *The EDR City Directory Abstract*, Inquiry Number 2023268.6, dated September 11, 2007.

Environmental Data Resources, Inc. *Certified Sanborn Map Report*, Inquiry Number 2023268.3, dated September 6, 2007

Environmental Data Resources, Inc. *The EDR Environmental Lien Search Report*, Project Number L07-08127, dated September 21, 2007.

Emergency Planning and Community Right-To-Know Act of 1986 ("EPCRA"), 42 U.S.C. §§11001 *et seq*.

Freedom of Information Act, 5 U.S.C. §552, as amended by Public Law No. 104-231, 110 Stat. 3048.

Federal Emergency Management Agency (FEMA), National Flood Insurance Program, Flood Insurance maps.

National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300, United States Environmental Protection Agency.

Resource Conservation and Recovery Act (sometimes also referred to as the Solid Waste Disposal Act), as amended ("RCRA"), 42 U.S.C §6901 *et seq*.

Santa Cruz County Assessor's Office. Telephone interview. September 6, 2007.

Santa Cruz County Environmental Health Department. Response of No Records. September 11, 2007.

Standards and Practices for All Appropriate Inquiries: Final Rule, 40 C.F.R. Part 312, United States Environmental Protection Agency.

United States Geological Survey (USGS) Topographic maps.

United States Department of the Interior, Fish and Wildlife Service (USFWS) National Wetlands Inventory map.

14.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in § 312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By

Holly D. Moore

Holly D. Moore, CSST, REA
Senior Project Manager /
Environmental Professional

Reviewed By

William A. Mitchell

William A. Mitchell, PG, REA
Professional Geologist / Environmental Professional
Senior Reviewer

15.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Resumes for applicable environmental professionals involved within this project are included within Appendix I.

16.0 APPENDICES

Appendix A - Site Vicinity Map
Appendix B - Site Plan
Appendix C - Site Photographs
Appendix D - User Provided Documentation
Appendix E - Regulatory Database Report
Appendix F - Aerial Photographs
Appendix G - Historical Research Documentation
Appendix H - Prior Reports
Appendix I - Resumes
Appendix J - Records of Communication
Appendix K - Laboratory Reports
Appendix L - Other Supporting Documentation
Appendix M - Terminology

APPENDIX A

SITE VICINITY MAP

SOURCE: USGS SOQUEL QUADRANGLE, CALIFORNIA (7.5 MINUTE SERIES) TOPOGRAPHIC MAP. IMAGE FROM MAPTECH MAPQUEST.

DIABLO GREEN CONSULTING

3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE:1:24,000	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE VICINITY

FIGURE 1
SITE VICINITY MAP

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

APPENDIX B

SITE PLAN

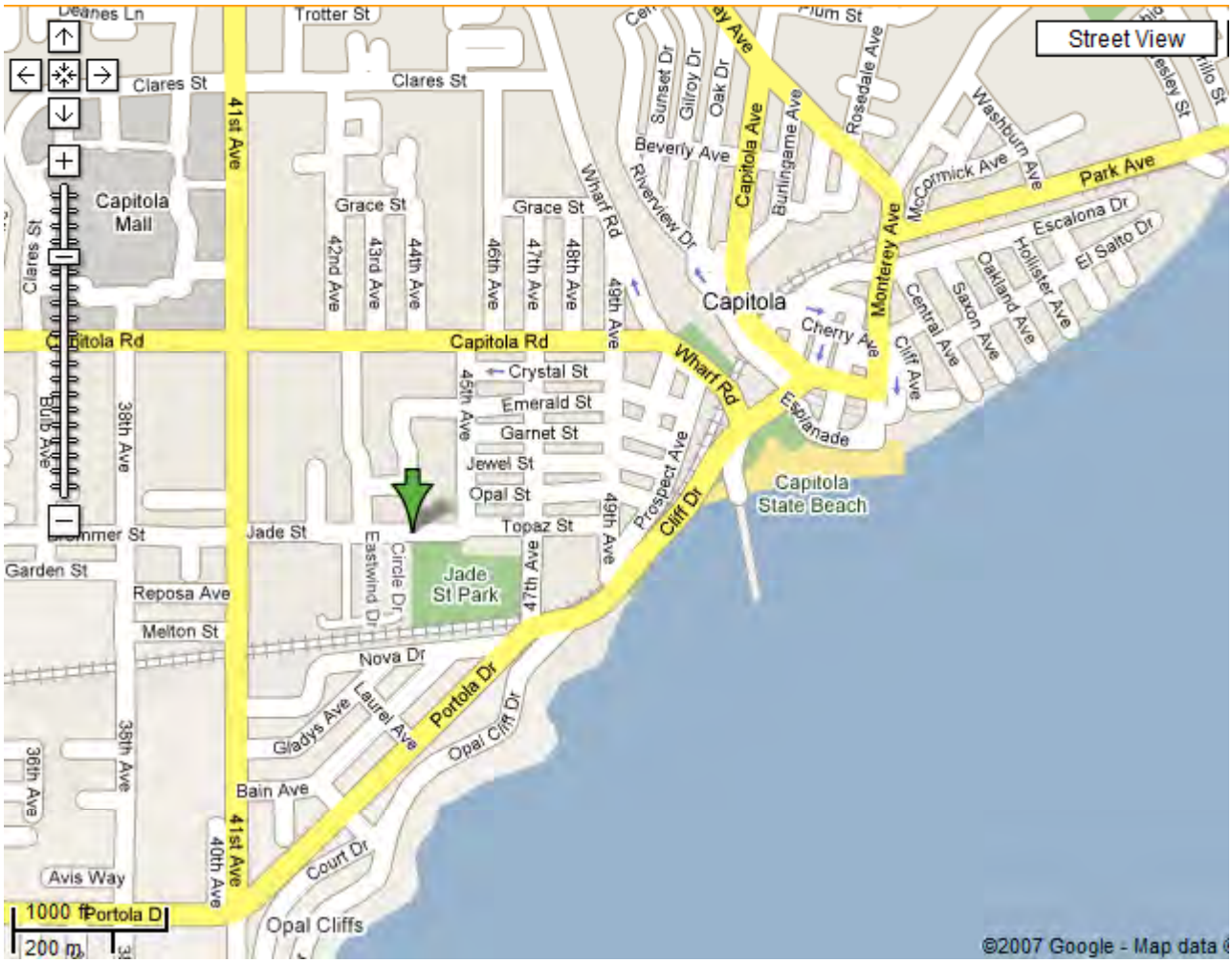


IMAGE SOURCE: GOOGLE MAPS, 2007

DIABLO GREEN CONSULTING

3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2a
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

IMAGE SOURCE: GOOGLE EARTH

DIABLO GREEN CONSULTING
3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2b
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

IMAGE SOURCE: GOOGLE MAPS, 2007

DIABLO GREEN CONSULTING
3942 Valley Avenue, Ste J
Pleasanton, CA 94566
(925) 846-9800

PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

FIGURE 2c
SITE PLAN

OPAL CLIFFS
4400 JADE STREET
CAPITOLA, CALIFORNIA

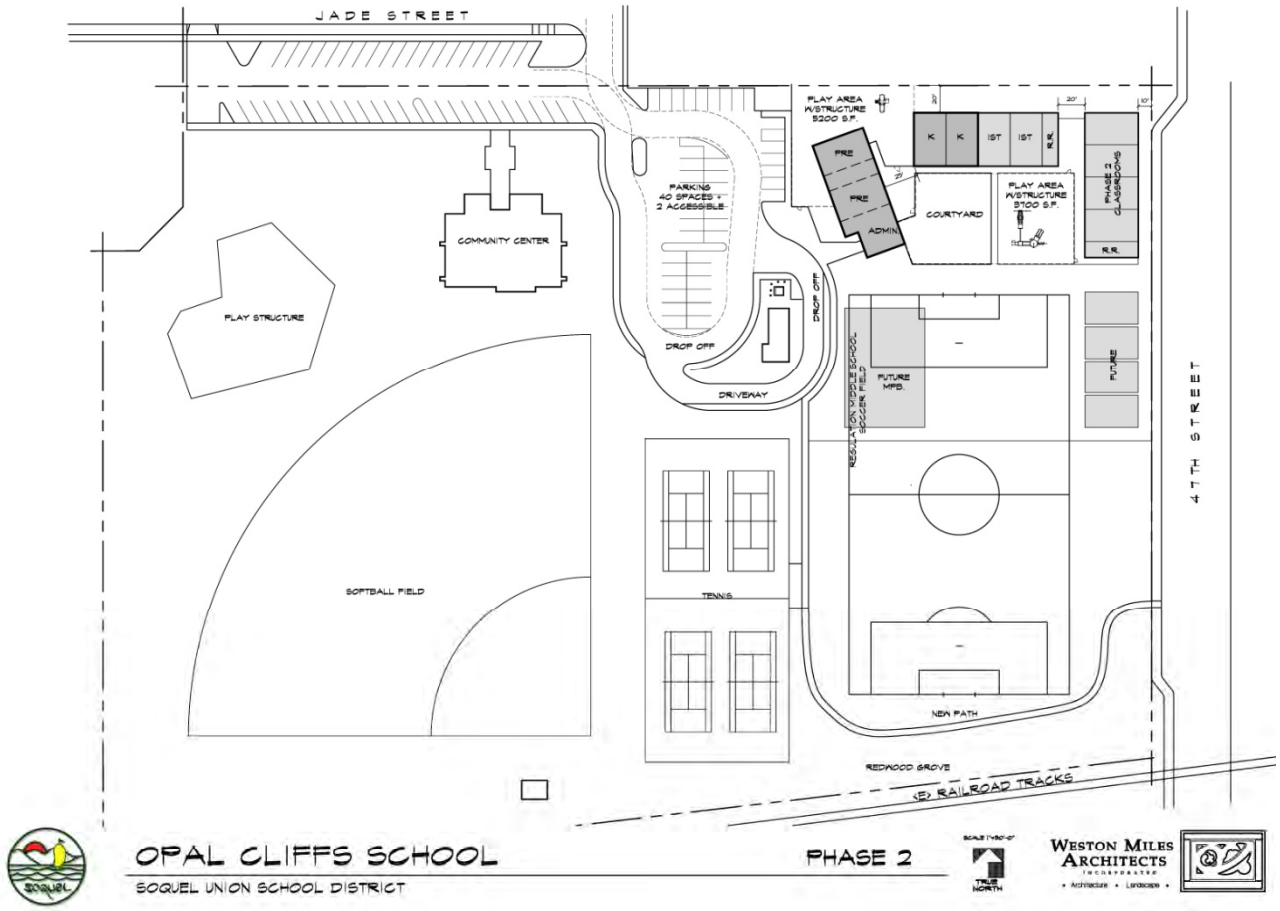


IMAGE SOURCE: SOQUEL UNION ELEMENTARY SCHOOL DISTRICT

DIABLO GREEN CONSULTING	3942 Valley Avenue, Ste J Pleasanton, CA 94566 (925) 846-9800	FIGURE 2d **SITE PLAN** OPAL CLIFFS 4400 JADE STREET CAPITOLA, CALIFORNIA
PROJECT NO: 07.10029.0001		
DESIGNED BY: HDM	SCALE: NTS	REVIEWED BY: HDM
DRAWN BY: HDM	DATE: 09/2007	FILE: SITE PLAN

APPENDIX C

SITE PHOTOGRAPHS

Photo 1: Capitola Community Center at 4400 Jade Street.

Photo 2. Parking lot between the community center and the community garden.

Photo 3: Grassy area of the Jade Street Park, to the south of the community garden.

Photo 4: Community garden from the west.

Photo 5: Signage at the Capitola Community Gardens.

Photo 6: Capitola Community Gardens.

Photo 7: Community garden from the south, looking towards the back of homes located along Topaz Street.

Photo 8: Restroom building located off the parking lot between the community center building and community garden.

Photo 9: Transformer located on the property.

Photo 10: Tennis courts on the property.

Photo 11: Playground area on the western portion of the property.

Photo 12: View looking towards the grass area from the east.

Photo 13: Mobile home parking lot to the immediate west of the property playground and community center building.

Photo 14: Apartment building to the north of the property across Jade Street.

Photo 15: Apartment building to the north of the property across Jade Street.

Photo 16: Home along Topaz Street, backs to the community garden.

Photo 17: Community center building.

Photo 18: Railroad tracks to the south of the property.

APPENDIX D

USER PROVIDED DOCUMENTATION

THIS SECTION INTENTIONALLY LEFT BLANK

APPENDIX E

REGULATORY DATABASE REPORT

The EDR Radius Map
with GeoCheck®

Opal Cliffs
4400/4455 Jade Street
Capitola, CA 95010

Inquiry Number: 2023268.2s

September 06, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	6
Orphan Summary	19
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-9
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	A-34

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2007 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

4400/4455 JADE STREET
CAPITOLA, CA 95010

COORDINATES

Latitude (North):	36.970300 - 36˚ 58' 13.1''
Longitude (West):	121.960300 - 121˚ 57' 37.1''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	592548.1
UTM Y (Meters):	4091879.5
Elevation:	63 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	36121-H8 SOQUEL, CA
Most Recent Revision:	1994

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
Delisted NPL..... National Priority List Deletions
NPL LIENS..... Federal Superfund Liens
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information
RCRA-SQG..... Resource Conservation and Recovery Act Information

EXECUTIVE SUMMARY

ERNS ..... Emergency Response Notification System
HMIRS ..... Hazardous Materials Information Reporting System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
DOD ..... Department of Defense Sites
FUDS ..... Formerly Used Defense Sites
US BROWNFIELDS ..... A Listing of Brownfields Sites
CONSENT ..... Superfund (CERCLA) Consent Decrees
ROD ..... Records Of Decision
UMTRA ..... Uranium Mill Tailings Sites
ODI ..... Open Dump Inventory
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS ..... Section 7 Tracking Systems
LIENS 2 ..... CERCLA Lien Information
RADINFO ..... Radiation Information Database
US CDL ..... Clandestine Drug Labs
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
ICIS ..... Integrated Compliance Information System
LUCIS ..... Land Use Control Information System
DOT OPS ..... Incident and Accident Data
PADS ..... PCB Activity Database System
MLTS ..... Material Licensing Tracking System
MINES ..... Mines Master Index File
FINDS ..... Facility Index System/Facility Registry System
RAATS ..... RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HIST Cal-Sites ..... Historical Calsites Database
CA BOND EXP. PLAN ..... Bond Expenditure Plan
SCH ..... School Property Evaluation Program
Toxic Pits ..... Toxic Pits Cleanup Act Sites
SWF/LF ..... Solid Waste Information System
CA WDS ..... Waste Discharge System
WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
SLIC ..... Statewide SLIC Cases
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
LIENS ..... Environmental Liens Listing
CHMIRS ..... California Hazardous Material Incident Report System
DEED ..... Deed Restriction Listing
VCP ..... Voluntary Cleanup Program Properties
CLEANERS ..... Cleaner Facilities
WIP ..... Well Investigation Program Case List
CDL ..... Clandestine Drug Labs
RESPONSE ..... State Response Sites
HAZNET ..... Facility and Manifest Data
EMI ..... Emissions Inventory Data
ENVIROSTOR ..... EnviroStor Database
HAULERS ..... Registered Waste Tire Haulers Listing

TRIBAL RECORDS

INDIAN RESERV ..... Indian Reservations

EXECUTIVE SUMMARY

INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there are 3 Cortese sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SHELL STATION	***1649 41ST AVE***	***1/4 - 1/2 NW***	***3***	***7***
CAPITOLA MALL/BROWN BULB	***41ST AVE***	***1/4 - 1/2 NNW***	***4***	***9***

Lower Elevation	Address	Dist / Dir	Map ID	Page
CAPITOLA PUMPING STATION	***END OF ESPLANADE***	***1/4 - 1/2 ENE***	***6***	***16***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 07/10/2007 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SHELL STATION	***1649 41ST AVE***	***1/4 - 1/2 NW***	***3***	***7***
Facility Status: Pollution Characterization				
CAPITOLA MALL/BROWN BULB	***41ST AVE***	***1/4 - 1/2 NNW***	***4***	***9***
Facility Status: Case Closed				

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
BILL DEAN, INC #4	***3800 CAPITOLA RD***	***1/4 - 1/2 WNW***	***5***	***12***
Facility Status: Leak being confirmed				

Lower Elevation	Address	Dist / Dir	Map ID	Page
CAPITOLA PUMPING STATION	***END OF ESPLANADE***	***1/4 - 1/2 ENE***	***6***	***16***
Facility Status: Case Closed				

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ROBERT L. LAVERTY	***4413 NOVA DR***	***1/8 - 1/4 SSW***	***A1***	***6***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ROBERT L. LAVERTY	4413 NOVA DR	1/8 - 1/4 SSW	A2	6

SWEEPS: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ROBERT L. LAVERTY	***4413 NOVA DR***	***1/8 - 1/4 SSW***	***A1***	***6***

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there are 2 Notify 65 sites within approximately 1 mile of the target property.

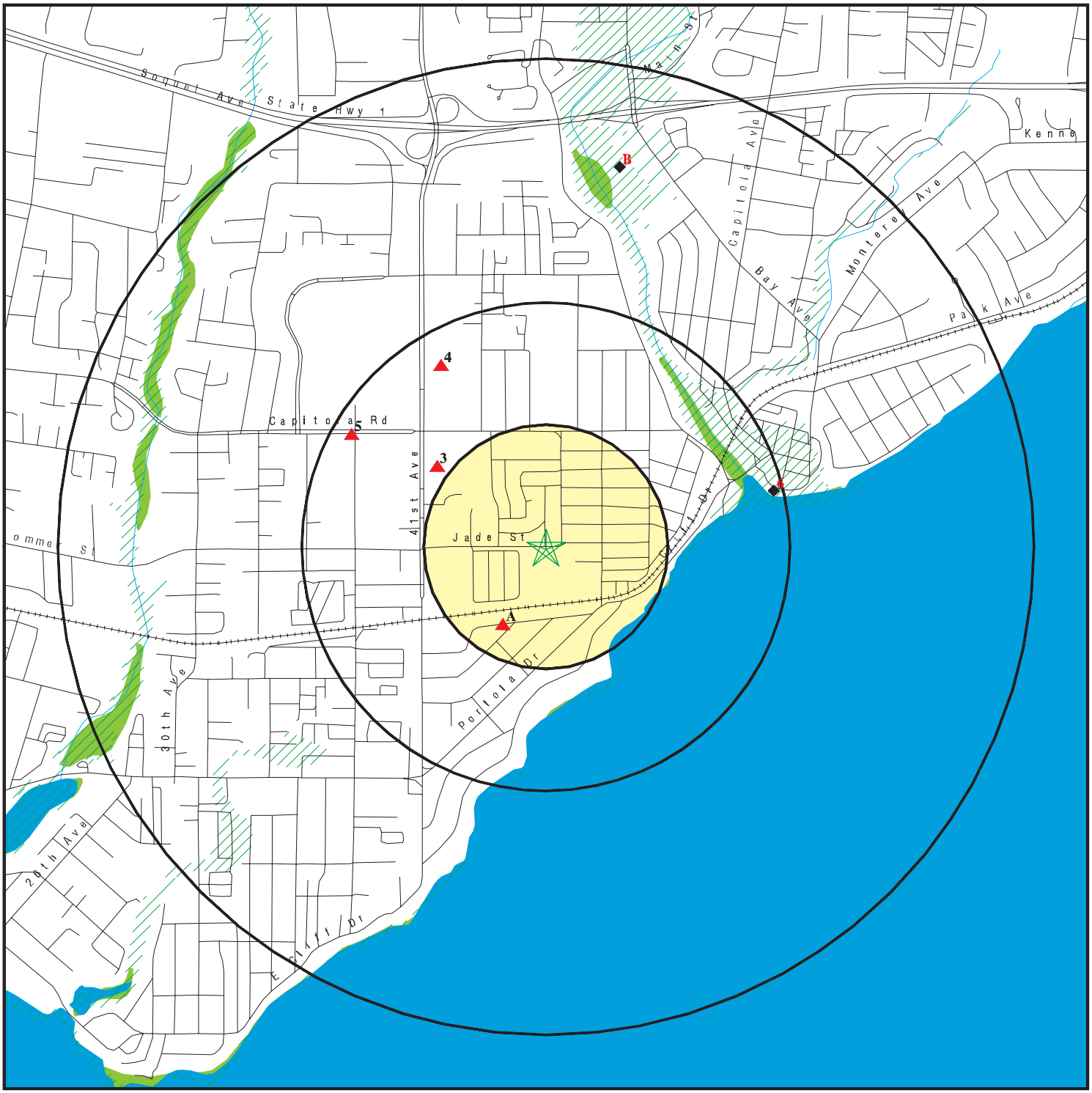
Lower Elevation	Address	Dist / Dir	Map ID	Page
ARCO GAS STATION	819 BAY AVENUE	1/2 - 1 N	B7	18
ARCO GAS STATION	819 BAY AVENUE	1/2 - 1 N	B8	18

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
CAPITOLA PUMPING STATION	SWEEPS UST
PINE MOUNTAIN LUMBER COMPANY	Notify 65, LUST, ENVIROSTOR
SCCSD RIO PUMPING STATION	LUST, Cortese
MCMILLIAN RESIDENCE	CERC-NFRAP
NEW BRIGHTON PUMPING STATION	UST

OVERVIEW MAP - 2023268.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

0 1/4 1/2 1 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Opal Cliffs	CLIENT: Diablo Green Consulting
ADDRESS: 4400/4455 Jade Street Capitola CA 95010	CONTACT: Holly Moore
LAT/LONG: 36.9703 / 121.9603	INQUIRY #: 2023268.2s
	DATE: September 06, 2007 8:01 pm

Copyright © 2007 EDR, Inc. © 2007 Tele Atlas Rel. 07/2006.

DETAIL MAP - 2023268.2s

0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Opal Cliffs	CLIENT: Diablo Green Consulting
ADDRESS: 4400/4455 Jade Street Capitola CA 95010	CONTACT: Holly Moore
LAT/LONG: 36.9703 / 121.9603	INQUIRY #: 2023268.2s
	DATE: September 06, 2007 8:01 pm

Copyright © 2007 EDR, Inc. © 2007 Tele Atlas Rel. 07/2006.

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
Hist Cal-Sites		1.000	0	0	0	0	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		0.500	0	0	3	NR	NR	3

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	4	NR	NR	4
CA FID UST		0.250	0	1	NR	NR	NR	1
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	1	NR	NR	NR	1
AST		0.250	0	0	NR	NR	NR	0
LIENS		TP	NR	NR	NR	NR	NR	0
SWEEPS UST		0.250	0	1	NR	NR	NR	1
CHMIRS		TP	NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	2	NR	2
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
RESPONSE		1.000	0	0	0	0	NR	0
HAZNET		TP	NR	NR	NR	NR	NR	0
EMI		TP	NR	NR	NR	NR	NR	0
ENVIROSTOR		1.000	0	0	0	0	NR	0
HAULERS		TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
SSW
1/8-1/4
956 ft.

Relative:
Equal

Actual:
63 ft.

ROBERT L. LAVERTY
4413 NOVA DR
SANTA CRUZ, CA 95062

CA FID UST **S101625345**
SWEEPS UST **N/A**

Site 1 of 2 in cluster A

CA FID UST:

Facility ID:	44001528
Regulated By:	UTNKI
Regulated ID:	00042064
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4084753753
Mail To:	Not reported
Mailing Address:	4413 NOVA DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SANTA CRUZ 95062
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	42064
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	44-000-042064-000001
Actv Date:	Not reported
Capacity:	350
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	LEADED
Number Of Tanks:	1

A2
SSW
1/8-1/4
956 ft.

Relative:
Equal

Actual:
63 ft.

ROBERT L. LAVERTY
4413 NOVA DR
SANTA CRUZ, CA 95062

HIST UST **U001602037**
N/A

Site 2 of 2 in cluster A

HIST UST:

Region:	STATE
Facility ID:	00000042064
Tank Num:	001
Container Num:	1001
Year Installed:	Not reported
Tank Capacity:	00000350
Facility Type:	Other
Other Type:	PERSONAL
Total Tanks:	0001

ROBERT L. LAVERTY (Continued) **U001602037**

Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None
Contact Name:	Not reported
Telephone:	4084753753
Owner Name:	ROBERT L. LAVERTY
Owner Address:	4413 NOVA DR
Owner City,St,Zip:	SANTA CRUZ, CA 95062

---

3 **SHELL STATION** **LUST** **S101304404**
NW **1649 41ST AVE** **Cortese** **N/A**
1/4-1/2 **CAPITOLA, CA 95010**
1464 ft.

Relative:
Higher

Actual:
66 ft.

LUST:

Region:	STATE
Case Type:	Other ground water affected
Cross Street:	CAPITOLA ROAD
Enf Type:	13267R
Funding:	Not reported
How Discovered:	Subsurface Monitoring
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	UNK
Global Id:	T0608742250
Stop Date:	Not reported
Confirm Leak:	2003-04-30 00:00:00
Workplan:	Not reported
Prelim Assess:	2003-05-02 00:00:00
Pollution Char:	2006-12-21 00:00:00
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	2005-01-20 00:00:00
Close Date:	Not reported
Discover Date:	2002-09-05 00:00:00
Enforcement Dt:	Not reported
Release Date:	2002-09-30 00:00:00
Review Date:	Not reported
Enter Date:	Not reported
MTBE Date:	2003-12-17 00:00:00
GW Qualifier:	=
Soil Qualifier:	Not reported
Max MTBE GW ppb:	92
Max MTBE Soil ppb:	Not reported
County:	44
Org Name:	Not reported
Reg Board:	Central Coast Region
Status:	Pollution Characterization
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	CAVOL CAMPOSNA
RP Address:	20945 SO. WILMINGTON AVE.
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	19
MTBE Fuel:	1

SHELL STATION (Continued) **S101304404**

MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: TAS
Staff Initials: REB
Lead Agency: Regional Board
Local Agency: 44000
Hydr Basin #: Not reported
Beneficial: MUN
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: 3514
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: MAX MTBE = 1.0 MG/KG (ONE SOIL SAMPLE - ALL OTHERS ND) MW-1, MW-4 DRY WELLS. 2,000 FT. TO NEAREST PUBLIC WELL. PROPOSAL FOR OFFSEIT WELL MW-5. INSTALLED? BELTZ WELL NO. 9 SOUTH OF SITE 2,500 FT.

LUST:
Region: 3
Regional Board: Central Coast Region
Release Date: 01/29/1987
Enter Date: 02/02/1987
Case Number: 637
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: CAPITOLA
Local Agency: 44000
Substance: Unleaded Gasoline
Discovered Date: 12/17/86
How Discovered: Tank Closure
Stop Date: 12/17/86
How Stopped: Not reported
Leak Source: Tank
Leak Cause: Structure Failure
Lead Agency: Regional Board
Case Type: O
Status: Case Closed
Staff Initials: HDC
Review Date: 02/09/1994
Confirm Leak: 12/17/86
Workplan: 4/14/87
Prelim Assess: 5/15/87
Pollution Char: 02/18/1987
Remedial Plan: 12/31/87
Remedial Action: 1/19/88
Monitoring: 02/03/1989
Enforcement Type: 222
Enforce Date: 1/1/65
Close Date: 9/27/95

SHELL STATION (Continued) **S101304404**

Pilot Program: UST
Interim Action: 0
Funding: R
MTBE Class: *
Max MTBE Grnd Wtr: Not reported
Max MTBE Soil: Not reported
Max MTBE Data: / /
MTBE Tested: NT
Lat/Long: 36.9726545 / -121.9650113
Soil Qualifier: Not reported
Grnd Wtr Qualifier: Not reported
Mtbe Concentratn: 0
Mtbe Fuel: 1
Org Name: Not reported
Facility County: Santa Cruz
Global ID: T0608700267
Basin Plan: 4.13
Beneficial: Not reported
Priority: 3A3
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Local Case Num: Not reported
Quantity: Not reported
Abatement Method: U
Operator: Not reported
Water System: BILL KOCHER
Well Name: BELTZ WELL 06
Distance From Well: 0
Assigned Name: 11S/01W-16R03 M
Summary: SEMIANNUAL REPORTS CONTINUE. ALL MWS ND 11/93 9/27/95 CLOSED

Cortese:
Region: CORTESE
Facility Addr2: 1649 41ST AVE

---

4 NNW 1/4-1/2 2270 ft. **CAPITOLA MALL/BROWN BULB 41ST AVE CAPITOLA, CA 95010** **LUST Cortese** **S102426317 N/A**

Relative: Higher

Actual: 79 ft.

LUST:
Region: STATE
Case Type: Soil only
Cross Street: CLARES
Enf Type: Not reported
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: Corrosion
Leak Source: Tank
Global Id: T0608700205
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: 1987-10-13 00:00:00

CAPITOLA MALL/BROWN BULB (Continued) **S102426317**

Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 1988-01-13 00:00:00
Discover Date: 1987-09-08 00:00:00
Enforcement Dt: Not reported
Release Date: 1987-09-29 00:00:00
Review Date: 1990-09-09 00:00:00
Enter Date: 1987-10-17 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 44
Org Name: Not reported
Reg Board: Central Coast Region
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: Not reported
RP Address: Not reported
Interim: No
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: HDC
Staff Initials: UST
Lead Agency: Local Agency
Local Agency: 44000
Hydr Basin #: SOQUEL VALLEY (3-1)
Beneficial: Not reported
Priority: 0
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: 474
Qty Leaked: Not reported
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: SOIL TESTS TAKEN/ANALYZED & REPORTED TO S. CRUZ ENVIRON HEALTH DEPT. SOIL REMOVED & AERATED AND PUT BACK. CLOSED CASE

LUST:
Region: 3
Regional Board: Central Coast Region
Release Date: 09/29/1987
Enter Date: 10/17/1987
Case Number: 474

CAPITOLA MALL/BROWN BULB (Continued) **S102426317**

Responsible Party:	Not reported
RP Address:	Not reported
Contact:	Not reported
Cross Street:	CLARES
Local Agency:	44000
Substance:	Gasoline
Discovered Date:	9/8/87
How Discovered:	Tank Closure
Stop Date:	Not reported
How Stopped:	Not reported
Leak Source:	Tank
Leak Cause:	Corrosion
Lead Agency:	Local Agency
Case Type:	S
Status:	Case Closed
Staff Initials:	HDC
Review Date:	09/09/1990
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	10/13/1987
Remedial Plan:	Not reported
Remedial Action:	Not reported
Monitoring:	/ /
Enforcement Type:	Not reported
Enforce Date:	Not reported
Close Date:	1/13/88
Pilot Program:	UST
Interim Action:	0
Funding:	Not reported
MTBE Class:	*
Max MTBE Grnd Wtr:	Not reported
Max MTBE Soil:	Not reported
Max MTBE Data:	/ /
MTBE Tested:	NT
Lat/Long:	36.9764435 / -121.9548709
Soil Qualifier:	Not reported
Grnd Wtr Qualifier:	Not reported
Mtbe Concentratn:	0
Mtbe Fuel:	1
Org Name:	Not reported
Facility County:	Santa Cruz
Global ID:	T0608700205
Basin Plan:	4.13
Beneficial:	Not reported
Priority:	0
UST Cleanup Fund ID:	Not reported
Suspended:	Not reported
Local Case Num:	Not reported
Quantity:	Not reported
Abatement Method:	Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Operator:	Not reported
Water System:	Not reported
Well Name:	Not reported
Distance From Well:	0
Assigned Name:	Not reported
Summary:	SOIL TESTS TAKEN/ANALYZED & REPORTED TO S. CRUZ ENVIRON HEALTH DEPT.

CAPITOLA MALL/BROWN BULB (Continued) **S102426317**

SOIL REMOVED & AERATED AND PUT BACK.
CLOSED CASE

Cortese:
Region: CORTESE
Facility Addr2: Not reported

5
WNW
1/4-1/2
2430 ft.

Relative:
Higher

Actual:
77 ft.

BILL DEAN, INC #4 **LUST** **S102342860**
3800 CAPITOLA RD **SWEEPS UST** **N/A**
CAPITOLA, CA 95010

LUST:
Region: STATE
Case Type: Undefined
Cross Street: Not reported
Enf Type: Not reported
Funding: 0
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: UNK
Leak Source: UNK
Global Id: T0608700140
Stop Date: Not reported
Confirm Leak: 1975-01-01 00:00:00
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Discover Date: 1997-02-03 00:00:00
Enforcement Dt: Not reported
Release Date: 1997-03-24 00:00:00
Review Date: Not reported
Enter Date: 1997-04-09 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 44
Org Name: Not reported
Reg Board: Central Coast Region
Status: Leak being confirmed
Chemical: Waste Oil
Contact Person: Not reported
Responsible Party: JERRY ANDERSON
RP Address: P.O. BOX 22740
Interim: No
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: TAS

BILL DEAN, INC #4 (Continued) **S102342860**

Staff Initials: UST
Lead Agency: Local Agency
Local Agency: 44000
Hydr Basin #: SOQUEL VALLEY (3-1)
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: 2820
Qty Leaked: Not reported
Abate Method: Unknown - action taken at site is unknown
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 3
Regional Board: Central Coast Region
Release Date: 03/24/1997
Enter Date: 04/18/1997
Case Number: 2825
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: 38TH AVE
Local Agency: 44000
Substance: Waste Oil
Discovered Date: 2/3/97
How Discovered: Tank Closure
Stop Date: Not reported
How Stopped: Not reported
Leak Source: UNK
Leak Cause: UNK
Lead Agency: Local Agency
Case Type: U
Status: Leak being confirmed
Staff Initials: BUC
Review Date: / /
Confirm Leak: 1/1/75
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: / /
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Enforcement Type: Not reported
Enforce Date: Not reported
Close Date: Not reported
Pilot Program: UST
Interim Action: 0
Funding: 0
MTBE Class: *

BILL DEAN, INC #4 (Continued) **S102342860**

Max MTBE Grnd Wtr:	Not reported
Max MTBE Soil:	Not reported
Max MTBE Data:	/ /
MTBE Tested:	NRQ
Lat/Long:	36.9736495 / -121.9673334
Soil Qualifier:	Not reported
Grnd Wtr Qualifier:	Not reported
Mtbe Concentratn:	0
Mtbe Fuel:	0
Org Name:	Not reported
Facility County:	Santa Cruz
Global ID:	T0608700142
Basin Plan:	4.13
Beneficial:	Not reported
Priority:	3A3
UST Cleanup Fund ID:	Not reported
Suspended:	Not reported
Local Case Num:	Not reported
Quantity:	Not reported
Abatement Method:	Unknown - action taken at site is unknown
Operator:	Not reported
Water System:	BILL KOCHER
Well Name:	BELTZ WELL 06
Distance From Well:	0
Assigned Name:	11S/01W-16R03 M
Summary:	Not reported

Region:	3
Regional Board:	Central Coast Region
Release Date:	03/24/1997
Enter Date:	04/09/1997
Case Number:	2820
Responsible Party:	JERRY ANDERSON
RP Address:	P.O. BOX 22740
Contact:	Not reported
Cross Street:	Not reported
Local Agency:	44000
Substance:	Waste Oil
Discovered Date:	2/3/97
How Discovered:	Tank Closure
Stop Date:	Not reported
How Stopped:	Not reported
Leak Source:	UNK
Leak Cause:	UNK
Lead Agency:	Local Agency
Case Type:	U
Status:	Leak being confirmed
Staff Initials:	BUC
Review Date:	/ /
Confirm Leak:	1/1/75
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	/ /
Remedial Plan:	Not reported
Remedial Action:	Not reported
Monitoring:	/ /
Enforcement Type:	Not reported

BILL DEAN, INC #4 (Continued) **S102342860**

Enforce Date:	Not reported
Close Date:	Not reported
Pilot Program:	UST
Interim Action:	0
Funding:	0
MTBE Class:	*
Max MTBE Grnd Wtr:	Not reported
Max MTBE Soil:	Not reported
Max MTBE Data:	/ /
MTBE Tested:	NRQ
Lat/Long:	36.9736495 / -121.9673334
Soil Qualifier:	Not reported
Grnd Wtr Qualifier:	Not reported
Mtbe Concentratn:	0
Mtbe Fuel:	0
Org Name:	Not reported
Facility County:	Santa Cruz
Global ID:	T0608700140
Basin Plan:	4.13
Beneficial:	Not reported
Priority:	Not reported
UST Cleanup Fund ID:	Not reported
Suspended:	Not reported
Local Case Num:	Not reported
Quantity:	Not reported
Abatement Method:	Unknown - action taken at site is unknown
Operator:	Not reported
Water System:	BILL KOCHER
Well Name:	BELTZ WELL 06
Distance From Well:	0
Assigned Name:	11S/01W-16R03 M
Summary:	Not reported

SWEEPS UST:

Status:	A
Comp Number:	9631
Number:	1
Board Of Equalization:	44-034374
Ref Date:	12-21-93
Act Date:	05-24-94
Created Date:	10-02-92
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	44-000-009631-000001
Actv Date:	12-21-93
Capacity:	550
Tank Use:	OIL
Stg:	W
Content:	WASTE OIL
Number Of Tanks:	1

6 ENE 1/4-1/2 2542 ft.

CAPITOLA PUMPING STATION
END OF ESPLANADE
CAPITOLA, CA 95010

LUST **S102426318**
Cortese **N/A**

Relative: Lower

Actual: 9 ft.

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	OM
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0608700204
Stop Date:	Not reported
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	1987-09-10 00:00:00
Remed Action:	Not reported
Monitoring:	1988-01-13 00:00:00
Close Date:	1988-10-07 00:00:00
Discover Date:	1987-01-22 00:00:00
Enforcement Dt:	Not reported
Release Date:	1987-03-24 00:00:00
Review Date:	1988-10-07 00:00:00
Enter Date:	1987-07-01 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	44
Org Name:	Not reported
Reg Board:	Central Coast Region
Status:	Case Closed
Chemical:	Diesel
Contact Person:	Not reported
Responsible Party:	Not reported
RP Address:	Not reported
Interim:	No
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
Staff:	HDC
Staff Initials:	UST
Lead Agency:	Local Agency
Local Agency:	44000
Hydr Basin #:	SOQUEL VALLEY (3-1)
Beneficial:	Not reported
Priority:	0
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Local Case #:	Not reported

CAPITOLA PUMPING STATION (Continued) **S102426318**

Case Number: 473
Qty Leaked: Not reported
Abate Method: U
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: TANK INSTALLED IN 1983. @ INSTALLATION TANK/PIPING PASSED ALL TESTS FOR LEAKS; IN '86 TESTED & NO LEAKS. HASN'T BEEN ANY SPILLS/LEAKS @ SITE KNOWN OF. SAMPLED M.W. & SAMPLES SHOWEDNO CONTAMINATION. CASE CLOSED.....

LUST:
Region: 3
Regional Board: Central Coast Region
Release Date: 03/24/1987
Enter Date: 07/01/1987
Case Number: 473
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: Not reported
Local Agency: 44000
Substance: Diesel
Discovered Date: 1/22/87
How Discovered: OM
Stop Date: Not reported
How Stopped: Not reported
Leak Source: UNK
Leak Cause: UNK
Lead Agency: Local Agency
Case Type: S
Status: Case Closed
Staff Initials: HDC
Review Date: 10/07/1988
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: / /
Remedial Plan: 9/10/87
Remedial Action: Not reported
Monitoring: 01/13/1988
Enforcement Type: Not reported
Enforce Date: Not reported
Close Date: 10/7/88
Pilot Program: UST
Interim Action: 0
Funding: Not reported
MTBE Class: *
Max MTBE Grnd Wtr: Not reported
Max MTBE Soil: Not reported
Max MTBE Data: / /
MTBE Tested: NRQ
Lat/Long: 36.9764435 / -121.9548709
Soil Qualifier: Not reported
Grnd Wtr Qualifier: Not reported

CAPITOLA PUMPING STATION (Continued) **S102426318**

Mtbe Concentratn: 0
Mtbe Fuel: 0
Org Name: Not reported
Facility County: Santa Cruz
Global ID: T0608700204
Basin Plan: 4.13
Beneficial: Not reported
Priority: 0
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Local Case Num: Not reported
Quantity: Not reported
Abatement Method: U
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: TANK INSTALLED IN 1983. @ INSTALLATION TANK/PIPING PASSED ALL TESTS FOR LEAKS; IN '86 TESTED & NO LEAKS. HASN'T BEEN ANY SPILLS/LEAKS @ SITE KNOWN OF. SAMPLED M.W. & SAMPLES SHOWEDNO CONTAMINATION. CASE CLOSED.....

Cortese:
Region: CORTESE
Facility Addr2: END OF ESPLANADE

B7 **ARCO GAS STATION** **Notify 65** **S100178265**
North **819 BAY AVENUE** **N/A**
1/2-1 **CAPITOLA, CA 93041**
4185 ft.

Site 1 of 2 in cluster B

Relative:
Lower

Actual:
28 ft.

Notify 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93041

B8 **ARCO GAS STATION** **Notify 65** **S100178263**
North **819 BAY AVENUE** **N/A**
1/2-1 **CAPITOLA, CA 93041**
4185 ft.

Site 2 of 2 in cluster B

Relative:
Lower

Actual:
28 ft.

Notify 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 93041

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CAPITOLA	S106924005	CAPITOLA PUMPING STATION	CAPITOLA ESPLANADE	95010	SWEEPS UST
CAPITOLA	U003786122	NEW BRIGHTON PUMPING STATION	NEW BRIGHTON STATE BEACH	95010	UST
CAPITOLA	1003878632	MCMILLIAN RESIDENCE	503 B PINE ST	95010	CERC-NFRAP
RIO DEL MAR	S103291443	SCCSD RIO PUMPING STATION	CLIFF DR	95062	LUST, Cortese
YREKA	S100178482	PINE MOUNTAIN LUMBER COMPANY	HIGHWAY 3	95062	Notify 65, LUST, ENVIROSTOR

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/18/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/20/2007
Date Data Arrived at EDR: 05/03/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 63

Source: EPA
Telephone: N/A
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/20/2007
Date Data Arrived at EDR: 05/03/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 53

Source: EPA
Telephone: N/A
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/23/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 70

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 06/20/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/21/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 37

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 06/15/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/26/2007
Date Data Arrived at EDR: 08/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/13/2006
Date Data Arrived at EDR: 06/28/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 56

Source: EPA
Telephone: (415) 495-8895
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 01/24/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 47

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/05/2007
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 27

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/18/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 04/20/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 29

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 04/20/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 29

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 09/20/2006
Date Made Active in Reports: 11/22/2006
Number of Days to Update: 63

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 07/09/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/11/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 07/16/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 44

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/08/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 57

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/08/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 82

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 07/05/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 06/19/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 71

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 06/15/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 71

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 06/15/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Annually

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 06/11/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 05/14/2007
Date Data Arrived at EDR: 05/30/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 36

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Varies

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 06/29/2007
Date Data Arrived at EDR: 07/02/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 58

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 06/22/2007
Next Scheduled EDR Contact: 07/16/2007
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/15/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 06/29/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 08/01/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 04/12/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/05/2007
Date Data Arrived at EDR: 04/25/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 30

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/09/2007
Date Data Arrived at EDR: 06/28/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/28/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/12/2007
Date Data Arrived at EDR: 05/17/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 49

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/12/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Biennially

USGS WATER WELLS: National Water Information System (NWIS)

This database consists of well records in the United States. Available site descriptive information includes well location information (latitude and longitude, well depth, site use, water use, and aquifer).

Date of Government Version: 03/25/2005
Date Data Arrived at EDR: 03/25/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: USGS
Telephone: N/A
Last EDR Contact: 03/25/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PWS: Public Water System Data

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 02/24/2000
Date Data Arrived at EDR: 04/27/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA
Telephone: N/A
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: N/A

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/30/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/11/2007
Date Data Arrived at EDR: 06/13/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 16

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 06/13/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 06/20/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 8

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 08/01/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 06/25/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/10/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/03/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/17/2007
Date Data Arrived at EDR: 07/18/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 22

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 07/17/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/13/2007
Date Data Arrived at EDR: 03/14/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 23

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/27/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/10/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 14

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/25/2007
Date Data Arrived at EDR: 06/26/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 29

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/25/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/07/2007
Date Data Arrived at EDR: 05/08/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 17

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 05/01/2007
Date Data Arrived at EDR: 05/01/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/23/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 07/02/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/03/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/30/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 9

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 07/27/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/07/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

RESPONSE: State Response Sites
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/30/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/20/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 23

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 07/20/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Varies

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 06/07/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 21

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/11/2007
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/30/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 05/31/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 35

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 03/20/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 28

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/23/2007
Date Data Arrived at EDR: 05/24/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 42

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/18/2007
Date Data Arrived at EDR: 06/18/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 03/20/2007
Date Data Arrived at EDR: 04/16/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 28

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 06/06/2007
Date Data Arrived at EDR: 06/07/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 28

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 06/18/2007
Date Data Arrived at EDR: 06/18/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 17

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 05/23/2007
Date Data Arrived at EDR: 05/24/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 42

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 05/31/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 35

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

FEDERAL RECORDS

COLLEGES: Integrated Postsecondary Education Data

The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PUBLIC SCHOOLS: Public Schools

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/13/2004
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education statistics
Telephone: 202-502-7300
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: N/A

PRIVATE SCHOOLS: Private Schools of the United States

The National Center for Education Statistics' primary database on private school locations in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/07/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

NURSING HOMES: Directory of Nursing Homes

Information on Medicare and Medicaid certified nursing homes in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/11/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: N/A
Telephone: 800-568-3282
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

MEDICAL CENTERS: Provider of Services Listing

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health & Human Services.

Date of Government Version: 06/01/1998
Date Data Arrived at EDR: 11/10/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
Last EDR Contact: 01/12/2007
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

HOSPITALS: AHA Hospital Guide

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/19/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: American Hospital Association
Telephone: 800-242-2626
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/24/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/24/2007
Date Data Arrived at EDR: 04/26/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 11

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/31/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 29

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/27/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 07/17/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 23

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 06/21/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/31/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 05/15/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 21

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 08/17/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 06/11/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 05/14/2007
Date Data Arrived at EDR: 05/15/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 41

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/29/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 27

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 08/27/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 05/08/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 47

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 07/24/2007
Date Data Arrived at EDR: 07/27/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 13

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 07/24/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/24/2007
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 07/24/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 17

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 06/18/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/21/2007
Date Data Arrived at EDR: 05/22/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 05/21/2007
Date Data Arrived at EDR: 05/22/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 34

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/23/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 37

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/24/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 36

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/27/2007
Date Data Arrived at EDR: 06/29/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 41

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Date Data Arrived at EDR: 05/18/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 29

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 07/05/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2006
Date Data Arrived at EDR: 01/03/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 06/27/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 20

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 07/03/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 06/08/2007
Date Data Arrived at EDR: 06/12/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 17

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 06/08/2007
Date Data Arrived at EDR: 06/12/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 43

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 04/06/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 04/24/2007
Number of Days to Update: 14

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/30/2007
Date Data Arrived at EDR: 07/30/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 10

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/10/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 30

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 06/25/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/25/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 06/11/2007
Date Data Arrived at EDR: 06/12/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 17

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 04/18/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 19

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 09/24/2007
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/09/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 31

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 07/02/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 06/22/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 7

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/12/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2006
Date Data Arrived at EDR: 09/05/2006
Date Made Active in Reports: 10/05/2006
Number of Days to Update: 30

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/21/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/05/2007
Date Data Arrived at EDR: 06/21/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 8

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/12/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/28/2007
Date Data Arrived at EDR: 04/24/2007
Date Made Active in Reports: 05/07/2007
Number of Days to Update: 13

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/11/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 04/30/2007
Date Data Arrived at EDR: 05/15/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 41

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 06/15/2007
Date Made Active in Reports: 08/20/2007
Number of Days to Update: 66

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 06/13/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 04/01/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 05/08/2007
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/03/2007
Next Scheduled EDR Contact: 10/01/2007
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/26/2006
Date Data Arrived at EDR: 11/29/2006
Date Made Active in Reports: 01/05/2007
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/30/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 81

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 09/10/2007
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/18/2007
Next Scheduled EDR Contact: 09/17/2007
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 06/08/2007
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/08/2007
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

© 2007 Tele Atlas North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

OPAL CLIFFS
4400/4455 JADE STREET
CAPITOLA, CA 95010

TARGET PROPERTY COORDINATES

Latitude (North):	36.97030 - 36˚ 58' 13.1''
Longitude (West):	121.9603 - 121˚ 57' 37.1''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	592548.1
UTM Y (Meters):	4091879.5
Elevation:	63 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	36121-H8 SOQUEL, CA
Most Recent Revision:	1994

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

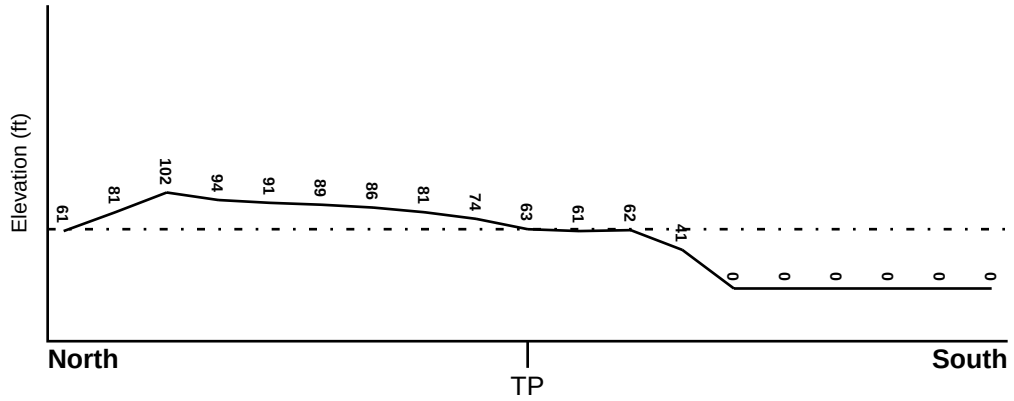
TOPOGRAPHIC INFORMATION

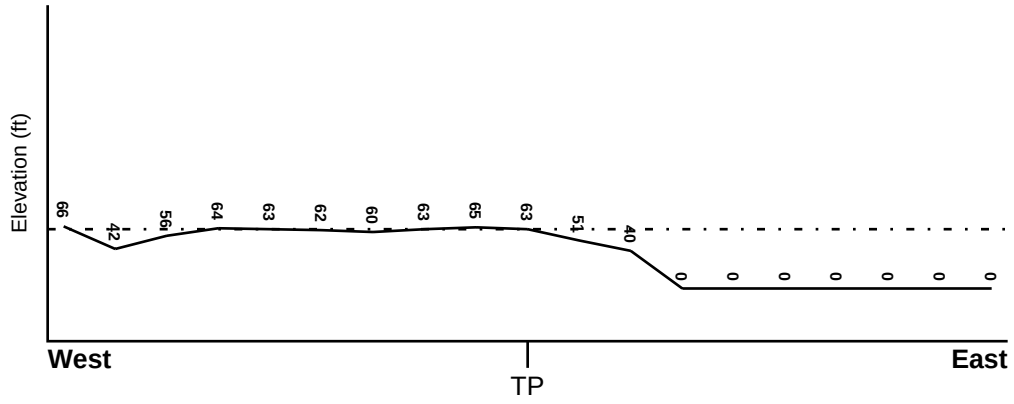
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

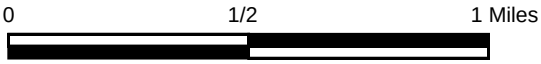
General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 63 ft.



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SANTA CRUZ, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0603540001C

Additional Panels in search area: 0603530355B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SOQUEL	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

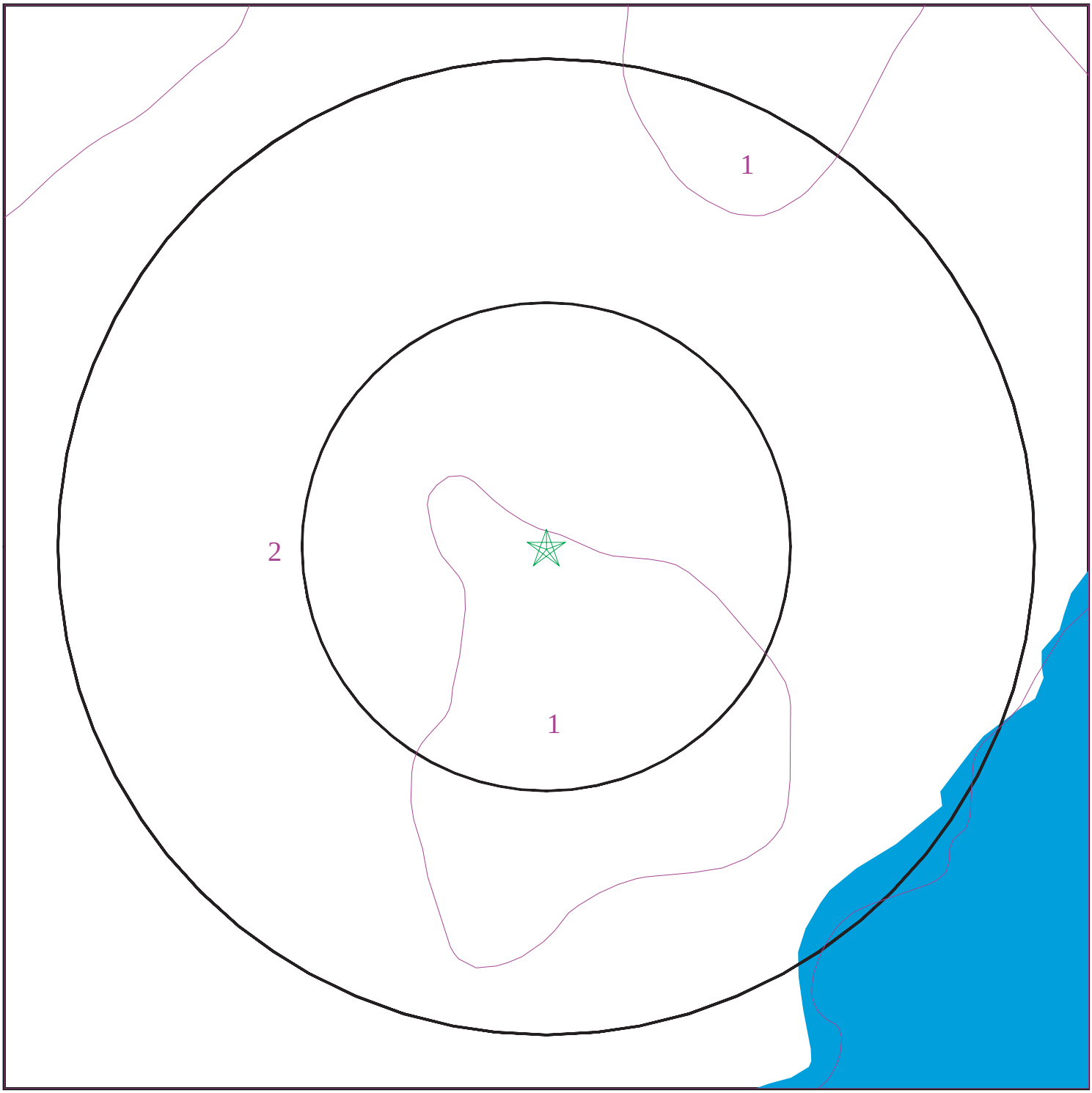
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tp *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2023268.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Opal Cliffs	CLIENT:	Diablo Green Consulting
ADDRESS:	4400/4455 Jade Street Capitola CA 95010	CONTACT:	Holly Moore
		INQUIRY #:	2023268.2s
LAT/LONG:	36.9703 / 121.9603	DATE:	September 06, 2007 8:01 pm

Copyright © 2007 EDR, Inc. © 2007 Tele Atlas Rel. 07/2006.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: DANVILLE

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	17 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10
2	17 inches	29 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.20 Min: 0.06	Max: 7.30 Min: 6.10
3	29 inches	65 inches	gravelly - sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10

Soil Map ID: 2

Soil Component Name: ELKHORN

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	21 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 5.60
2	21 inches	61 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60

Soil Map ID: 3

Soil Component Name: BEACHES

Soil Surface Texture: sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	24 inches	sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS3220273	1/8 - 1/4 Mile WSW
A3	USGS3220269	1/8 - 1/4 Mile WSW
B4	USGS3220281	1/8 - 1/4 Mile NE
B6	USGS3220280	1/8 - 1/4 Mile ENE
D13	USGS3220267	1/2 - 1 Mile WSW
E15	USGS3220284	1/2 - 1 Mile WNW
E16	USGS3220286	1/2 - 1 Mile NW
19	USGS3220299	1/2 - 1 Mile NW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
F21	USGS3220120	1/2 - 1 Mile North
G22	USGS3220304	1/2 - 1 Mile NE
H25	USGS3220253	1/2 - 1 Mile SW
I27	USGS3220293	1/2 - 1 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	22554	1/8 - 1/4 Mile NE
B5	CADW00000034248	1/8 - 1/4 Mile NE
C7	10558	1/4 - 1/2 Mile WSW
C8	10556	1/4 - 1/2 Mile WSW
C9	10559	1/4 - 1/2 Mile WSW
C10	22526	1/4 - 1/2 Mile WSW
C11	10560	1/4 - 1/2 Mile WSW
C12	CADW00000034204	1/2 - 1 Mile WSW
D14	CADW00000034224	1/2 - 1 Mile WSW
D17	CADW00000034223	1/2 - 1 Mile WSW
18	CADW00000034184	1/2 - 1 Mile WSW
F20	CADW00000034324	1/2 - 1 Mile North
H23	CADW00000034167	1/2 - 1 Mile SW
H24	CADW00000034168	1/2 - 1 Mile SW
G26	CADW00000034290	1/2 - 1 Mile NE
I28	CADW00000034272	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 2023268.2s

County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME:	Opal Cliffs	CLIENT:	Diablo Green Consulting
ADDRESS:	4400/4455 Jade Street Capitola CA 95010	CONTACT:	Holly Moore
		INQUIRY #:	2023268.2s
LAT/LONG:	36.9703 / 121.9603	DATE:	September 06, 2007 8:01 pm

Copyright © 2007 EDR, Inc. © 2007 Tele Atlas Rel. 07/2006.

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **NE** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**22554**

Water System Information:

Prime Station Code:	E44/017-TRTDOPA	User ID:	HEN
FRDS Number:	4410017020	County:	Santa Cruz
District Number:	05	Station Type:	STREAM/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	365818.0 1215726.0	Precision:	100 Feet (one Second)
Source Name:	OPAL WTP - TREATED		
System Number:	4410017		
System Name:	Soquel Creek Water District		
Organization That Operates System:			
	P O BOX 158 SOQUEL, CA 95073		
Pop Served:	38460	Connections:	12820
Area Served:	SOQUEL APTOS		
Sample Collected:	11/01/2000 00:00:00	Findings:	140 UG/L
Chemical:	IRON		
Sample Collected:	11/01/2000 00:00:00	Findings:	25 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/24/2001 00:00:00	Findings:	430 UG/L
Chemical:	IRON		
Sample Collected:	05/24/2001 00:00:00	Findings:	60 UG/L
Chemical:	MANGANESE		
Sample Collected:	11/28/2001 00:00:00	Findings:	220 UG/L
Chemical:	IRON		
Sample Collected:	11/28/2001 00:00:00	Findings:	40 UG/L
Chemical:	MANGANESE		
Sample Collected:	08/08/2002 00:00:00	Findings:	160 UG/L
Chemical:	IRON		
Sample Collected:	08/08/2002 00:00:00	Findings:	30 UG/L
Chemical:	MANGANESE		
Sample Collected:	03/18/2004 00:00:00	Findings:	250 UG/L
Chemical:	IRON		
Sample Collected:	03/18/2004 00:00:00	Findings:	26 UG/L
Chemical:	MANGANESE		
Sample Collected:	03/18/2005 00:00:00	Findings:	1600 UG/L
Chemical:	IRON		
Sample Collected:	03/18/2005 00:00:00	Findings:	410 UG/L
Chemical:	MANGANESE		
Sample Collected:	08/01/2005 00:00:00	Findings:	7.8
Chemical:	PH, LABORATORY		

Sample Collected:	08/01/2005 00:00:00	Findings:	170 UG/L
Chemical:	IRON		
Sample Collected:	08/01/2005 00:00:00	Findings:	.2 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	06/07/2006 00:00:00	Findings:	5 UNITS
Chemical:	COLOR		
Sample Collected:	06/07/2006 00:00:00	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	06/07/2006 00:00:00	Findings:	270 UG/L
Chemical:	IRON		
Sample Collected:	06/07/2006 00:00:00	Findings:	34 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/07/2006 00:00:00	Findings:	.2 NTU
Chemical:	TURBIDITY, LABORATORY		

A2
WSW **FED USGS** **USGS3220273**
1/8 - 1/4 Mile
Higher

Agency cd:	USGS	Site no:	365810121574403
Site name:	011S001W15L005M		
Latitude:	365810		
Longitude:	1215744	Dec lat:	36.96939507
Dec lon:	-121.96329339	Coor meth:	M
Coor accr:	F	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	479200200		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1981-04-20
Water quality data end date:	1981-04-20	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
A3 **WSW** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS3220269**

Agency cd:	USGS	Site no:	365810121574402
Site name:	011S001W15L003M		
Latitude:	365810		
Longitude:	1215744	Dec lat:	36.96939507
Dec lon:	-121.96329339	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	75.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	PURISIMA FORMATION		
Well depth:	256	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-09-10
Water quality data end date:	1980-09-10	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

B4 **NE** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS3220281**

Agency cd:	USGS	Site no:	365820121572102
Site name:	011S001W15L002M		
Latitude:	365820		
Longitude:	1215721	Dec lat:	36.97217279
Dec lon:	-121.95690424	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NENESWS15 T11N R01W M
Location map:	SOQUEL	Map scale:	24000

Altitude:	75.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	19540101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	256	Hole depth:	256
Source of depth data:	Not Reported		
Project number:	479200200		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-09-10
Water quality data end date:	1981-04-20	Water quality data count:	2
Ground water data begin date:	1967-02-00	Ground water data end date:	1981-04-14
Ground water data count:	4		

Ground-water levels, Number of Measurements: 4

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1981-04-14	86		1978-08-13	78	
1967-02-01	66.64		1967-02	66.64	

B5
NE
1/8 - 1/4 Mile
Higher

CA WELLS **CADW00000034248**

Longn:	-121.9558		
Latn:	36.9722		
Stwellno:	11S01W15L002M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

B6
ENE
1/8 - 1/4 Mile
Higher

FED USGS **USGS3220280**

Agency cd:	USGS	Site no:	365820121572001
Site name:	011S001W15L001M		
Latitude:	365820		
Longitude:	1215720	Dec lat:	36.9721728
Dec lon:	-121.95662644	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NENESWS15 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	75.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Alluvial or marine terrace		
Site type:	Ground-water other than Spring	Date construction:	19300101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	PURISIMA FORMATION		
Well depth:	211	Hole depth:	211
Source of depth data:	Not Reported		
Project number:	479200200		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1980-09-10
Water quality data end date:	1981-04-20	Water quality data count:	2
Ground water data begin date:	1967-02-00	Ground water data end date:	1981-04-14
Ground water data count:	4		

Ground-water levels, Number of Measurements: 4

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1981-04-14	85		1978-08-13	82	
1967-02-01	66.69		1967-02	66.7	

C7
WSW **CA WELLS** **10558**
1/4 - 1/2 Mile
Lower

Water System Information:

Prime Station Code:	11S/01W-21B02 M	User ID:	HEN
FRDS Number:	4410010006	County:	Santa Cruz
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	365800.0 1215800.0	Precision:	Undefined
Source Name:	BELTZ WELL 07		
System Number:	4410010		
System Name:	Santa Cruz Water Department		
Organization That Operates System:			
	809 CENTER STREET, ROOM 102		
	SANTA CRUZ, CA 95060		
Pop Served:	80000	Connections:	21949
Area Served:	SANTA CRUZ		

Sample Collected:	11/12/2002 00:00:00	Findings:	1.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11/12/2002 00:00:00	Findings:	110 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	23 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/09/2005 00:00:00	Findings:	71 MG/L
Chemical:	SODIUM		
Sample Collected:	11/09/2005 00:00:00	Findings:	66 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/09/2005 00:00:00	Findings:	332 UG/L
Chemical:	IRON		
Sample Collected:	11/09/2005 00:00:00	Findings:	742 UG/L
Chemical:	MANGANESE		
Sample Collected:	11/07/2001 00:00:00	Findings:	620 UG/L
Chemical:	MANGANESE		
Sample Collected:	11/09/2004 00:00:00	Findings:	530 UG/L
Chemical:	IRON		
Sample Collected:	11/09/2004 00:00:00	Findings:	670 UG/L
Chemical:	MANGANESE		
Sample Collected:	03/05/2005 00:00:00	Findings:	3 UNITS
Chemical:	COLOR		
Sample Collected:	03/05/2005 00:00:00	Findings:	3 TON
Chemical:	ODOR THRESHOLD @ 60 C		
Sample Collected:	03/05/2005 00:00:00	Findings:	1010 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03/05/2005 00:00:00	Findings:	7.6
Chemical:	PH, LABORATORY		
Sample Collected:	03/05/2005 00:00:00	Findings:	156 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	03/05/2005 00:00:00	Findings:	428 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	03/05/2005 00:00:00	Findings:	72.1 MG/L
Chemical:	CHLORIDE		
Sample Collected:	03/05/2005 00:00:00	Findings:	.14 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03/05/2005 00:00:00	Findings:	395 UG/L
Chemical:	IRON		
Sample Collected:	03/05/2005 00:00:00	Findings:	697 UG/L
Chemical:	MANGANESE		
Sample Collected:	03/05/2005 00:00:00	Findings:	842 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03/05/2005 00:00:00	Findings:	.512
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		

Sample Collected:	03/05/2005 00:00:00	Findings:	2.14 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	06/24/2005 00:00:00	Findings:	143 UG/L
Chemical:	IRON		
Sample Collected:	06/24/2005 00:00:00	Findings:	716 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/24/2005 00:00:00	Findings:	1.09 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	09/07/2005 00:00:00	Findings:	845 UG/L
Chemical:	IRON		
Sample Collected:	09/07/2005 00:00:00	Findings:	473 UG/L
Chemical:	MANGANESE		
Sample Collected:	09/07/2005 00:00:00	Findings:	5.79 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	11/12/2002 00:00:00	Findings:	60 MG/L
Chemical:	SODIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	7.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	810 UG/L
Chemical:	IRON		
Sample Collected:	11/12/2002 00:00:00	Findings:	490 UG/L
Chemical:	MANGANESE		
Sample Collected:	11/09/2005 00:00:00	Findings:	844 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/09/2005 00:00:00	Findings:	.523
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	11/09/2005 00:00:00	Findings:	1.44 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	05/10/2006 00:00:00	Findings:	788 UG/L
Chemical:	IRON		
Sample Collected:	05/10/2006 00:00:00	Findings:	490 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/10/2006 00:00:00	Findings:	3.99 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	07/20/2006 00:00:00	Findings:	1040 UG/L
Chemical:	IRON		
Sample Collected:	07/20/2006 00:00:00	Findings:	470 UG/L
Chemical:	MANGANESE		
Sample Collected:	07/20/2006 00:00:00	Findings:	7.03 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	10/11/2006 00:00:00	Findings:	100 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/11/2006 00:00:00	Findings:	22 MG/L
Chemical:	MAGNESIUM		

Sample Collected:	10/11/2006 00:00:00	Findings:	61 MG/L
Chemical:	SODIUM		
Sample Collected:	11/09/2005 00:00:00	Findings:	5 UNITS
Chemical:	COLOR		
Sample Collected:	11/09/2005 00:00:00	Findings:	1040 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/09/2005 00:00:00	Findings:	7.6
Chemical:	PH, LABORATORY		
Sample Collected:	11/09/2005 00:00:00	Findings:	152 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11/09/2005 00:00:00	Findings:	458 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11/09/2005 00:00:00	Findings:	124 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/09/2005 00:00:00	Findings:	27 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	01/27/1999 00:00:00	Findings:	1.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11/07/2001 00:00:00	Findings:	19 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/07/2001 00:00:00	Findings:	4 UNITS
Chemical:	COLOR		
Sample Collected:	11/07/2001 00:00:00	Findings:	935 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/07/2001 00:00:00	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	11/07/2001 00:00:00	Findings:	159 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11/07/2001 00:00:00	Findings:	159 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/07/2001 00:00:00	Findings:	342 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11/07/2001 00:00:00	Findings:	102.8 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	23.1 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	58.4 MG/L
Chemical:	SODIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	7.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	50 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/07/2001 00:00:00	Findings:	.2 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		

Sample Collected:	11/07/2001 00:00:00	Findings:	800 UG/L
Chemical:	IRON		
Sample Collected:	05/13/2002 00:00:00	Findings:	2.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	08/12/2002 00:00:00	Findings:	1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11/07/2001 00:00:00	Findings:	721 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/07/2001 00:00:00	Findings:	5.17 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	11/07/2001 00:00:00	Findings:	200 MG/L
Chemical:	FLUORIDE (TREATMENT RELATED-DISTRIBUTION)		
Sample Collected:	03/20/2002 00:00:00	Findings:	1.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

C8
WSW **CA WELLS** **10556**
1/4 - 1/2 Mile
Lower

Water System Information:

Prime Station Code:	11S/01W-16R02 M	User ID:	HEN
FRDS Number:	4410010004	County:	Santa Cruz
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	365800.0 1215800.0	Precision:	Undefined
Source Name:	BELTZ WELL 04		
System Number:	4410010		
System Name:	Santa Cruz Water Department		
Organization That Operates System:			
	809 CENTER STREET, ROOM 102		
	SANTA CRUZ, CA 95060		
Pop Served:	80000	Connections:	21949
Area Served:	SANTA CRUZ		

C9
WSW **CA WELLS** **10559**
1/4 - 1/2 Mile
Lower

Water System Information:

Prime Station Code:	11S/01W-21G01 M	User ID:	HEN
FRDS Number:	4410010002	County:	Santa Cruz
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	365800.0 1215800.0	Precision:	Undefined
Source Name:	BELTZ WELL 01		
System Number:	4410010		
System Name:	Santa Cruz Water Department		
Organization That Operates System:			
	809 CENTER STREET, ROOM 102		
	SANTA CRUZ, CA 95060		
Pop Served:	80000	Connections:	21949
Area Served:	SANTA CRUZ		

Map ID Direction Distance Elevation	Database	EDR ID Number
C10 **WSW** **1/4 - 1/2 Mile** **Lower**	**CA WELLS**	**22526**

Water System Information:

Prime Station Code:	E44/010-BELTZTR	User ID:	HEN
FRDS Number:	4410010001	County:	Santa Cruz
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	365800.0 1215800.0	Precision:	1 Mile (One Minute)
Source Name:	BELTZ TREATMENT PLANT - TREATED		
System Number:	4410010		
System Name:	Santa Cruz Water Department		
Organization That Operates System:			
	809 CENTER STREET, ROOM 102 SANTA CRUZ, CA 95060		
Pop Served:	80000	Connections:	21949
Area Served:	SANTA CRUZ		
Sample Collected:	11/10/2003 00:00:00	Findings:	60 MG/L
Chemical:	SODIUM		
Sample Collected:	08/23/2000 00:00:00	Findings:	1 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	08/04/1999 00:00:00	Findings:	19 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	08/04/1999 00:00:00	Findings:	1 UNITS
Chemical:	COLOR		
Sample Collected:	08/04/1999 00:00:00	Findings:	3 TON
Chemical:	ODOR THRESHOLD @ 60 C		
Sample Collected:	08/04/1999 00:00:00	Findings:	650 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	08/04/1999 00:00:00	Findings:	8.1
Chemical:	PH, LABORATORY		
Sample Collected:	08/04/1999 00:00:00	Findings:	113 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	08/04/1999 00:00:00	Findings:	113 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	08/04/1999 00:00:00	Findings:	224 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	08/04/1999 00:00:00	Findings:	53.3 MG/L
Chemical:	CALCIUM		
Sample Collected:	08/04/1999 00:00:00	Findings:	18.6 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	08/04/1999 00:00:00	Findings:	41.6 MG/L
Chemical:	SODIUM		

Sample Collected:	08/04/1999 00:00:00	Findings:	6 MG/L
Chemical:	POTASSIUM		
Sample Collected:	08/04/1999 00:00:00	Findings:	50 MG/L
Chemical:	CHLORIDE		
Sample Collected:	08/04/1999 00:00:00	Findings:	200 UG/L
Chemical:	IRON		
Sample Collected:	08/04/1999 00:00:00	Findings:	451 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	08/04/1999 00:00:00	Findings:	.16 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03/30/2004 00:00:00	Findings:	111 UG/L
Chemical:	IRON		
Sample Collected:	04/02/2004 00:00:00	Findings:	290 UG/L
Chemical:	IRON		
Sample Collected:	04/02/2004 00:00:00	Findings:	31 UG/L
Chemical:	MANGANESE		
Sample Collected:	05/06/2004 00:00:00	Findings:	591 UG/L
Chemical:	IRON		
Sample Collected:	05/06/2004 00:00:00	Findings:	33 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/02/2004 00:00:00	Findings:	312 UG/L
Chemical:	IRON		
Sample Collected:	07/16/2004 00:00:00	Findings:	265 UG/L
Chemical:	IRON		
Sample Collected:	07/16/2004 00:00:00	Findings:	26 UG/L
Chemical:	MANGANESE		
Sample Collected:	09/03/2004 00:00:00	Findings:	250 UG/L
Chemical:	IRON		
Sample Collected:	09/03/2004 00:00:00	Findings:	40 UG/L
Chemical:	MANGANESE		
Sample Collected:	10/06/2004 00:00:00	Findings:	280 UG/L
Chemical:	IRON		
Sample Collected:	10/06/2004 00:00:00	Findings:	50 UG/L
Chemical:	MANGANESE		
Sample Collected:	06/24/2005 00:00:00	Findings:	180 UG/L
Chemical:	IRON		
Sample Collected:	07/07/2005 00:00:00	Findings:	220 UG/L
Chemical:	IRON		
Sample Collected:	07/07/2005 00:00:00	Findings:	30 UG/L
Chemical:	MANGANESE		
Sample Collected:	10/03/2005 00:00:00	Findings:	257 UG/L
Chemical:	IRON		
Sample Collected:	10/03/2005 00:00:00	Findings:	21 UG/L
Chemical:	MANGANESE		

Sample Collected:	05/10/2006 00:00:00	Findings:	200 UG/L
Chemical:	IRON		
Sample Collected:	10/09/2006 00:00:00	Findings:	180 UG/L
Chemical:	CHLORATE		
Sample Collected:	10/09/2006 00:00:00	Findings:	780 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10/11/2006 00:00:00	Findings:	74 MG/L
Chemical:	CALCIUM		
Sample Collected:	10/11/2006 00:00:00	Findings:	18 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10/11/2006 00:00:00	Findings:	51 MG/L
Chemical:	SODIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	19 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11/07/2001 00:00:00	Findings:	1 UNITS
Chemical:	COLOR		
Sample Collected:	11/07/2001 00:00:00	Findings:	700 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/07/2001 00:00:00	Findings:	8
Chemical:	PH, LABORATORY		
Sample Collected:	11/07/2001 00:00:00	Findings:	128 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11/07/2001 00:00:00	Findings:	128 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/07/2001 00:00:00	Findings:	236 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11/07/2001 00:00:00	Findings:	66.1 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	16.8 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	43.8 MG/L
Chemical:	SODIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	6.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/07/2001 00:00:00	Findings:	49 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/07/2001 00:00:00	Findings:	.2 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	11/07/2001 00:00:00	Findings:	502 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/07/2001 00:00:00	Findings:	.07 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	11/07/2001 00:00:00	Findings:	200 MG/L
Chemical:	FLUORIDE (TREATMENT RELATED-DISTRIBUTION)		

Sample Collected:	11/12/2002 00:00:00	Findings:	.09 MG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	11/12/2002 00:00:00	Findings:	80 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	18 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	51 MG/L
Chemical:	SODIUM		
Sample Collected:	11/12/2002 00:00:00	Findings:	7.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11/10/2003 00:00:00	Findings:	2 UNITS
Chemical:	COLOR		
Sample Collected:	11/10/2003 00:00:00	Findings:	3 TON
Chemical:	ODOR THRESHOLD @ 60 C		
Sample Collected:	11/10/2003 00:00:00	Findings:	680 US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11/10/2003 00:00:00	Findings:	8.1
Chemical:	PH, LABORATORY		
Sample Collected:	11/10/2003 00:00:00	Findings:	144 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11/10/2003 00:00:00	Findings:	144 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11/10/2003 00:00:00	Findings:	228 MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11/10/2003 00:00:00	Findings:	43 MG/L
Chemical:	CHLORIDE		
Sample Collected:	11/10/2003 00:00:00	Findings:	482 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11/10/2003 00:00:00	Findings:	.11 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	11/10/2003 00:00:00	Findings:	63 MG/L
Chemical:	CALCIUM		
Sample Collected:	11/10/2003 00:00:00	Findings:	17 MG/L
Chemical:	MAGNESIUM		

C11
WSW **CA WELLS** **10560**
1/4 - 1/2 Mile
Lower

Water System Information:

Prime Station Code:	11S/01W-21G02 M	User ID:	HEN
FRDS Number:	4410010003	County:	Santa Cruz
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	365800.0 1215800.0	Precision:	Undefined
Source Name:	BELTZ WELL 02		

System Number:	4410010		
System Name:	Santa Cruz Water Department		
Organization That Operates System:			
	809 CENTER STREET, ROOM 102		
	SANTA CRUZ, CA 95060		
Pop Served:	80000	Connections:	21949
Area Served:	SANTA CRUZ		
Sample Collected:	01/27/1999 00:00:00	Findings:	2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

C12
WSW **CA WELLS** **CADW00000034204**
1/2 - 1 Mile
Lower

Longn:	-121.9675		
Latn:	36.9669		
Stwellno:	11S01W16R003M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

D13
WSW **FED USGS** **USGS3220267**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	365807121580801
Site name:	011S001W16Q001M		
Latitude:	365807		
Longitude:	1215808	Dec lat:	36.96856172
Dec lon:	-121.96996036	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NESWSES16 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	60.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19500101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	98.0	Hole depth:	98.0
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1978-02-01	Ground water data end date:	1978-02-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-02-01	57.00	

D14
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADW00000034224**

Longn:	-121.9689		
Latn:	36.9686		
Stwellno:	11S01W16Q001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

E15
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS3220284**

Agency cd:	USGS	Site no:	365830121580501
Site name:	011S001W16H001M		
Latitude:	365830		
Longitude:	1215805	Dec lat:	36.97495043
Dec lon:	-121.96912706	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NWSENWS16 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	80.00		
Altitude method:	Altimeter		
Altitude accuracy:	005		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	PURISIMA FORMATION		
Well depth:	102	Hole depth:	102
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count: 0
Water quality data begin date: 0000-00-00
Water quality data end date: 0000-00-00
Water quality data count: 0
Ground water data begin date: 1966-02-16
Ground water data end date: 1982-06-09
Ground water data count: 22

Ground-water levels, Number of Measurements: 22

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1982-06-09	59.03		1982-05-11	57.49	
1982-04-13	56.49		1982-03-09	56.81	
1982-02-09	57.34		1981-12-08	56.64	
1981-11-09	65.39				
Note: A nearby site that taps the same aquifer was being pumped.					
1981-10-09	62.14				
Note: A nearby site that taps the same aquifer was being pumped.					
1981-09-11	62.59				
Note: A nearby site that taps the same aquifer was being pumped.					
1981-08-13	62.19		1981-07-07	60.14	
1981-06-08	59.83				
1981-04-15	56.78				
Note: The site had been pumped recently.					
1981-03-19	56.01		1981-02-19	56.40	
1981-01-16	60.25				
1980-11-20	61.64				
Note: A nearby site that taps the same aquifer was being pumped.					
1980-10-17	60.99				
Note: A nearby site that taps the same aquifer was being pumped.					
1980-09-11	61.6				
Note: A nearby site that taps the same aquifer was being pumped.					
1978-08-10	58.87				
1978-06-29	64.95				
Note: A nearby site that taps the same aquifer was being pumped.					
1966-02-16	57.3				

E16
NW
1/2 - 1 Mile
Higher

FED USGS **USGS3220286**

Agency cd:	USGS	Site no:	365832121580401
Site name:	011S001W16H002M		
Latitude:	365832		
Longitude:	1215804	Dec lat:	36.97550597
Dec lon:	-121.96884927	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	10		
Altitude datum:	Not Reported		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

D17
WSW **CA WELLS** **CADW00000034223**
1/2 - 1 Mile
Lower

Longn:	-121.97		
Latn:	36.9686		
Stwellno:	11S01W16R002M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

18
WSW **CA WELLS** **CADW00000034184**
1/2 - 1 Mile
Lower

Longn:	-121.9708		
Latn:	36.9661		
Stwellno:	11S01W21B002M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

19
NW **FED USGS** **USGS3220299**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	365844121580401
Site name:	011S001W16B001M		
Latitude:	365844		
Longitude:	1215804	Dec lat:	36.97883921
Dec lon:	-121.96884931	Coor meth:	M
Coor accr:	F	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NENEWNES16 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	90.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	20		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19800301
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1981-09-11
Water quality data end date:	1982-06-09	Water quality data count:	9
Ground water data begin date:	1981-09-11	Ground water data end date:	1982-06-09
Ground water data count:	9		

Ground-water levels, Number of Measurements: 9

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1982-06-09	68.32		1982-05-11	75.78	
1982-04-13	79.57				
Note: The site had been pumped recently.					
1982-03-09	68.02				
Note: The site had been pumped recently.					
1982-02-09	68.66				
Note: The site had been pumped recently.					
1981-12-08	62.92		1981-11-09	66.06	
1981-10-09	62.93				
1981-09-11	64.11				
Note: The site had been pumped recently.					

F20
North
1/2 - 1 Mile
Higher

CA WELLS **CADW00000034324**

Longn:	-121.9606		
Latn:	36.9836		
Stwellno:	11S01W10N001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

F21
North
1/2 - 1 Mile
Higher

FED USGS **USGS3220120**

Agency cd:	USGS	Site no:	365901121573801
Site name:	011S001W10N001M		
Latitude:	365901		
Longitude:	1215738	Dec lat:	36.98356133
Dec lon:	-121.9616268	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	10		
Altitude datum:	Not Reported		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	PURISIMA FORMATION		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

G22
NE
1/2 - 1 Mile
Higher

FED USGS **USGS3220304**

Agency cd:	USGS	Site no:	365851121565501
Site name:	011S001W15A001M		
Latitude:	365851		
Longitude:	1215655	Dec lat:	36.98078369
Dec lon:	-121.94968177	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NENENES15 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	60.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19500720
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	PURISIMA FORMATION		
Well depth:	168	Hole depth:	168
Source of depth data:	Not Reported		
Project number:	479200200		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1978-07-19
Water quality data end date:	1982-06-09	Water quality data count:	15
Ground water data begin date:	1966-02-16	Ground water data end date:	1982-06-09
Ground water data count:	16		

Ground-water levels, Number of Measurements: 16

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1982-06-09	51.39		1982-05-12	47.28	
1982-04-13	46.54		1982-03-09	48.03	
1982-02-09	47.22		1981-12-08	52.75	
1981-11-09	53.90				
1981-10-09	54.80				
Note: The site had been pumped recently.					
1981-09-10	48.44				
1981-08-13	56.29				
Note: The site had been pumped recently.					
1981-07-08	53.15				
Note: The site had been pumped recently.					
1981-06-08	51.25				
Note: The site had been pumped recently.					
1981-04-15	48.68		1980-09-11	53.0	
1978-08-09	49.75		1966-02-16	30	

H23
SW
1/2 - 1 Mile
Lower

CA WELLS **CADW00000034167**

Longn:	-121.9719		
Latn:	36.9614		
Stwellno:	11S01W21G001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

H24
SW **CA WELLS** **CADW00000034168**
1/2 - 1 Mile
Lower

Longn:	-121.9719		
Latn:	36.9614		
Stwellno:	11S01W21G002M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

H25
SW **FED USGS** **USGS3220253**
1/2 - 1 Mile
Lower

Agency cd:	USGS	Site no:	365741121581901
Site name:	011S001W21G001M		
Latitude:	365741		
Longitude:	1215819	Dec lat:	36.9613397
Dec lon:	-121.97301598	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	NWSWNES21 T11S R01W M
Location map:	SOQUEL	Map scale:	24000
Altitude:	20.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19510403
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	125	Hole depth:	125
Source of depth data:	Not Reported		
Project number:	479200200		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1980-09-12
Water quality data end date:	1980-09-12	Water quality data count:	1
Ground water data begin date:	1971-03-31	Ground water data end date:	1971-03-31
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1971-03-31	3.00	

G26
NE
1/2 - 1 Mile
Higher

CA WELLS **CADW00000034290**

Longn:	-121.9475		
Latn:	36.9808		
Stwellno:	11S01W15A001M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

I27
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS3220293**

Agency cd:	USGS	Site no:	365835121563601
Site name:	011S001W14E002M		
Latitude:	365835		
Longitude:	1215636	Dec lat:	36.9763394
Dec lon:	-121.94440369	Coor meth:	M
Coor accr:	U	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	087
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	10		
Altitude datum:	Not Reported		
Hydrologic:	San LorenzoSoquel. California. Area = 374 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	1978-08-02
Water quality data end date:	1978-08-02	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

I28
ENE
1/2 - 1 Mile
Higher

CA WELLS **CADW00000034272**

Longn:	-121.9433		
Latn:	36.9764		
Stwellno:	11S01W14E002M		
Districtco:	8		
Wellusecod:	Z		
Countycode:	44		
Gwcode:	300100	County:	Santa Cruz
State:	CA	Gw name:	Soquel Valley
District:	San Joaquin District		
Descriptio:	Undetermined		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
95010	1	0	0.00

Federal EPA Radon Zone for SANTA CRUZ County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SANTA CRUZ COUNTY, CA

Number of sites tested: 9

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.100 pCi/L	89%	11%	0%
Living Area - 2nd Floor	1.900 pCi/L	100%	0%	0%
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

© 2007 Tele Atlas North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

APPENDIX F

AERIAL PHOTOGRAPHS

The EDR Aerial Photo Decade Package

Opal Cliffs
4400/4455 Jade Street
Capitola, CA 95010

Inquiry Number: 2023268.5

September 07, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2007 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Date EDR Searched Historical Sources:

Aerial Photography September 07, 2007

Target Property:

4400/4455 Jade Street

Capitola, CA 95010

Year	***Scale***	***Details***	***Source***
1948	Aerial Photograph. Scale: 1"=555'	Flight Year: 1948	Exxon
1956	Aerial Photograph. Scale: 1"=555'	Flight Year: 1956	Aero
1964	Aerial Photograph. Scale: 1"=400'	Flight Year: 1964	Mark Hurd
1977	Aerial Photograph. Scale: 1"=541'	Flight Year: 1977	NASA
1982	Aerial Photograph. Scale: 1"=690'	Flight Year: 1982	WSA
1987	Aerial Photograph. Scale: 1"=666'	Flight Year: 1987 Best Copy Available from original source	USGS
1998	Aerial Photograph. Scale: 1"=666'	Flight Year: 1998	USGS

INQUIRY #: 2023268.5
YEAR: 1948
= 555'
N

INQUIRY #: 2023268.5
YEAR: 1956
= 555'
N

INQUIRY #: 2023268.5
YEAR: 1964
= 400'
N

INQUIRY #: 2023268.5
YEAR: 1977
= 541'
N

INQUIRY #: 2023268.5
YEAR: 1982
= 690'
N

INQUIRY #: 2023268.5
YEAR: 1987
= 666'
N

INQUIRY #: 2023268.5
YEAR: 1998
= 666'
N

APPENDIX G

HISTORICAL RESEARCH DOCUMENTATION

EDR Historical Topographic Map Report

Opal Cliffs
4400/4455 Jade Street
Capitola, CA 95010

Inquiry Number: 2023268.4

September 07, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

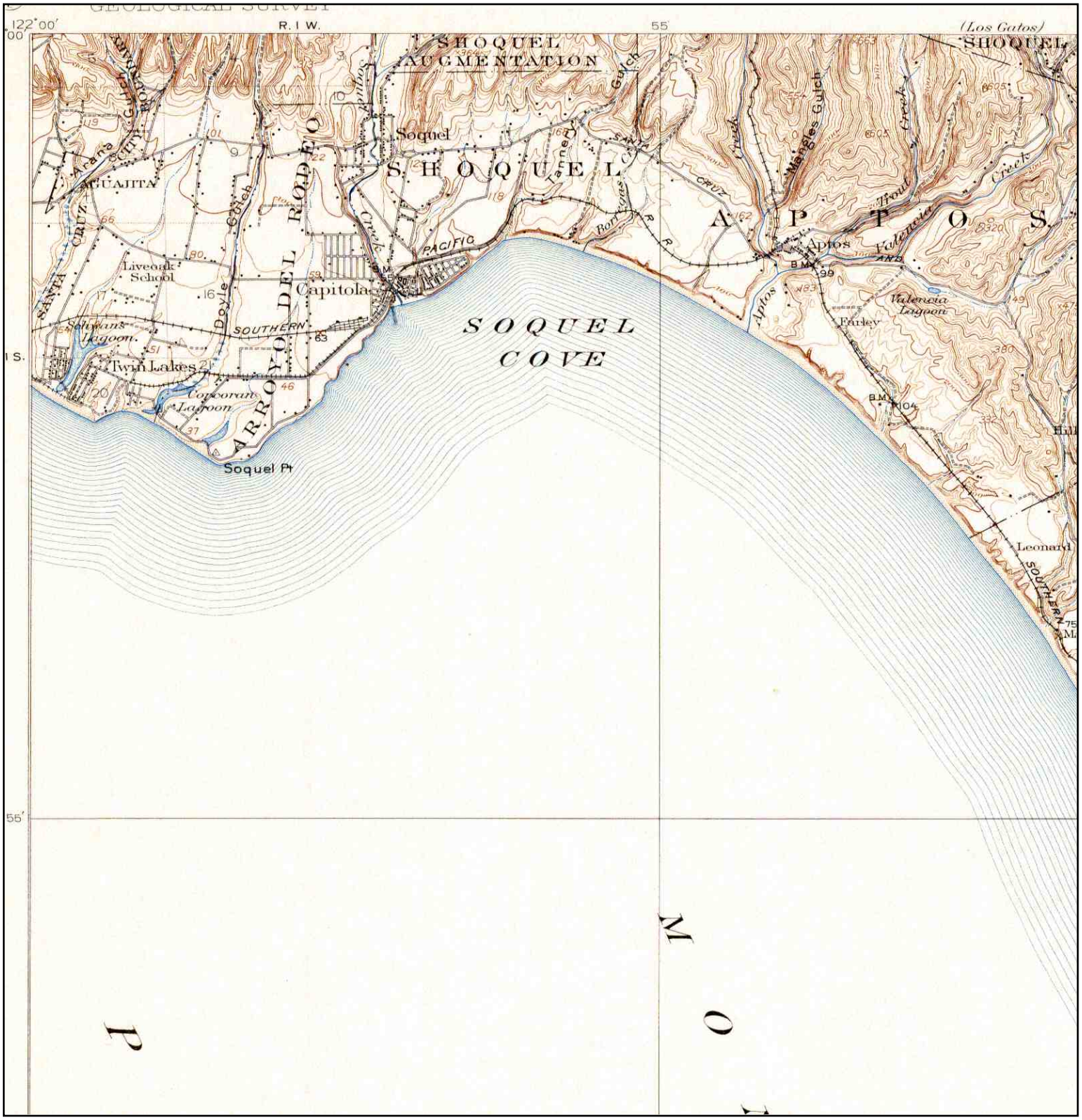
Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2007 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

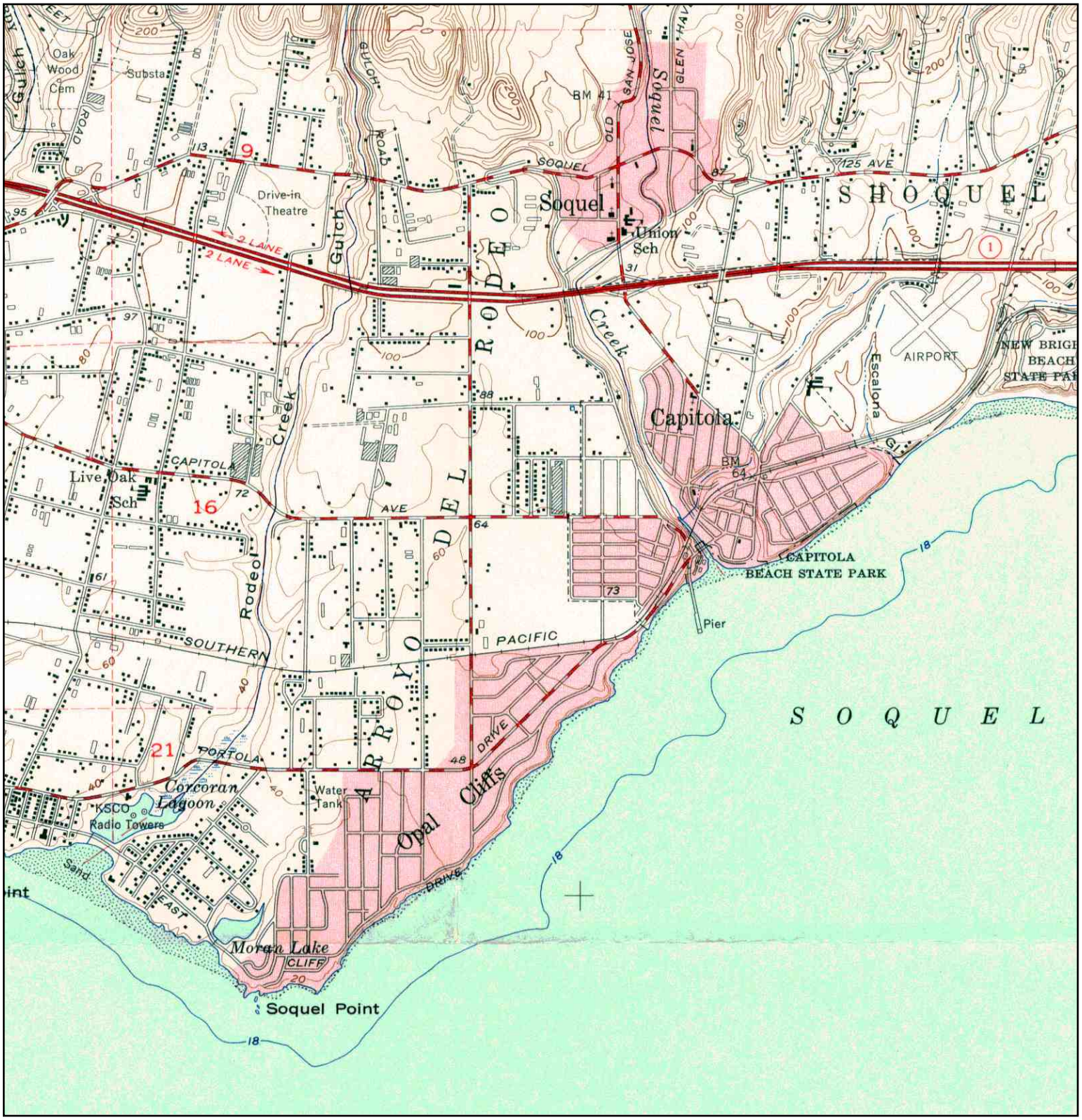
EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Historical Topographic Map



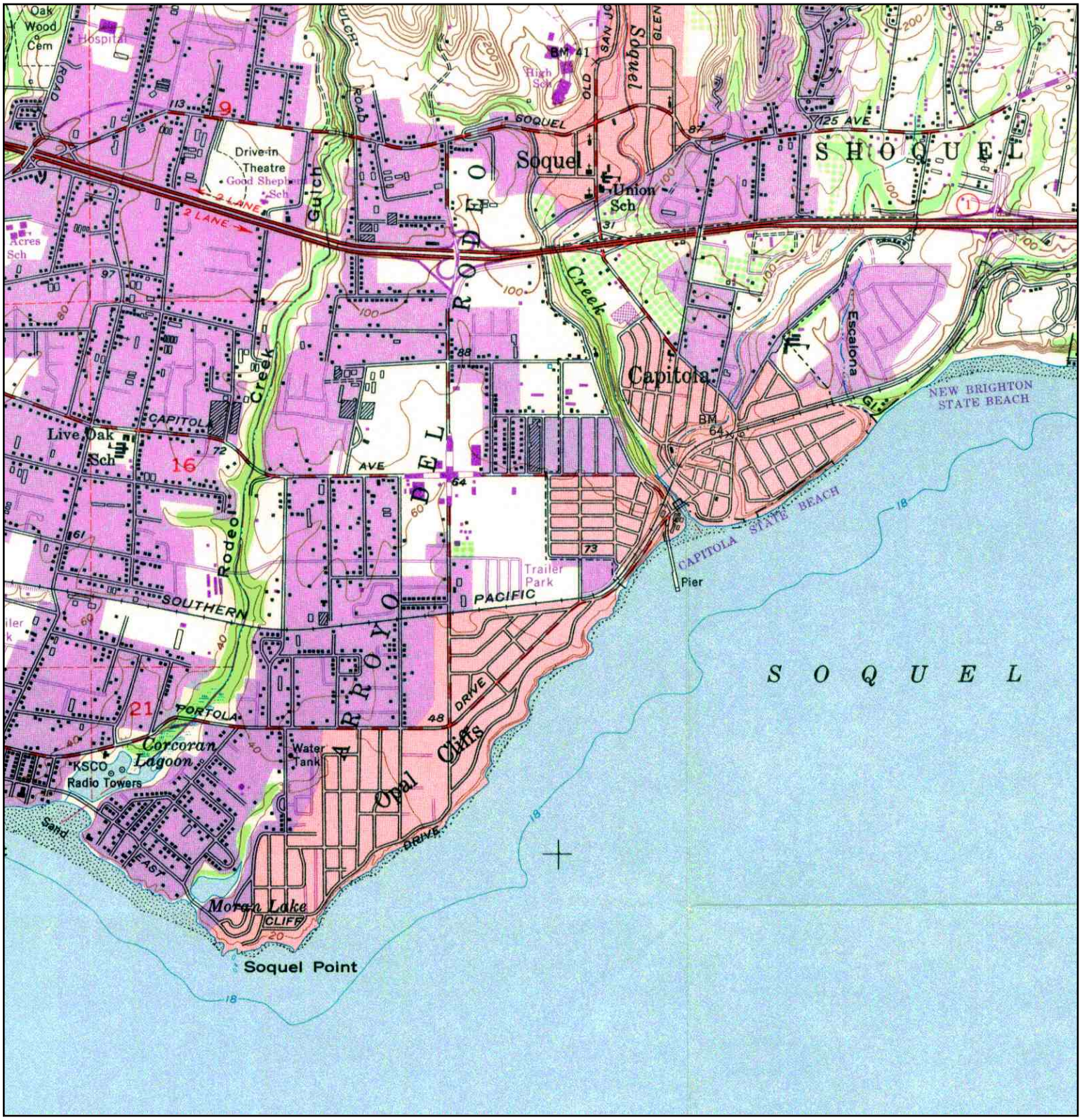
N	TARGET QUAD NAME: CAPITOLA MAP YEAR: 1914 SERIES: 15 SCALE: 1:62500	SITE NAME: Opal Cliffs ADDRESS: 4400/4455 Jade Street Capitola, CA 95010 LAT/LONG: 36.9703 / 121.9603	CLIENT: Diablo Green Consulting CONTACT: Holly Moore INQUIRY#: 2023268.4 RESEARCH DATE: 09/07/2007

Historical Topographic Map



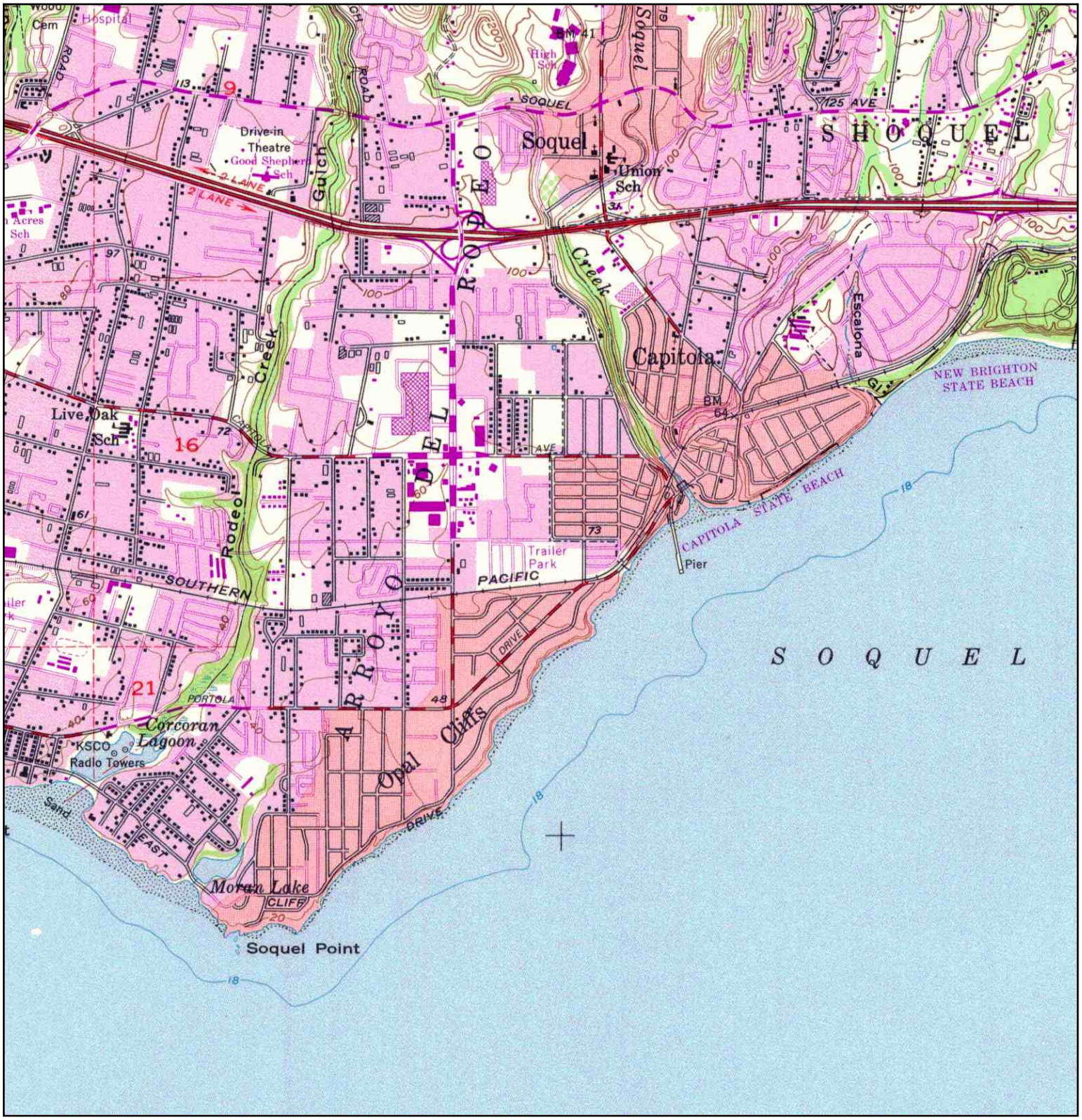
N	TARGET QUAD NAME: SOQUEL MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Opal Cliffs ADDRESS: 4400/4455 Jade Street Capitola, CA 95010 LAT/LONG: 36.9703 / 121.9603	CLIENT: Diablo Green Consulting CONTACT: Holly Moore INQUIRY#: 2023268.4 RESEARCH DATE: 09/07/2007

Historical Topographic Map



N	TARGET QUAD NAME: SOQUEL MAP YEAR: 1968 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Opal Cliffs ADDRESS: 4400/4455 Jade Street Capitola, CA 95010 LAT/LONG: 36.9703 / 121.9603	CLIENT: Diablo Green Consulting CONTACT: Holly Moore INQUIRY#: 2023268.4 RESEARCH DATE: 09/07/2007

Historical Topographic Map



N	TARGET QUAD NAME: SOQUEL MAP YEAR: 1980 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Opal Cliffs ADDRESS: 4400/4455 Jade Street Capitola, CA 95010 LAT/LONG: 36.9703 / 121.9603	CLIENT: Diablo Green Consulting CONTACT: Holly Moore INQUIRY#: 2023268.4 RESEARCH DATE: 09/07/2007

Historical Topographic Map

N	TARGET QUAD NAME: SOQUEL MAP YEAR: 1994 REVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Opal Cliffs ADDRESS: 4400/4455 Jade Street Capitola, CA 95010 LAT/LONG: 36.9703 / 121.9603	CLIENT: Diablo Green Consulting CONTACT: Holly Moore INQUIRY#: 2023268.4 RESEARCH DATE: 09/07/2007

The EDR-City Directory
Abstract

Opal Cliffs
4400 Jade Street
Capitola, CA 95010

Inquiry Number: 2023268.6

Tuesday, September 11, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2007 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1961 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: September 11, 2007

Target Property:
4400 Jade Street
Capitola, CA 95010

Year	***Uses***	***Source***
1961	Street Not Listed in Research Source	Polk's City Directory
1966	Street Not Listed in Research Source	Polk's City Directory
1970	Address Not Listed in Research Source	Polk's City Directory
1975	Address Not Listed in Research Source	Polk's City Directory
1980	Address Not Listed in Research Source	Polk's City Directory
1985	Address Not Listed in Research Source	Polk's City Directory
1990	Address Not Listed in Research Source	Polk's City Directory
2001	Capitola Community Center	Polk's City Directory
2006	Capitola Community Center	Polk's City Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
Capitola, CA 95010

Year	***Uses***	***Source***
1961	Street Not Listed in Research Source	Polk's City Directory
1966	Street Not Listed in Research Source	Polk's City Directory
1970	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory

Year	***Uses***	***Source***
1975	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory
1980	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory
1985	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory
1990	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory

Year	***Uses***	***Source***
1990	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory
2001	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory
2006	****Jade Street****	Polk's City Directory
	Apartment Building (4325)	Polk's City Directory
	Apartment Building (4355)	Polk's City Directory
	Apartment Building (4375)	Polk's City Directory
	Apartment Building (4425)	Polk's City Directory
	Apartment Building (4455)	Polk's City Directory
	No other addresses in 4325-4599 range	Polk's City Directory

Certified Sanborn® Map Report

Sanborn® Library search results
Certification # 6D81-45FD-972F

Opal Cliffs
4400/4455 Jade Street
Capitola, CA 95010

Inquiry Number 2023268.3

September 06, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

9/06/07

Site Name:
Opal Cliffs
4400/4455 Jade Street
Capitola, CA 95010

EDR Inquiry # 2023268.3

Client Name:
Diablo Green Consulting
231 Market Place #186
San Ramon, CA 94583

Contact: Holly Moore

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Diablo Green Consulting were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name:	Opal Cliffs
Address:	4400/4455 Jade Street
City, State, Zip:	Capitola, CA 95010
Cross Street:	
P.O. #	NA
Project:	07.10029.0001
Certification #	6D81-45FD-972F

Sanborn® Library search results
Certification # 6D81-45FD-972F

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

Total Maps: 0

Limited Permission To Make Copies

Diablo Green Consulting (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2007 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

APPENDIX H

PRIOR REPORTS

THIS SECTION INTENTIONALLY LEFT BLANK

APPENDIX I

RESUMES

HOLLY D. MOORE, REA, CSST
Senior Project Manager

EDUCATION

- B.S., Environmental Biology and Management, University of California at Davis, 1997

PROFESSIONAL REGISTRATIONS

- Registered Environmental Assessor I, REA I Registration No. REA-07975
- California Certified Site Surveillance Technician, Certification Number 98-2388
- United States EPA AHERA Asbestos Building Inspector, Annual Refresher
- United States EPA AHERA Asbestos Contractor/Supervisor, Annual Refresher
- State of California Notary Public
- State of California Real Estate Salesperson

PROFESSIONAL SUMMARY

Ms. Moore has ten years of experience in environmental project management. Ms. Moore is responsible for the management of environmental services related to growth and real estate projects for various clients, including telecommunications, acquisition, development, and redevelopment firms. Ms. Moore is accountable for project management, field supervision, marketing, and quality control for environmental services. Due diligence includes preparation of National Environmental Policy Act (NEPA) evaluations, California Environmental Quality Act (CEQA) evaluations, Phase I Environmental Site Assessments (ESA) in accordance with the American Society of Testing and Materials (ASTM) standards, Transaction Screen assessments in accordance with ASTM standards, NEPA Environmental Assessments, coordination of Phase II subsurface evaluations, hazardous materials management, and various additional environmental services.

SELECTED PROJECT EXPERIENCE

Environmental

- **Director of Environmental Services / Pleasanton, California.** Responsible for the oversight and management of various clients throughout Northern California, including development and telecommunications clients. These responsibilities include the establishment and monitoring of client specific reporting requirements, contract compliance, technical liaison support, regulatory agency consultation, staff training and coordination, field supervision, and overall quality control.

- **Telecommunications Services Program Manager / Western U.S.** Responsible for the oversight and management of various Telecommunication Services clients throughout the western region. These responsibilities included the establishment and monitoring of client specific reporting requirements, contract compliance, technical liaison support, regulatory agency consultation and overall quality control. These studies have been conducted as part of

a comprehensive Environmental Site Assessment program for telecommunications clients at all proposed antenna sites.

- **NEPA Environmental Impact Evaluations / Telecommunications Clients / Western U.S.** Ms. Moore has been responsible for performing FCC-required NEPA checklists and compliance studies for potential telecommunications tower sites. NEPA compliance includes evaluating developmental concerns relating to wildlife preserves, wilderness areas, biological issues, historical and cultural resources, Native American tribal concerns, and the natural environment. Primary responsibilities included managing the regulatory compliance for development projects, maintaining client relationships, and managing a variety of projects throughout the western region. As part of NEPA compliance, Ms. Moore has been responsible for consulting with various state and federal agencies regarding proposed telecommunication tower sites, including the United States Bureau of Land Management, United States Fish and Wildlife Service, State Historic Preservation Offices, the Federal Emergency Management Agency, and the Army Corps of Engineers. These studies are conducted as part of a comprehensive Environmental Site Assessment program for telecommunications clients at all proposed antenna sites.

- **Dry Cleaner Assessments / Northern California.** Responsible for the inspection and observation of dry cleaning facilities. Evaluations include assessments of waste disposal practices and requirements, potential leaks and releases from equipment, and state and federal requirements for such facilities.

- **Environmental Assessment Management / American Tower Corporation** / **Western U.S.** Served as program manager of the western region for American Tower Corporation in support of telecommunication tower development contracts. The projects included environmental and geotechnical support services ranging from NEPA compliance checklists, Environmental Assessments (i.e. historical, biological, archeological), Phase I ESAs in accordance with ASTM regulations, geotechnical investigations, asbestos and/or lead testing, construction management and Phase II subsurface studies.

- **Construction Management / Confidential Client / San Jose, California.** Responsible for the coordination and management of construction for a wireless telecommunications site within a designated NPL/Superfund site in San Jose. Soils in the area were impacted with both asbestos and lead and required hazardous waste disposal at an EPA-approved landfill facility. Construction operations included coordination of various general contractors specializing in hazardous materials management and adherence with City of San Jose permitting requirements and utility companies.

- **Environmental Assessment Management / Bechtel Corporation / Western U.S.** Served as the project manager for the western United States. Projects included environmental services ranging from NEPA compliance checklists, Environmental Assessments (i.e. historical, biological, archaeological, wetlands), Phase I ESAs, asbestos and/or lead testing, and Phase II investigations. Over 500 sites were evaluated in California, Arizona, Nevada, Washington, and Oregon.

- **Environmental Site Assessments / Various Clients / California.** Completed Phase I ESAs for various properties throughout Northern California to satisfy due diligence requirements for real estate transactions. Responsibilities included contacting client and representative agencies, reviewing map collections and database listings provided by regulatory agencies, and writing a comprehensive environmental report with recommendations. Projects involve the thorough environmental assessment of properties and their potential environmental concerns, including the review of information with the Department of Public Health, the

Department of Toxic Substances Control, the Regional Water Quality Control Board, and the jurisdictional fire, building, and planning departments.

Building Sciences

- **Asbestos & Lead Management / Various Clients / Northern and Central California.** Completed building inspections and hazardous material surveys to determine the potential for asbestos and lead hazards. Surveys included sampling of suspect materials, reviewing analytical laboratory reports, and completing detailed reports with material management recommendations.

- **Asbestos & Lead Survey Management / Wireless Telecommunications Clients / Northern California.** Completed building inspections and hazardous material surveys to determine the potential for asbestos and lead hazards at proposed telecommunications facilities. Surveys included sampling of suspect materials, reviewing analytical laboratory reports, and completing detailed reports with material management recommendations.

- **Asbestos & Lead Abatement Management / Wireless Telecommunications Clients / Northern California.** Project management for abatement of asbestos and lead hazards at proposed telecommunications facilities. Abatement activities involved coordination of personnel and licensed abatement contractors, and EPA hazardous waste requirements and disposal.

Information Systems

- **Environmental Database Management / Confidential Financial Client / Western U.S.** Assisted in creating and maintaining an environmental database. This included uploading specific site information to an Internet web site and summarizing information from previous reports in asbestos summary sheets. Assisted in notifying bank employees of asbestos-containing materials within their respective branches.

TRAINING AND CERTIFICATIONS

- Registered Environmental Assessor I, REA I Registration No. REA-07975
- California Certified Site Surveillance Technician, Certification Number 98-2388
- United States EPA AHERA Asbestos Building Inspector, Annual Refresher
- United States EPA AHERA Asbestos Contractor/Supervisor, Annual Refresher
- State of California Notary Public
- State of California Real Estate Salesperson

WILLIAM A. MITCHELL, RG, REA
Project Geologist

EDUCATION

B.S., Geology
University of California, Davis, 1982

Post-Graduate Studies, Geology
California State University, Long Beach, 1983 – 1985

Certificate Program, Hazardous Materials Management
University of California, Irvine, 1994

Certificate Program, Site Assessment and Remediation
University of California, Irvine, 1994

PROFESSIONAL REGISTRATIONS

- Registered Geologist (CA #6372, 1996)
- Registered Environmental Assessor (CA #02451, 1990)

PROFESSIONAL SUMMARY

Mr. Mitchell has over 19 years of experience in environmental management. He is in charge of performing a wide variety of environmental services including Phase I and Phase II Environmental Site Assessments. Mr. Mitchell also performs environmental and geologic inspections, field monitoring, drilling, water sampling and report writing.

Previously, Mr. Mitchell served as Project Geologist for a large environmental consulting firm. In this capacity, he performed various aspects of Phase I and II assessments, including site and area reconnaissance, historical reviews, and subsurface assessments. Additionally, Mr. Mitchell provided project management and technical review of Phase I and II Environmental Site Assessments prepared by staff-level professionals within the firm, as well as for third-party reviews for clients.

Additional experience includes serving as Staff Geologist, performing multiple tasks including preliminary geologic and seismic investigations, geologic mapping of cut slopes, and methane and groundwater monitoring. Mr. Mitchell also has experience as a soils technician, where he conducted various construction inspection projects, including soil density testing, foundation inspections and pile driving monitoring.

SELECTED PROJECT EXPERIENCE

Environmental

- **Environmental Site Assessments / Various Clients / Western U.S.** Completed over 1,000 Phase I and 300 Phase II Environmental Site Assessments between 1987 and 2006. Facilities have included hospitals, schools, mortuaries; manufacturing sites, commercial offices, and warehouses. Also performed assessment services for mass-transit projects, siting proposed alignments for light-rail transportation projects.

- **Environmental Site Assessment & Methane Gas Monitoring / Sewer Project / Los Angeles, CA.** Performed methane gas assessments for a proposed 10-mile long sewer project in the Los Angeles area. Project involved a Phase I ESA as well as the installation of methane gas monitoring wells, and the subsequent sampling and analysis of gas contained within the wells.

Geological

- **Geologic Mapping / Prison Facility / Los Angeles, CA.** Provided geologic mapping of cut slopes during construction grading of a prison facility located in the Los Angeles area.

- **Geologic and Seismic Studies / Various Clients / Los Angeles, CA.** Completed several geologic/seismic studies in the Los Angeles area. Investigations conducted at proposed hospital facilities, school sites and commercial properties. Projects included the collection and evaluation of geologic data for siting and developing the facilities referenced above.

TRAINING AND CERTIFICATIONS

- OSHA 40-Hour Hazardous Waste Operations
- AHERA-Certified Asbestos Building Inspector

PROFESSIONAL ACTIVITIES

- Association of Engineering Geologists

APPENDIX J

RECORDS OF COMMUNICATION

September 6, 2007
Sent via facsimile (805) 788-3514

Regional Water Quality Control Board
Central Coast Region
895 Aerovista Place
Suite 101
San Luis Obispo, California 93401
(805) 549-3147

Subject: File Review

To Whom It May Concern:

I am completing an environmental investigation for properties in SANTA CRUZ County, and would like to review applicable hazardous materials, UST, AST, and LUST files for the following properties:

1. 4400 Jade Street, Capitola
2. 4455 Jade Street, Capitola

Please contact me at (925) 846-9800 x. 802, or via facsimile at (925) 397-3051, and let me know if there are any records available for review.

Thanks so much for your assistance, and have a wonderful day.

Sincerely,
DGC Associates Inc.

Holly D. Moore
Senior Project Manager

September 6, 2007
Sent via facsimile (510) 540-3801

Department of Toxic Substances Control
700 Heinz Avenue Suite 200
Berkeley, CA 94710-2721
Phone (510) 540-2122

Subject: File Review

To Whom It May Concern:

I am completing an environmental investigation for properties in SANTA CRUZ County, and would like to review applicable hazardous materials, UST, AST, and LUST files for the following properties:

1. 4400 Jade Street, Capitola
2. 4455 Jade Street, Capitola

Please contact me at (925) 846-9800 x. 802, or via facsimile at (925) 397-3051, and let me know if there are any records available for review.

Thanks so much for your assistance, and have a wonderful day.

Sincerely,
DGC Associates Inc.

Holly D. Moore
Senior Project Manager

September 6, 2007
Sent via facsimile (831) 454-3128

Santa Cruz County Environmental Health Department
County Government Center
701 Ocean Street, Room 312
Santa Cruz, California

Subject: File Review

To Whom It May Concern:

I am completing an environmental investigation for properties in SANTA CRUZ County, and would like to review applicable hazardous materials, UST, AST, and LUST files for the following properties:

1. 4400 Jade Street, Capitola
2. 4455 Jade Street, Capitola

Please contact me at (925) 846-9800 x. 802, or via facsimile at (925) 397-3051, and let me know if there are any records available for review.

Thanks so much for your assistance, and have a wonderful day.

Sincerely,
DGC Associates Inc.

Holly D. Moore
Senior Project Manager

Holly Moore

From: Holly Moore [holly.moore@dgcassoc.com]
Sent: Monday, September 24, 2007 1:14 PM
To: 'SBrown@suesd.org'
Subject: Opal Cliffs School Site on Jade Street in Capitola

Hi Sherree,

Per my e-mail and phone messages, we are competing the environmental evaluation at the proposed Opal Cliffs school site on Jade Street in Capitola, CA. In order to complete this evaluation, we need to ask some environmental questions to the owner, which is the school district. Any help you can provide would be appreciated.

- How long has the community garden been present?
- Are you aware of any pesticide and/or herbicide use within the garden area?
- Are you aware of any specialized knowledge or experience related to *recognized environmental conditions* associated with the property or nearby properties?
- Are you aware of any specific chemicals that are present or once were present at the property?
- Are you aware of any spills or other chemical releases that have taken place at the property?
- Are you aware of any environmental clean-ups that have taken place at the property?
- Are you aware of any valuation reduction due to environmental concerns at the property?
- Are you aware of any additional information that may be pertinent to the environmental review of this property?

Thanks so much,

Holly Moore
DGC Associates
www.dgcassoc.com
holly.moore@dgcassoc.com
t: 925-846-9800 x802
f: 925-397-3051

Holly Moore

From: Holly Moore [holly.moore@dgcassoc.com]
Sent: Thursday, September 20, 2007 12:15 PM
To: 'SBrown@suesd.org'
Subject: Opal Cliffs School Site

Hi Sherree,

I am completing the environmental investigation (Phase I Environmental Site Assessment) at the proposed Opal Cliffs school site on Jade Street in Capitola. I have a few questions for you, since the school district is the property owner. If you have a chance, could you e-mail me answers on the following?

- How long have you been associated with the property?
- What type of school is proposed? Nursery school, kindergarten, etc. Will it be one or multiple buildings?
- Does the property to be developed include the community garden area only, or are adjacent park and/or parking lot areas to be used too?
- Are you aware that any underground storage tanks or aboveground storage tanks have ever been installed on the property?
- Are you aware of any prior dry cleaning uses on the property?
- Are you aware of any environmental concerns associated with the property?
- Are you aware of any environmental liens or activity and use limitations (AULs) that have been filed against the property?
- Are you aware of any environmental cleanups that have been completed at the property?
- Are you aware of any known environmental concerns that have been indicated for the property?

Thanks so much for your assistance – this report is in the final review stages and can be completed as soon as we have your responses.

Have a great afternoon!

Holly Moore
DGC Associates Inc.
tel: (925) 846-9800 x. 802
fax: (925) 397-3051
mobile: (925) 766-8593
holly.moore@dgcassoc.com
www.dgcassoc.com

Holly Moore

From: Sherree Brown [SBrown@suesd.org]
Sent: Monday, September 24, 2007 3:04 PM
To: holly.moore@dgcassoc.com
Subject: Re: Opal Cliffs School Site on Jade Street in Capitola

Holly:

I personally have been with the District 3 years. In my position, I am responsible for all of the business and operations of the District, which includes facilities and properties of the District.

They type of school that is proposed is a Preschool/Early Childhood Education Center with the final plans of it becoming a fully functioning K-5 school. There will be two buildings to start with and then we will add as we grow.

The area to be developed is the community garden area and the parking lot area. Eventually, the plans show that we will use the soccer field area to add more classrooms and a Multi-Use building.

I am not aware of any underground storage tanks. The District would not have installed any such items at that site.

I am unaware of any dry cleaning uses on that property.

I am unaware of any environmental concerns with the exception of the fact that the area where the school will be built has been used as a garden, thus there may be pesticide usage.

No I am not aware of any liens such as you inquire with the property.

I an unaware of any environmental cleanup.

Again, I do not know of any environmental concerns for the property.

Sherree Brown
Assistant Superintendent, Business Services

>>> "Holly Moore" <holly.moore@dgcassoc.com> 09/24/07 01:14PM >>>
Hi Sherree,

Per my e-mail and phone messages, we are competing the environmental evaluation at the proposed Opal Cliffs school site on Jade Street in Capitola, CA. In order to complete this evaluation, we need to ask some environmental questions to the owner, which is the school district. Any help you can provide would be appreciated.

. How long has the community garden been present?

. Are you aware of any pesticide and/or herbicide use within the garden area?

. Are you aware of any specialized knowledge or experience related to recognized environmental conditions associated with the property or nearby properties?

. Are you aware of any specific chemicals that are present or once were present at the property?

. Are you aware of any spills or other chemical releases that have taken place at the property?

. Are you aware of any environmental clean-ups that have taken place at the property?

. Are you aware of any valuation reduction due to environmental concerns at the property?

. Are you aware of any additional information that may be pertinent to the environmental review of this property?

Thanks so much,

Holly Moore

DGC Associates

<http://www.dgcassoc.com> www.dgcassoc.com

<mailto:holly.moore@dgcassoc.com> holly.moore@dgcassoc.com

t: 925-846-9800 x802

f: 925-397-3051

APPENDIX K

LABORATORY REPORTS

THIS SECTION INTENTIONALLY LEFT BLANK

APPENDIX L

OTHER SUPPORTING DOCUMENTATION

The EDR Environmental Lien Search Report

OPAL CLIFFS
4400/4455 JADE STREET
CAPITOLA, CALIFORNIA

Friday, September 21, 2007

Project Number: L07-08127

The Standard In Environmental Risk Management Information

440 Wheelers Farm Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

ENVIRONMENTAL LIEN REPORT

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied property information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' office, registries of deed, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved and description); and
- provide a copy of the deed or cite documents reviewed;

Thank you for your business
Please contact EDR at 1-800-352-0050
with any questions or comments

Disclaimer - Copyright and Trademark Notice

This report was prepared for the use of Environmental Data Resources, Inc., and Diablo Green Consulting, exclusively. This report is neither a guarantee of title, a commitment to insure, nor a policy of title insurance. **NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT.** Environmental Data Resources, Inc. (EDR) and Nationwide Environmental Title Research (NETR) specifically disclaim the making of any such warranties, including without limitation, merchantability or fitness for a particular use or purpose. The information contained in this report is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.

Copyright 2006 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission

EDR and its logos are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

ENVIRONMENTAL LIEN REPORT

The EDR Environmental Lien Search Report is intended to assist in the search for environmental liens filed in land title records.

TARGET PROPERTY INFORMATION

ADDRESS

Opal Cliffs
4400/4455 Jade Street
Capitola, California

RESEARCH SOURCE

Source: Santa Cruz County Assessor
Santa Cruz County Recorder

DEED INFORMATION

Type of Instrument: Grant Deed (Individual)

Title is vested in: Soquel Union Elementary School District

Title received from: Frank T. Blake and Anna V. Blake, his wife

Deed Dated: 03/13/1956
Deed Recorded: 03/17/1956
Volume: 1075
Page: 261

LEGAL DESCRIPTION

Beginning at a 2" iron pipe at the intersection of the Northern boundary of lands conveyed to the Santa Cruz Railroad Company by Deed recorded in Volume 21 of Deeds at Page 293, Santa Cruz County Records with the Western boundary of a 40 foot street known and designated as Forty-Seventh Avenue on "Map of Opal Subdivision Number 1 of Fairview Tract, Capitola, Santa Cruz Co. Calif." filed 07/09/1923 in Map Book 18 at Page 40 Santa Cruz County Records produced Southerly and from which a 4" X 4" post at an angle on the Northern boundary of said lands conveyed to the Santa Cruz Railroad Company bears North 62 degrees 21.5' East 125.46 feet distant; thence from said point of beginning along the Western boundary of said Forty-Seventh Avenue produced Southerly North 0 degrees 11' West 494.02 feet; thence South 89 degrees 48.5' West 789.76 feet to a 2" iron pipe; thence South 0 degrees 11' East parallel to the Western boundary of said Forty-Seventh Avenue 584.30 feet; thence North 83 degrees 21.5' East 286.22 feet to a 2" iron pipe; thence North 1 degree 05' East 1.00 feet to a 2" iron pipe at an angle; thence North 83 degrees 21.5' East 508.58 feet to the place of beginning and containing 9.80 acres of land, a little more or less out of the Rancho Arroyo Del Rodeo, situated and lying in the City of Capitola, Santa Cruz County, State of California

Assessor's Parcel Number(s): 034-551-02

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

ENVIRONMENTAL LIEN REPORT

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AULs: Found ☐ Not Found ☒

GRANT DEED (Individual)

For value received FRANK T. BLAKE and ANNA V. BLAKE, his wife

GRANT ____ to SOQUEL UNION ELEMENTARY SCHOOL DISTRICT

all that real property situate in the

County of Santa Cruz, State of California, described as follows:

BEING a part of the Rancho Arroyo Del Rodeo and more particularly bounded and described as follows, to wit:

BEGINNING at a 2" iron pipe at the intersection of the Northern boundary of lands conveyed to the Santa Cruz Railroad Company by Deed recorded in Volume 21 of Deeds at Page 293, Santa Cruz County Records with the Western boundary of a 40 foot street known and designated as Forty-Seventh Avenue on "Map of Opal Subdivision No. 1 of Fairview Tract, Capitola, Santa Cruz Co. Calif." filed July 9, 1923 in Map Book 18 at Page 40 Santa Cruz County Records produced Southerly and from which a 4" x 4" post at an angle on the Northern boundary of said lands conveyed to the Santa Cruz Railroad Company bears North 82° 21½' East 125.46 feet distant; thence from said point of beginning along the Western boundary of said Forty-Seventh Avenue produced Southerly North 0° 11' West 494.02 feet to a 2" iron pipe at the Southeastern corner of Lot 10 in Block 14 as shown on said above mentioned Map; thence along the Southern boundary of said Block 14 and along the produced line thereof South 89° 48½' West (at 400.00 feet a 3/4" iron pipe at the Southwestern corner of Lot 1 in Block 14, at 440.00 feet a 2" iron pipe at the Southwestern corner of Forty-Fifth Avenue as shown on said above mentioned map) 789.76 feet to a 2" iron pipe; thence South 0° 11' East parallel to the Western boundary of said Forty-Seventh Avenue (at 298.08 feet a 2" iron pipe) 584.30 feet to a 2" iron pipe on the Northern boundary of lands conveyed to the Santa Cruz Railroad Company by Deed recorded in Volume 21 of Deeds at Page 291, Santa Cruz County Records; thence along said last mentioned boundary North 83° 21½' East 286.22 feet to a 2" iron pipe on the Western boundary of said first above mentioned lands conveyed to Santa Cruz Railroad Company; thence along said last mentioned boundary North 1° 05' East 1.00 feet to a 2" iron pipe at an angle; thence North 83° 21½' East 508.58 feet to the place of beginning and CONTAINING 9.80 Acres of land, a little more or less.

Dated March 13th, 1956

Frank T. Blake
Anna V. Blake

STATE OF CALIFORNIA
County of Santa Cruz } ss.

On March 13 1956

before me, the undersigned, a Notary Public, in and for said County and State, personally appeared

FRANK T. BLAKE and ANNA V. BLAKE

known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

Notary Public

My commission expires Jan. 21, 1958

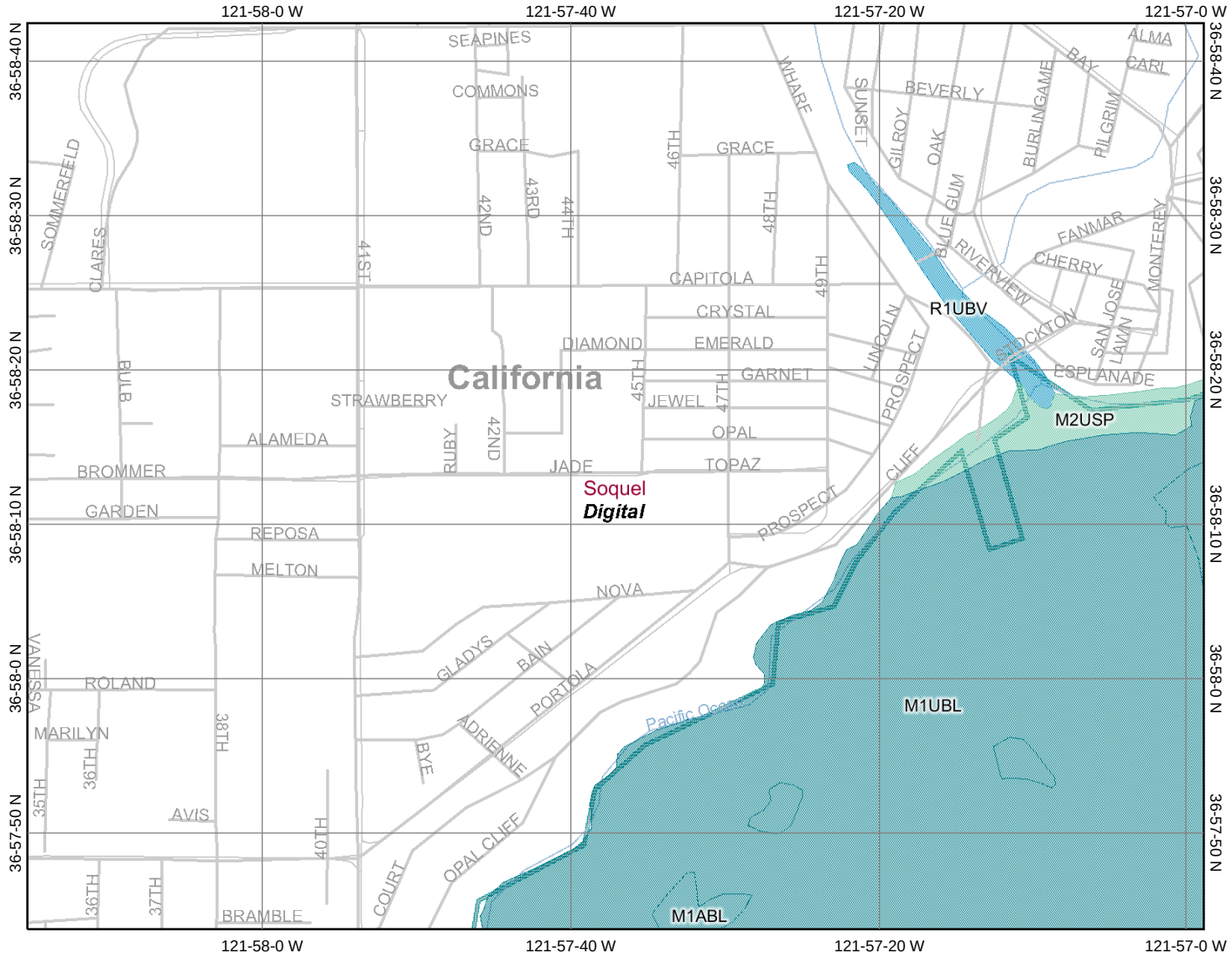
Appt. No.

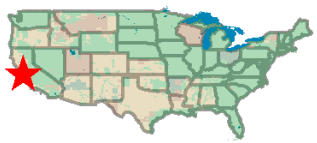
For Recorder's Use Only

7757

RECORDED AT REQUEST OF SANTA CRUZ LAND TITLE CO.
MAR 17 3 58 PM 1956
in 1075 page 261
Official Records Santa Cruz County, Calif.

Opal Cliffs





Legend

CONUS_wet_scan

- 0
- 1
- Out of range

Interstate
Major Roads

- Other Road
- Interstate
- State highway
- US highway

Roads

Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data

- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

Counties 100K

States 100K

South America

North America

N

Scale: 1:12,708

Map center: 36° 58' 13" N, 121° 57' 37" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

OPEN-FILE REPORT 2000-19

A GENERAL LOCATION GUIDE FOR ULTRAMAFIC ROCKS IN CALIFORNIA - AREAS MORE LIKELY TO CONTAIN NATURALLY OCCURRING ASBESTOS

August, 2000

DEPARTMENT OF CONSERVATION
Division of Mines and Geology

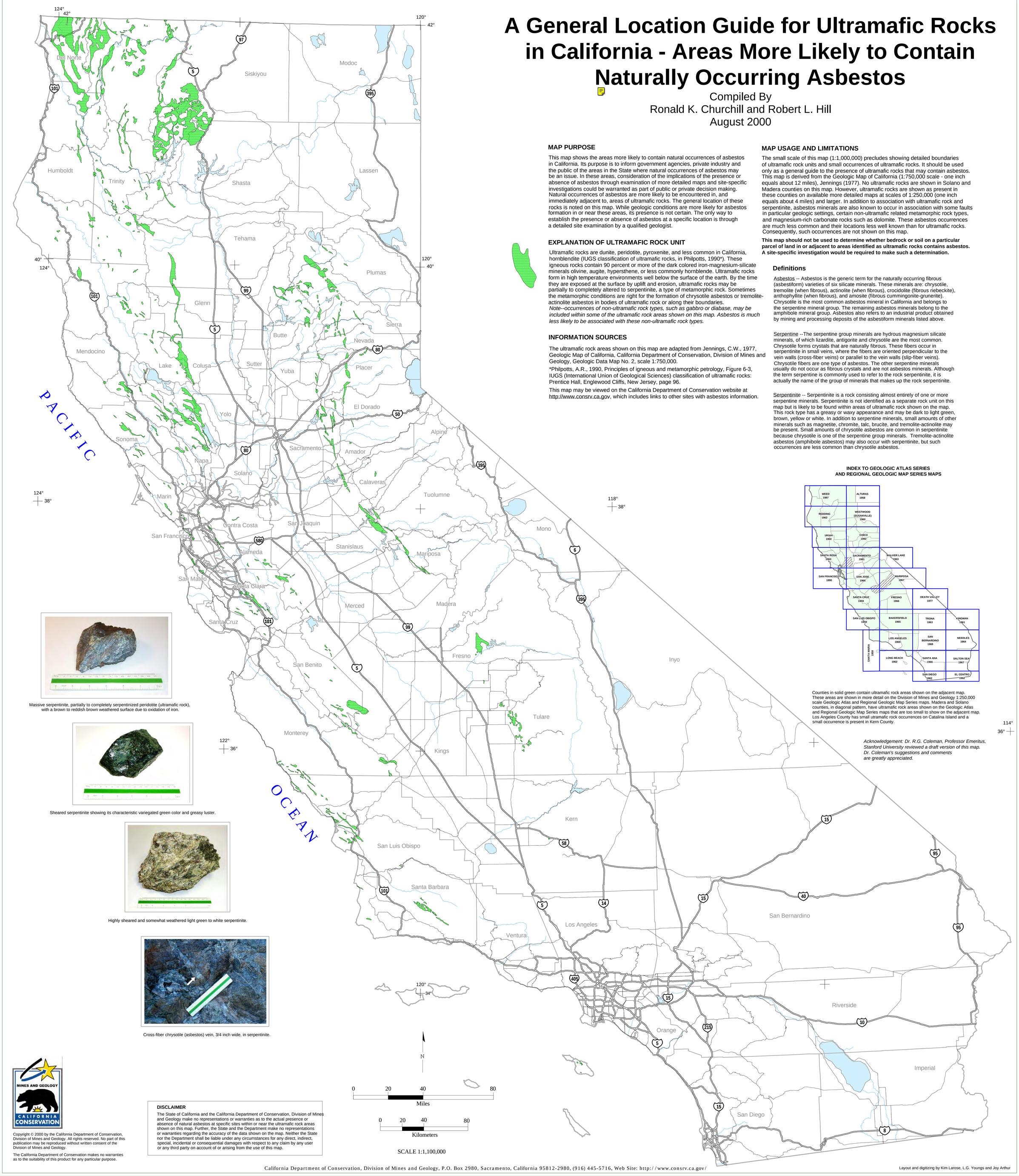
STATE OF CALIFORNIA
GRAY DAVIS
GOVERNOR

THE RESOURCES AGENCY
MARY D. NICHOLS
SECRETARY FOR RESOURCES

DEPARTMENT OF CONSERVATION
DARRYL YOUNG
DIRECTOR

A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos

Compiled By
Ronald K. Churchill and Robert L. Hill
August 2000



MAP PURPOSE

This map shows the areas more likely to contain natural occurrences of asbestos in California. Its purpose is to inform government agencies, private industry and the public of the areas in the State where natural occurrences of asbestos may be an issue. In these areas, consideration of the implications of the presence or absence of asbestos through examination of more detailed maps and site-specific investigations could be warranted as part of public or private decision making. Natural occurrences of asbestos are more likely to be encountered in, and immediately adjacent to, areas of ultramafic rocks. The general location of these rocks is noted on this map. While geologic conditions are more likely for asbestos formation in or near these areas, its presence is not certain. The only way to establish the presence or absence of asbestos at a specific location is through a detailed site examination by a qualified geologist.

EXPLANATION OF ULTRAMAFIC ROCK UNIT

Ultramafic rocks are dunite, peridotite, pyroxenite, and less common in California, hornblendite (IUGS classification of ultramafic rocks, in Philpotts, 1990*). These igneous rocks contain 90 percent or more of the dark colored iron-magnesium-silicate minerals olivine, augite, hypersthene, or less commonly hornblende. Ultramafic rocks form in high temperature environments well below the surface of the earth. By the time they are exposed at the surface by uplift and erosion, ultramafic rocks may be partially to completely altered to serpentinite, a type of metamorphic rock. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in bodies of ultramafic rock or along their boundaries.
Note--occurrences of non-ultramafic rock types, such as gabbro or diabase, may be included within some of the ultramafic rock areas shown on this map. Asbestos is much less likely to be associated with these non-ultramafic rock types.

INFORMATION SOURCES

The ultramafic rock areas shown on this map are adapted from Jennings, C.W., 1977, Geologic Map of California, California Department of Conservation, Division of Mines and Geology, Geologic Data Map No. 2, scale 1:750,000.

*Philpotts, A.R., 1990, Principles of igneous and metamorphic petrology, Figure 6-3, IUGS (International Union of Geological Sciences) classification of ultramafic rocks: Prentice Hall, Englewood Cliffs, New Jersey, page 96.

This map may be viewed on the California Department of Conservation website at http://www.consrv.ca.gov, which includes links to other sites with asbestos information.

MAP USAGE AND LIMITATIONS

The small scale of this map (1:1,000,000) precludes showing detailed boundaries of ultramafic rock units and small occurrences of ultramafic rocks. It should be used only as a general guide to the presence of ultramafic rocks that may contain asbestos. This map is derived from the Geologic Map of California (1:750,000 scale - one inch equals about 12 miles), Jennings (1977). No ultramafic rocks are shown in Solano and Madera counties on this map. However, ultramafic rocks are shown as present in these counties on available more detailed maps at scales of 1:250,000 (one inch equals about 4 miles) and larger. In addition to association with ultramafic rock and serpentinite, asbestos minerals are also known to occur in association with some faults in particular geologic settings, certain non-ultramafic related metamorphic rock types, and magnesium-rich carbonate rocks such as dolomite. These asbestos occurrences are much less common and their locations less well known than for ultramafic rocks. Consequently, such occurrences are not shown on this map.

This map should not be used to determine whether bedrock or soil on a particular parcel of land in or adjacent to areas identified as ultramafic rocks contains asbestos. A site-specific investigation would be required to make such a determination.

Definitions

Asbestos -- Asbestos is the generic term for the naturally occurring fibrous (asbestiform) varieties of six silicate minerals. These minerals are: chrysotile, tremolite (when fibrous), actinolite (when fibrous), crocidolite (fibrous riebeckite), anthophyllite (when fibrous), and amosite (fibrous cummingonite-grunerite). Chrysotile is the most common asbestos mineral in California and belongs to the serpentine mineral group. The remaining asbestos minerals belong to the amphibole mineral group. Asbestos also refers to an industrial product obtained by mining and processing deposits of the asbestiform minerals listed above.

Serpentine --The serpentine group minerals are hydrous magnesium silicate minerals, of which lizardite, antigorite and chrysotile are the most common. Chrysotile forms crystals that are naturally fibrous. These fibers occur in serpentinite in small veins, where the fibers are oriented perpendicular to the vein walls (cross-fiber veins) or parallel to the vein walls (slip-fiber veins). Chrysotile fibers are one type of asbestos. The other serpentine minerals usually do not occur as fibrous crystals and are not asbestos minerals. Although the term serpentine is commonly used to refer to the rock serpentinite, it is actually the name of the group of minerals that makes up the rock serpentinite.

Serpentinite -- Serpentinite is a rock consisting almost entirely of one or more serpentine minerals. Serpentinite is not identified as a separate rock unit on this map but is likely to be found within areas of ultramafic rock shown on the map. This rock type has a greasy or waxy appearance and may be dark to light green, brown, yellow or white. In addition to serpentine minerals, small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite may be present. Small amounts of chrysotile asbestos are common in serpentinite because chrysotile is one of the serpentine group minerals. Tremolite-actinolite asbestos (amphibole asbestos) may also occur with serpentinite, but such occurrences are less common than chrysotile asbestos.

INDEX TO GEOLOGIC ATLAS SERIES AND REGIONAL GEOLOGIC MAP SERIES MAPS

Counties in solid green contain ultramafic rock areas shown on the adjacent map. These areas are shown in more detail on the Division of Mines and Geology 1:250,000 scale Geologic Atlas and Regional Geologic Map Series maps. Madera and Solano counties, in diagonal pattern, have ultramafic rock areas shown on the Geologic Atlas and Regional Geologic Map Series maps that are too small to show on the adjacent map. Los Angeles County has small ultramafic rock occurrences on Catalina Island and a small occurrence is present in Kern County.

Acknowledgement: Dr. R.G. Coleman, Professor Emeritus, Stanford University reviewed a draft version of this map. Dr. Coleman's suggestions and comments are greatly appreciated.

Massive serpentinite, partially to completely serpentinized peridotite (ultramafic rock), with a brown to reddish brown weathered surface due to oxidation of iron.

Sheared serpentinite showing its characteristic variegated green color and greasy luster.

Highly sheared and somewhat weathered light green to white serpentinite.

Cross-fiber chrysotile (asbestos) vein, 3/4 inch wide, in serpentinite.

DISCLAIMER

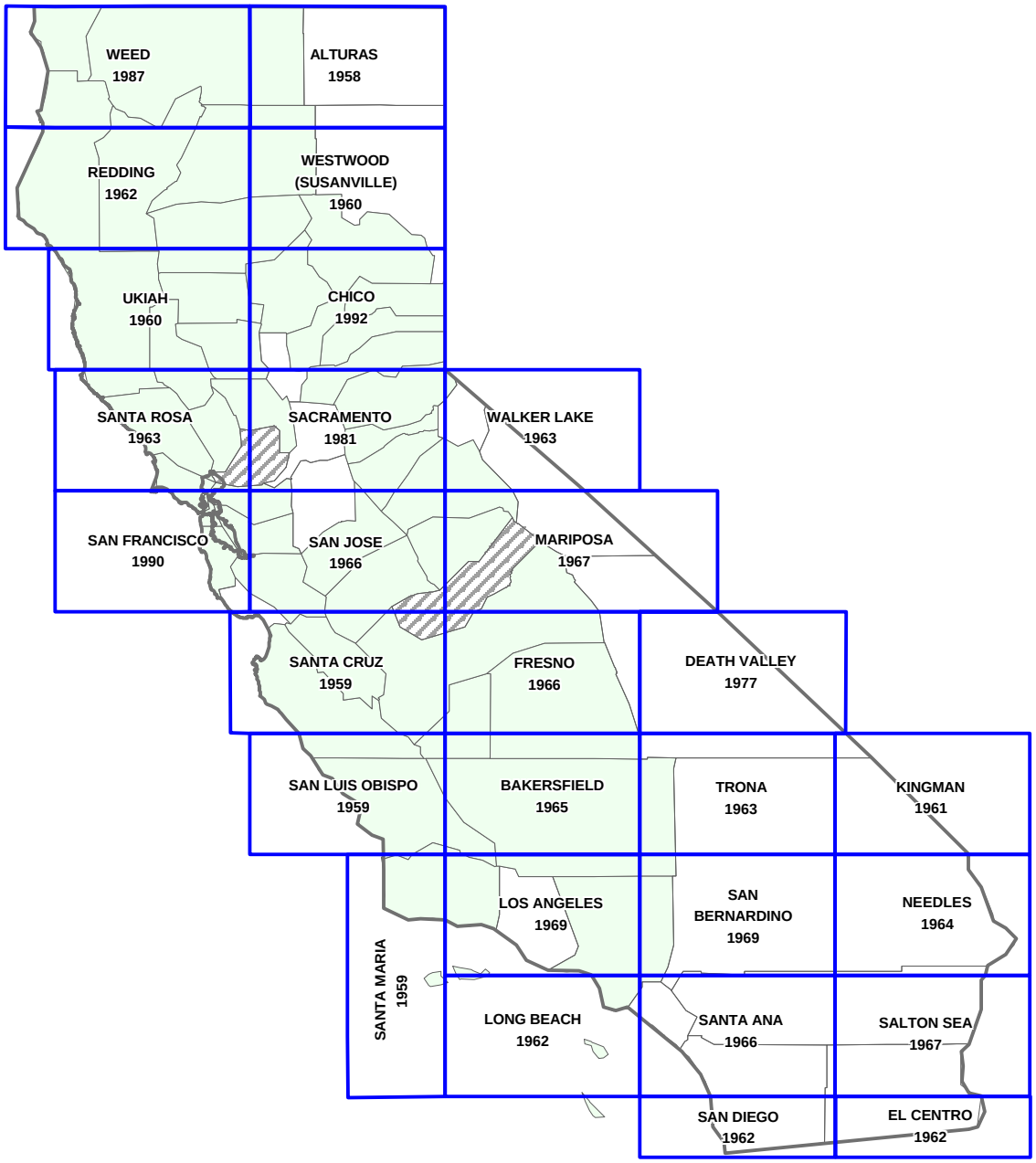
The State of California and the California Department of Conservation, Division of Mines and Geology make no representations or warranties as to the actual presence or absence of natural asbestos at specific sites within or near the ultramafic rock areas shown on this map. Further, the State and the Department make no representations or warranties regarding the accuracy of the data shown on the map. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

Copyright © 2000 by the California Department of Conservation, Division of Mines and Geology. All rights reserved. No part of this publication may be reproduced without written consent of the Division of Mines and Geology.

The California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Layout and digitizing by Kim Larose, L.G. Youngs and Joy Arthur

INDEX TO GEOLOGIC ATLAS SERIES AND REGIONAL GEOLOGIC MAP SERIES MAPS



Counties in solid green contain ultramafic rock areas shown on the adjacent map. These areas are shown in more detail on the Division of Mines and Geology 1:250,000 scale Geologic Atlas and Regional Geologic Map Series maps. Madera and Solano counties, in diagonal pattern, have ultramafic rock areas shown on the Geologic Atlas and Regional Geologic Map Series maps that are too small to show on the adjacent map. Los Angeles County has small utramafic rock occurrences on Catalina Island and a small occurrence is present in Kern County.

EXPLANATION TEXT FOR MAP

A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos

MAP PURPOSE

This map shows the areas more likely to contain natural occurrences of asbestos in California. Its purpose is to inform government agencies, private industry and the public of the areas in the State where natural occurrences of asbestos may be an issue. In these areas, consideration of the implications of the presence or absence of asbestos through examination of more detailed maps and site-specific investigations could be warranted as part of public or private decision making. Natural occurrences of asbestos are more likely to be encountered in, and immediately adjacent to, areas of ultramafic rocks. The general location of these rocks is noted on this map. While geologic conditions are more likely for asbestos formation in or near these areas, its presence is not certain. The only way to establish the presence or absence of asbestos at a specific location is through a detailed site examination by a qualified geologist.

EXPLANATION OF ULTRAMAFIC ROCK UNIT

Ultramafic rocks are dunite, peridotite, pyroxenite, and less common in California, hornblendite (IUGS classification of ultramafic rocks, in Philpotts, 1990*). These igneous rocks contain 90 percent or more of the dark colored iron-magnesium-silicate minerals olivine, augite, hypersthene, or less commonly hornblende. Ultramafic rocks form in high temperature environments well below the surface of the earth. By the time they are exposed at the surface by uplift and erosion, ultramafic rocks may be partially to completely altered to serpentinite, a type of metamorphic rock. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in bodies of ultramafic rock or along their boundaries. Note--occurrences of non-ultramafic rock types, such as gabbro or diabase, may be included within some of the ultramafic rock areas shown on this map. Asbestos is much less likely to be associated with these non-ultramafic rock types.

INFORMATION SOURCES

The ultramafic rock areas shown on this map are adapted from Jennings, C.W., 1977, Geologic Map of California, California Department of Conservation, Division of Mines and Geology, Geologic Data Map No. 2, scale 1:750,000.

*Philpotts, A.R., 1990, Principles of igneous and metamorphic petrology, Figure 6-3, IUGS (International Union of Geological Sciences) classification of ultramafic rocks: Prentice Hall, Englewood Cliffs, New Jersey, page 96.

This map may be viewed on the California Department of Conservation website at http://www.consrv.ca.gov, which includes links to other sites with asbestos information.

MAP USAGE AND LIMITATIONS

The small scale of this map (1:1,000,000) precludes showing detailed boundaries of ultramafic rock units and small occurrences of ultramafic rocks. It should be used only as a general guide to the presence of ultramafic rocks that may contain asbestos. This map is derived from the Geologic Map of California (1:750,000 scale - one inch equals about 12 miles), Jennings (1977). No ultramafic rocks are shown in Solano and Madera counties on this map. However, ultramafic rocks are shown as present in these counties on available more detailed maps at scales of 1:250,000 (one inch equals about 4 miles) and larger. In addition to association with ultramafic rock and serpentinite, asbestos minerals are also known to occur in association with some faults in particular geologic settings, certain non-ultramafic related metamorphic rock types, and magnesium-rich carbonate rocks such as dolomite. These asbestos occurrences are much less common and their locations less well known than for ultramafic rocks. Consequently, such occurrences are not shown on this map.
This map should not be used to determine whether bedrock or soil on a particular parcel of land in or adjacent to areas identified as ultramafic rocks contains asbestos. A site-specific investigation would be required to make such a determination.

Definitions

Asbestos -- Asbestos is the generic term for the naturally occurring fibrous (asbestiform) varieties of six silicate minerals. These minerals are: chrysotile, tremolite (when fibrous), actinolite (when fibrous), crocidolite (fibrous riebeckite), anthophyllite (when fibrous), and amosite (fibrous cummingonite-grunerite). Chrysotile is the most common asbestos mineral in California and belongs to the serpentine mineral group. The remaining asbestos minerals belong to the amphibole mineral group. Asbestos also refers to an industrial product obtained by mining and processing deposits of the asbestiform minerals listed above.

Serpentine --The serpentine group minerals are hydrous magnesium silicate minerals, of which lizardite, antigorite and chrysotile are the most common. Chrysotile forms crystals that are naturally fibrous. These fibers occur in serpentinite in small veins, where the fibers are oriented perpendicular to the vein walls (cross-fiber veins) or parallel to the vein walls (slip-fiber veins).

Chrysotile fibers are one type of asbestos. The other serpentine minerals usually do not occur as fibrous crystals and are not asbestos minerals. Although the term serpentine is commonly used to refer to the rock serpentinite, it is actually the name of the group of minerals that makes up the rock serpentinite.

Serpentinite -- Serpentinite is a rock consisting almost entirely of one or more serpentine minerals. Serpentinite is not identified as a separate rock unit on this map but is likely to be found within areas of ultramafic rock shown on the map. This rock type has a greasy or waxy appearance and may be dark to light green, brown, yellow or white. In addition to serpentine minerals, small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite maybe present. Small amounts of chrysotile asbestos are common in serpentinite because chrysotile is one of the serpentine group minerals. Tremolite-actinolite asbestos (amphibole asbestos) may also occur with serpentinite, but such occurrences are less common than chrysotile asbestos.

DISCLAIMER
The State of California and the California Department of Conservation, Division of Mines and Geology make no representations or warranties as to the actual presence or absence of natural asbestos at specific sites within or near the ultramafic rock areas shown on this map. Further, the State and the Department make no representations or warranties regarding the accuracy of the data shown on the map. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

VIEWING AND PRINTING TIPS
A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos

Viewing the map

This map opens up in Acrobat Reader in “fit window” view. When you wish to zoom in and look at areas at a higher magnification, there are several ways to do so:

1. Use the magnifying glass icon on the left-hand tool bar and zoom in at preset increments, *or*
2. Click on the **View** pull-down menu for a variety of zoom options, *or*
3. Use the pop-up menu on the lower left toolbar to set exact zoom parameters.
4. To zoom back out with the magnifying glass icon active, press ctrl/alt/spacebar and click the mouse, *or*
5. Go back to **View** pull-down menu and change view, *or*
6. Use pop-up menu on the lower left toolbar to change view.

Printing the map

If you try to print this map, you’ll find that Acrobat Reader will simply print the entire map at your printer’s default page size. The resulting print isn’t very useful if you can only print to an 8.5 x 11 inch page. To print portions of this map at 1:1,100,000 (the original scale of the map) you’ll need Acrobat Reader and a graphics program such as Microsoft Paint, Paint Shop Pro, Corel Draw or Mac Paint. Armed with these tools, do the following:

1. Use Adobe Acrobat Reader to open map file.
2. To select an area, open the document and zoom to 100% at the area of interest. Hold mouse button down (if you have three buttons on your mouse, click on the left one) on the **Text Select** tool button, which will expand to three buttons. Choose the “grab graphics” tool button (last one on the right). Using this tool, select your area of interest..
3. Click on the **Edit** pull-down menu and select **Copy**. This places a copy of the selected area onto your computer’s clipboard. At this point, you can close Adobe Acrobat if your paint program requires the memory to run. If not, you can leave it open.
4. Open your paint program. In Microsoft Paint, make sure that the image area is at least as wide or as tall as the map area that you’ve selected. Choose the **Edit** pull-down menu, and click on **Paste**. In Paint Shop Pro, select **Paste as New Image**. The selected map area will be pasted into the view and can be printed. This “bitmap” image may appear “pixilated” or have jagged edges.

To print the entire map at full-scale requires a large-format color plotter. If you don’t have one, many reproduction firms do, and can plot the file for you.

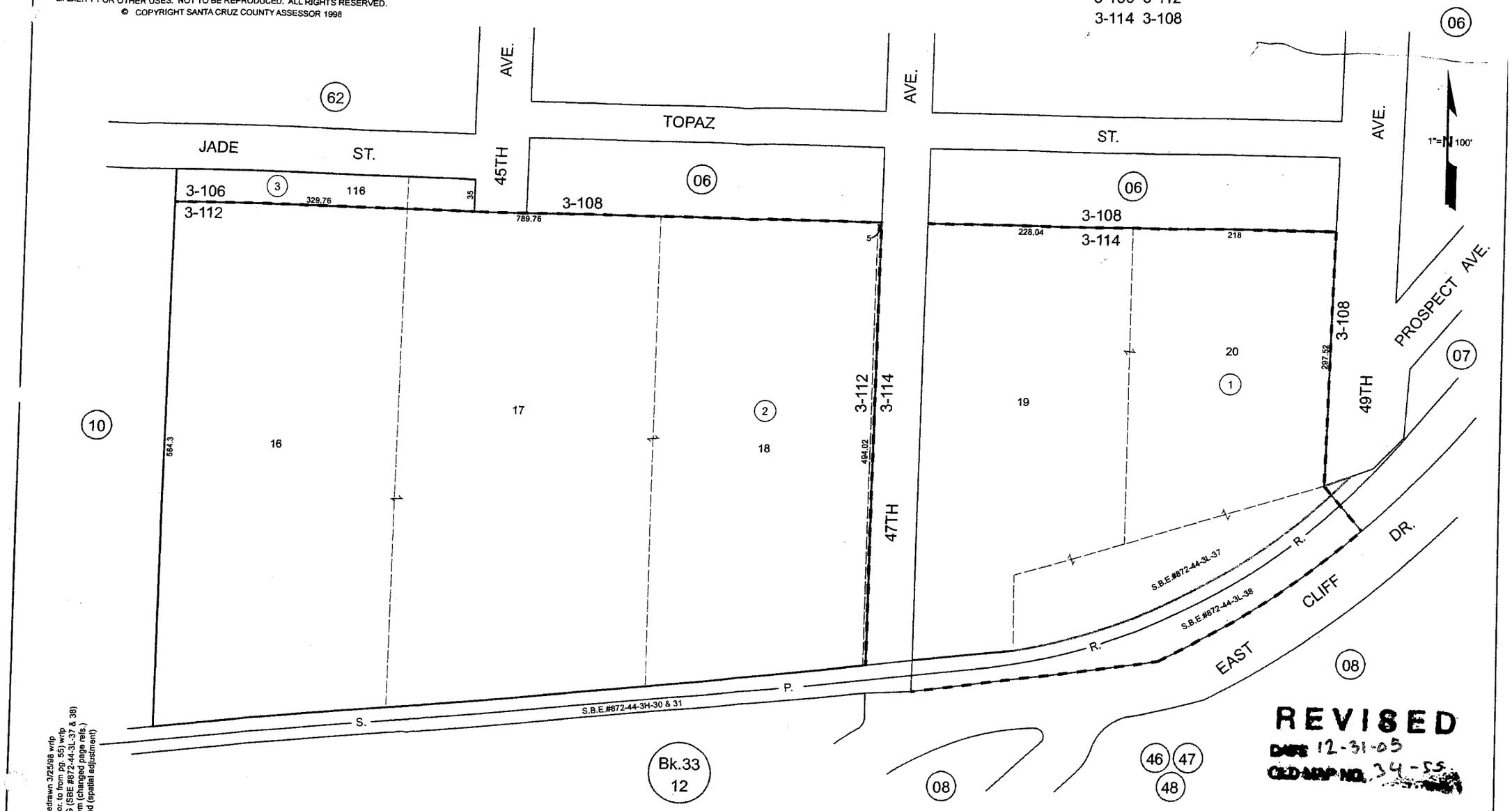
FOR TAX PURPOSES ONLY

THE ASSESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED.
© COPYRIGHT SANTA CRUZ COUNTY ASSESSOR 1998

CITY OF CAPITOLA

Tax Area Code
3-106 3-112
3-114 3-108

34-55



REVISED
DATE 12-31-05
OLD MAP NO. 34-55

Electronically Redrawn 3/25/98 wrtp
Rev. 3/25/98 (Por. to from pg. 55) wrtp
Rev. 8/20/98 GG (SBE #872-44-3L-37 & 38)
Rev. 4/17/01 mvm (changed page refs.)
Rev. 12/31/05 md (spatial adjustment)

Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 34-55
City of Capitola
County of Santa Cruz, Calif.

Ensuring safe, quality drinking water

Drinking water standards are established by the U.S. Environmental Protection Agency (USEPA) and California Department of Health Services (DHS). In order to be called safe, water supplies must stay within USEPA and State maximums when measured for certain constituents. This Water Quality Report communicates whether there is a detectable presence and the levels of each of the tested constituents in our water supply.

During the past year, the District tested for over 150 constituents in order to ensure your water meets State and Federal drinking water standards. You can review the data for each of the aquifers in the table provided in this report. These test results reflect all of our groundwater wells. Only those constituents that had detected levels are shown. At the time of testing, all were within established primary health standards.

FOR ADDITIONAL INFORMATION: For information about this report, Source Water Assessments, general District news, or your water quality in general, please contact the District at (831) 475-8500 or visit our web site at www.SoquelCreekWater.org.

There is also a wealth of information on the Internet about Drinking Water Quality and water issues in general. Two good sites include:

California Department of Health Services, Division of Drinking Water and Environmental Management
www.dhs.cahwnet.gov/ps/ddwem

U.S. Environmental Protection Agency
www.epa.gov/safewater/

IF YOU ARE A LANDLORD OR MANAGE A MULTI-UNIT DWELLING, please contact us to order as many additional copies of the report as you need to ensure your tenants receive this important information.

INFORMACION MUY IMPORTANTE: Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien, o llamenos a 475-8500.

GETTING INVOLVED IN DECISIONS THAT AFFECT YOUR DRINKING WATER: The District encourages public participation in its decision-making process. The District is governed by a five-person, publicly elected Board of Directors. The Board meets the first and third Tuesday of each month at 7:00 p.m. at 5180 Soquel Drive in Soquel.

Board of Directors
Bruce Daniels, President
Dr. Thomas LaHue, Vice President
Dr. Don Hoernschemeyer
Daniel F. Kriege
Dr. Bruce Jaffe

Laura D. Brown, General Manager

What's on Tap is an in-house publication printed bi-monthly for the customers of the District.

SOQUEL CREEK WATER DISTRICT

WHAT'S ON TAP
Volume 9, No. 3 *May/June 2007*

2006 Consumer Confidence/ Water Quality Report

Soquel Creek Water District

Feeling confident about the water you drink

Providing safe drinking water to our customers is our first priority. We are proud to report that the the District continues to meet or exceed established drinking water health standards set by the U.S. Environmental Protection Agency (USEPA) and the California Department of Health Services (DHS).

This annual consumer confidence/water quality report presents the results of test data from all of our groundwater wells that pump water from the Purisima and Aromas Red Sands aquifers. All test samples are collected and reported in accordance with standards and requirements established by the USEPA and DHS. This year's report covers calendar year 2006 water quality testing.

The presence and level of contaminants varies throughout the District. If you have questions, suggestions, or comments regarding this report, or questions regarding the specific water quality for your neighborhood, please contact the District at (831) 475-8500. Additional copies of this report are available upon request.

Source water assessments

In 2002, the District completed its source water assessment of the underlying Purisima and Aromas Red Sands Aquifers. A source water assessment lists possible contaminating activities and the susceptibility of identified contamination threats that might affect the quality of our drinking water supplies.

Aromas Red Sands Aquifer supplies are considered to be most vulnerable to on-site residential septic systems and potential leakage from sewer lines. Purisima Formation supplies are considered to be most vulnerable to contamination from dry cleaners, historic and active automobile gas stations, sewer collection systems, home manufacturing, grazing, known contaminant plumes, photo processing/printing establishments, and utility stations/maintenance areas. The District monitors potential contamination in the vicinity of its wells and works with other agencies to proactively protect the quality of its groundwater resources.

Copies of the Executive Summary for each assessment are available at www.SoquelCreekWater.org, and both the Executive Summaries and the full reports are available at the District headquarters office.

Immuno-compromised people

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

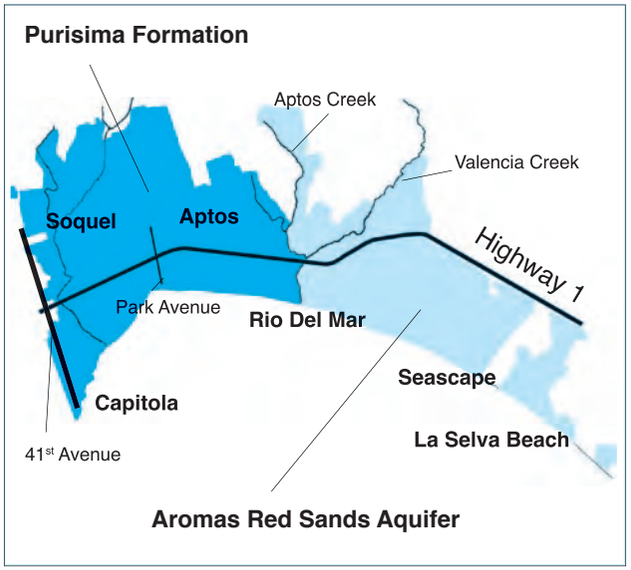
USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Basic information about drinking water contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Health Services (DHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include:	Possible Sources:
Mircrobial contaminants, such as viruses and bacteria	*Sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
Inorganic compounds, such as salts and metals	*Naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.*
Radioactive contaminants	*Can be naturally occurring or be the result of oil and gas production or mining activities.*
Pesticides and herbicides	*May come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
Organic chemical contaminants, including synthetic and volatile organic chemicals	*By-products of industrial processes and petroleum production, and can also come from gasoline stations, urban stormwater runoff, and septic systems.*



Where your water comes from

In 2006, District customers received water from 16 wells pumping from two underground aquifers. Both sources meet all current drinking water health standards.

Delivered water represents a blend from several wells. In general, the average amounts of contaminants shown in the table below are the most representative of the water quality received by customers.

PURISIMA FORMATION

The Purisima Formation provides water for Capitola, Soquel, and Aptos. Because this water is high in iron and manganese, it is treated to remove these minerals.

AROMAS RED SANDS AQUIFER

Customers in Rio Del Mar, Seascape, and La Selva Beach receive water from the Aromas Red Sands Aquifer.

2006 Soquel Creek Water District Water Quality Analysis Table

The following key terms will help you interpret the data listed in the table on the right.

Primary Drinking Water Standards: MCLs and MRDLs (see definitions below) for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the United States Environmental Protection Agency (USEPA).

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MRDL (Maximum Residual Disinfectant Level): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.

Measurements: Water is sampled and tested throughout the year. Detected constituents are measured in parts per million (ppm) and parts per billion (ppb).

Primary Standards - Health Standards	MCL	MCLG, or (PHG)	Range of Detections	Average Amounts	Range of Detections	Average Amounts	Typical Sources of Contaminant
Microbiological Constituents - Tested in 2006			**Purisima Formation**		**Aromas Red Sands**		
Present/Absent % Positive *	5	0	ND - 3	0.71	ND	ND	Naturally present in the environment
Disinfection Byproducts - Tested in 2006							
Trihalomethanes, Total * (TTHMs) (ppb)	80	NS	3.9 - 50	21.8	ND - 61	7.8	By-product of chlorination
Chlorine Residual (ppm)	4.0	4.0	0 -1.70	0.49	0 - 2.0	0.58	Drinking water disinfectant added for treatment
Haloacetic Acid (five)* (HAA5) (ppb)	60	NS	ND - 6.9	2.7	ND - 9.4	1.0	By-product of chlorination
Inorganic Constituents - Tested in 2006							
Arsenic (a) (ppb)	10	0	ND - 4.6	1.0	ND	ND	Erosion of natural deposits
Chromium total (ppb)	50	0	ND	ND	ND - 37	17	Erosion of natural deposits
Fluoride (ppm)	2	1	0.20 - 0.40	0.2	ND - 0.10	0.08	Erosion of natural deposits
Nitrate (as NO_3) (ppm)	45	(45)	ND	ND	4.0 - 37.0	13	Runoff/leaching from fertilizer/septic
Radioactive Constituents - Tested in 2006							
Alpha Activity, Gross (pCi/L)	15	0	0.09 - 0.60	0.2	0.09 - 0.80	0.5	Erosion of natural deposits
Radium 228 (pCi/L)	5	0	<1.0 - 2.93	1.0	ND	ND	Erosion of natural deposits
Secondary Standards - Aesthetic Standards - Tested in 2006							
Chloride (ppm)	500	NS	22 - 83	39	16 - 32	23	Runoff/leaching from natural deposits
Iron** (ppb)	300	NS	ND - 320	66	ND	ND	Leaching from natural deposits
Manganese** (ppb)	50	NS	ND - 34	3.8	ND	ND	Leaching from natural deposits
Odor-Threshold (units)	3	NS	1.0 - 1.0	1.0	1.0 - 1.0	1.0	Naturally occurring organic materials
Turbidity (b) (units)	5	NS	<0.1 - 2.0	0.4	<0.1 - 0.40	0.1	Soil runoff
Specific Conductance (micromhos)	1,600	NS	480 - 820	551	200 - 500	363	Substances that form ions when in water
Total Dissolved Solids (TDS)	1,000	NS	330 - 670	384	170 - 340	270	Runoff/leaching from natural deposits
Unregulated Constituents - Tested in 2006							
Alkalinity (c) (ppm)	NS	NS	140 - 260	170	90 - 170	138	A measure of the capacity to neutralize acid
Bicarbonate (HCO_3) (ppm)	NS	NS	170 - 320	207	110 - 210	170	Naturally occurring mineral
Calcium (ppm)	NS	NS	36 - 110	48	21 - 34	29	Leaching from natural deposits
Hardness (c) (ppm)	NS	NS	150 - 380	208	100 - 220	167	Naturally occurring
Hexavalent Chromium (Cr6) (ppb)	NS	NS	ND	ND	ND - 37	17	Naturally occurring chromium bearing minerals
Magnesium (ppm)	NS	NS	14 - 47	21	13 - 33	24	Naturally occurring mineral
pH (units)	NS	NS	7.5 - 8.0	7.8	7.8 - 8.0	8.0	A measure of the acidity or alkalinity
Potassium (ppm)	NS	NS	3.7 - 8.0	4.8	<2 - 2.8	2.0	Naturally occurring mineral
Sodium (ppm)	NS	NS	30 - 71	40	11 - 23	19	Runoff/leaching from natural deposits

Lead and Copper Action Levels at Residential Tap - Tested in 2004

Every 3 years, at least 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2004. None of the samples exceeded the regulatory action level. A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding Action Level/Number of Sites	Typical Source of Contaminant
Copper (ppm)	1.3	0.17	0.39	0/30	Corrosion of household plumbing
Lead (ppb)	15	2	5	0/30	Corrosion of household plumbing

Footnotes

ND = None Detected; NS = No Standard; pCi/L = Picocuries per liter (a measure of radioactivity); ppb = Parts per billion; ppm = Parts per million.
* = Sampled within the distribution system. All other contaminants are sampled for at the well head.
** = Sampled immediately after treatment.
(a) Arsenic: While your drinking water meets the current standard for arsenic, water from some wells contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The California Department of Health Services continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.
(b) Turbidity: Turbidity is the measure of cloudiness in the water and can mask the presence of pathogens.
(c) Measured in $CaCO_3$ equivalents.

APPENDIX M

TERMINOLOGY

TERMINOLOGY

The following provides definitions and descriptions of certain terms that may be used in this report. Italics indicate terms that are defined by ASTM Standard Practice E 1527-05. The Standard Practice should be referenced for further detail (such as the precise wording), related definitions or additional explanation regarding the meaning of terms.

recognized environmental condition(s) (REC) - the presence or likely presence of any *hazardous substances* or *petroleum products* on a *property* under conditions that indicate an existing release, a past release, or a *material threat* of a release of any *hazardous substances* or *petroleum products* into structures on the *property* or into the ground, ground water, or surface water of the *property*. The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions.

.

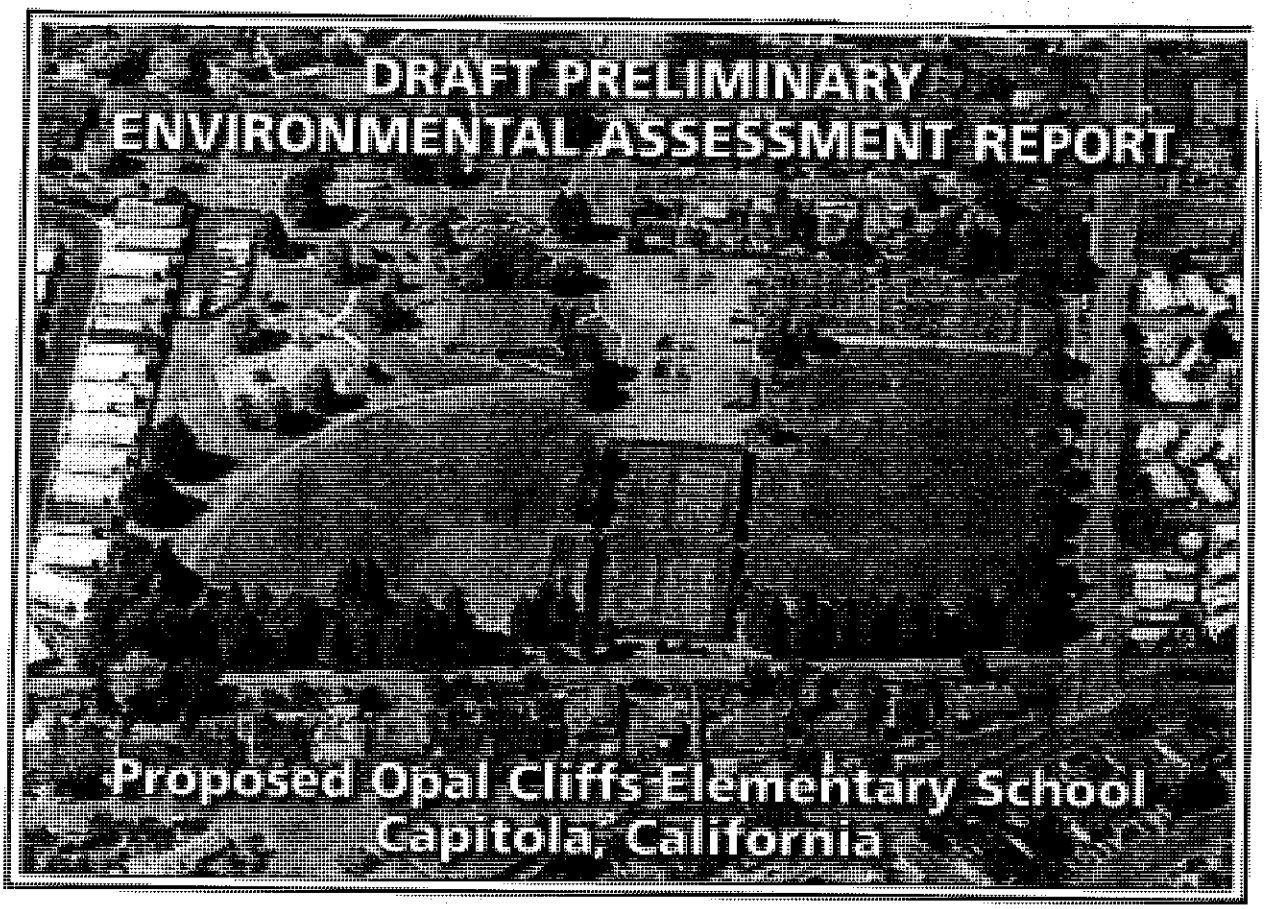
de minimis conditions – are conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not *recognized environmental conditions*.

historical recognized environmental condition(s) (HREC) - environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. The final decision rests with the *environmental professional* and will be influenced by the current impact of the *historical recognized environmental condition* on the *property*. If a past release of any *hazardous substances* or *petroleum products* has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered a *historical recognized environmental condition*.

material threat – a physically observable or *obvious* threat which is reasonably likely to lead to a release that, in the opinion of the *environmental professional*, is threatening and might result in impact to public health or the environment. An example might include an aboveground storage tank system that contains a *hazardous substance* and which shows evidence of damage such that it may cause or contribute to tank integrity failure with a release of contents to the environment.

threat to human health or the environment – a substantial risk of harm to public health or the environment resulting from the presence or likely presence of an existing release, a past release, or a *material threat* of a release of any *hazardous substances* or *petroleum products* into structures on the *property* or into the ground, ground water, or surface water of the *property*. An example might include a release of a *hazardous substance* in concentrations exceeding applicable governmental agency standards under conditions that could reasonably and foreseeably result in substantial exposure to humans or substantial damage to natural resources. The risk of that exposure or damage would represent a threat to human health or the environment.

generally would not be the subject of an enforcement action – the likelihood that an environmental condition would not be subject to enforcement action if brought to the attention of appropriate governmental agencies. If the circumstances suggest an enforcement action would be less likely than not, then the condition is considered to be generally not the likely the subject of an enforcement action.



PUBLIC COPY
Do Not Remove

PREPARED FOR:

SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
620 MONTEREY AVENUE
CAPITOLA, CALIFORNIA 95010

PREPARED BY:

GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA 94550

GEOCON

GEOCON PROJECT NO. E8460-06-01

FEBRUARY 2009

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8460-06-01
February 19, 2008

Ms. Sherree Brown
Assistant Superintendent, Business Development
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

Subject: OPAL CLIFFS ELEMENTARY SCHOOL SITE
CAPITOLA, CALIFORNIA
DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

Dear Ms. Brown:

In accordance with your request, we have performed a Preliminary Environmental Assessment (PEA) for the proposed 0.8-acre Opal Cliffs Elementary School (the Site) located west of 47th Avenue and south of Jade Street in Capitola in California. The Client, the Soquel Union Elementary School District, requested the performance of a PEA per the requirement of the California Department of Toxic Substances Control (DTSC) to confirm or refute the potential presence of residual pesticides and arsenic in soil at the Site resulting from historical agricultural activities.

The accompanying report presents the details of the PEA including an evaluation and discussion of findings in general accordance with DTSC PEA guidelines. Please contact us if you have any questions concerning the contents of this PEA Report, or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

John Love, PG
Sr. Project Geologist

PROFESSIONAL GEOLOGIST
JOHN W. LOVE
No. 6315
Expires 11-30-10
STATE OF CALIFORNIA

John Juhrend, CEG, CHG
Vice President

JWL:JJ:kc

(2) Addressee
(2) DTSC, Ms. Kamili Siglowide

TABLE OF CONTENTS

DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

I. INTRODUCTION 1
A. Purpose and Scope of Services 1

II. SITE DESCRIPTION 4
A. Site Identification Information 4
B. Site Maps 5

III. BACKGROUND 6
A. Site Status/Historical Site Information 6
B. Hazardous Substance/Waste Management Information 6

IV. APPARENT PROBLEM 7

V. ENVIRONMENTAL SETTING 8
A. Factors Related to Soil Pathways 8
B. Factors Related to Water Pathways 8
C. Factors Related to Air Pathways 8

VI. SAMPLING ACTIVITIES AND RESULTS 10
A. Summary of Activities 10
B. Presentation of Data 11
C. Discussion of Results 11
D. Laboratory QA/QC 11

VII. CONCLUSIONS AND RECOMMENDATIONS 12
A. Summary and Conclusions 12

IX. LIMITATIONS 13

X. REFERENCES AND BIBLIOGRAPHY 14

FIGURES

1. Vicinity Map
2. Site Plan
3. Site Plan for Proposed Opal Cliffs Elementary School
4. Sample Location Map

TABLES

1. Summary of Soil Analytical Data – Organochlorine Pesticides and Arsenic

APPENDICES

A. Regulatory Correspondence and Public Notice
B. Laboratory Reports and Chain-of-custody Documentation
C. DTSC Information Advisory – Clean Imported Fill Material

DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

I. INTRODUCTION

This report has been prepared by Geocon Consultants, Inc. on behalf of the Soquel Union Elementary School District (District). The report presents the findings of a Preliminary Environmental Assessment (PEA) of the proposed new K-6 school facility (the Site) located west of 47th Avenue and south of Jade Street in Capitola in California (Figure 1).

The site to be developed as the proposed Opal Cliffs Elementary School is an approximately 0.8 acre area that is part of a larger 9.6 acre parcel owned by the District. The 9.6-acre parcel is currently developed with a one-story building occupied by the Capitola Community Center (4400 Jade Street), a children's playground, baseball field, two tennis courts, a basketball court, a separate restroom building, a community garden area, and a soccer field.

The 0.8-acre area to be developed as the new Opal Cliffs Elementary School is located in the northeast corner of the 9.6-acre parcel and presently exists as a community garden, as well as part of a soccer field and park area consisting of concrete sidewalks, a grass area, and trees.

The 0.8-acre site is bounded to the north by residential lots, to the east beyond 47th Avenue by a mobile home park and residential lots, to the south by the existing soccer field, and to the west by paved parking areas for the existing community center. A Site Plan depicting the approximate site boundaries and adjacent development is presented as Figure 2.

It is understood that the District will acquire the Site for development of a K-6 school facility. Proposed school facility improvements include a classroom/administration building, a classroom building, and play areas. A Site Plan for the Proposed Opal Cliffs Elementary School is provided as Figure 3.

A. Purpose and Scope of Services

We reviewed the Diablo Green Consulting, Inc. (DGC) *Phase I Environmental Site Assessment, 4400 Jade Street, Capitola*, dated September 25, 2007.

The 9.6-acre parcel known as the Opal Cliffs Site existed as undeveloped land prior to its acquisition by the District in 1956. The 0.8-acre site (the subject of this workplan) is located in the northeast corner of the 9.6-acre parcel.

The District's 9.6-acre parcel was reportedly undeveloped until 1981 when construction of the existing community park was initiated. The 1982 aerial photograph indicates that the tennis courts and grassy areas of the park (including the soccer field) had been constructed and planted at that time. Sometime between 1982 and 1987 the baseball field and playground areas were constructed. The community

center building was completed in 1987. The community garden area, which covers most of the new Opal Cliffs School site, was reportedly started sometime around 1998. Prior to 1998, the new school site existed as undeveloped land, with the exception of the south portion of the site that was developed with the north end of the soccer field in 1981 or 1982. Gardening activities were not conducted in the community garden when the site inspection for the Phase I ESA was conducted on September 10, 2007 because of the pending development of the area as an elementary school.

The community garden area was used by individuals of the community to presumably plant fruits and vegetables for consumption purposes; however it was not reported in the *Phase I Environmental Site Assessment* as to what crops were planted or whether pesticides were used in the process.

Due to the historical agricultural activity located at the Site, the Department of Toxic Substances Control (DTSC) required the completion of a PEA to confirm or refute the potential presence of residual pesticides and arsenic in soil at the Site.

Geocon, District, and DTSC staff conducted a PEA scoping meeting on September 24, 2008. We subsequently submitted a Draft PEA Workplan dated November 28, 2008, and a Revised PEA Workplan dated January 5, 2009. The DTSC approved the project workplan submittals in correspondence dated December 31, 2008 and January 21, 2009. Copies of the DTSC PEA Workplan review and approval correspondence are presented in Appendix A.

We performed the following PEA scope of services:

Pre-field Activities

- Prepared a Revised PEA Workplan dated January 5, 2009, to present details regarding the field sampling and analytical protocols. The Revised PEA Workplan further included a site-specific Health and Safety Plan to provide guidelines on the use of personal protective equipment and health and safety procedures implemented during the proposed field activities.
- Provided five-day notification to the existing property owners (via public notice flyer), DTSC and District personnel prior to initiating the onsite sampling activities. A copy of the public notice flyer distributed to adjacent property owners is presented in Appendix A.
- Retained the services of Advanced Technology Laboratories (ATL, ELAP #1838) to perform the analytical testing of soil samples.

Field Activities and Analytical Testing

We performed the following field activities on January 29, 2009:

- Collected four surface (0 to 6 inch deep) soil samples (SS-1 through SS-4) within the Site. The soil samples were obtained for analysis of organochlorine pesticides and arsenic.

The approximate sampling locations are presented on Figure 4. Summaries of the soil analytical data are presented on Table 1.

II. SITE DESCRIPTION

The Site to be developed as the proposed Opal Cliffs Elementary School is an approximately 0.8 acre area that is part of a larger 9.6 acre parcel owned by the District. The 9.6-acre parcel is currently developed with a one-story building occupied by the Capitola Community Center (4400 Jade Street), a children's playground, baseball field, two tennis courts, a basketball court, a separate restroom building, a community garden area, and a soccer field.

The 0.8-acre area to be developed as the new Opal Cliffs Elementary School is located in the northeast corner of the 9.6-acre parcel and presently exists as a community garden, as well as part of a soccer field and park area consisting of concrete sidewalks, a grass area, and trees (see Figure 2).

The 0.8-acre site is bounded to the north by residential lots, to the east beyond 47th Avenue by a mobile home park and residential lots, to the south by the existing soccer field, and to the west by paved parking areas for the existing community center.

Site topography is essentially flat and level. Based on the 1980 United States Geological Survey (USGS) topographic map, approximate site elevation is approximately 45 feet above mean sea level (MSL). Based on our observations, estimated elevation differential across the Site is approximately two feet or less. It appears that the majority of the Site was not graded with the surrounding development and is in a general fallow condition.

A. Site Identification Information

Site Name:	Proposed Opal Cliffs Elementary School
Contact Person:	Ms. Sherree Brown
Site Address:	Opal Cliffs Site located west of 47th Avenue and south of Jade Street in Capitola, California
Mailing Address:	Soquel Union Elementary School District 620 Monterey Avenue Capitola, California 95010
Telephone Number:	(831) 464-5630
Other Site Names:	None
EPA ID Number:	None
CalSites Database Number:	None
Assessor's Parcel Numbers (APN):	Portion of APN 034-551-02
Township, Range, and Meridian:	T11S, R1W, Mount Diablo Meridian
Land Use and Zoning:	Community Garden / Public Facilities - School

B. Site Maps

A Vicinity Map is provided as Figure 1. A Site Plan showing the surrounding areas is provided as Figure 2, and the Proposed Opal Cliffs School site layout is shown on Figure 3. The soil sample locations are provided on Figure 4.

III. BACKGROUND

A. Site Status/Historical Site Information

Business Type:	There is no documentation indicating that a business was operated on the Site.
Years of Operation:	None established.
Prior Land Use:	It appears that the Site existed as undeveloped land until 1981. Since that time it has been used as a community park.
Facility Ownership/Operators:	No onsite facilities.
Property Owners:	Soquel Union Elementary School District
Surrounding Land Use:	The Site is bordered by residential lots to the north, a parking lot for the Jade Street Park to the west, the Jade Street Park soccer field to the south and 47th Avenue to the east.

The Site existed as undeveloped land prior to its acquisition by the District in 1956. The District's 9.6-acre parcel was reportedly undeveloped until 1981 when construction of the existing community park was initiated.

The 1982 aerial photograph indicates that the soccer field had been constructed and planted at that time. The community garden, which covers most of the new Opal Cliffs School site, was reportedly started sometime around 1998. Prior to 1998, the new school site existed as undeveloped land, with the exception of the south portion of the site that was developed with the north end of the soccer field in 1981 or 1982.

Gardening activities were not conducted in the community garden when the site inspection for the Phase I ESA was conducted on September 10, 2007 because of the pending development of the area as an elementary school.

The community garden area was used by individuals of the community to presumably plant fruits and vegetables for consumption purposes; however it was not reported in the *Phase I Environmental Site Assessment* as to what crops were planted or whether pesticides were used in the process.

B. Hazardous Substance/Waste Management Information

There is no evidence or documentation of hazardous materials/wastes used on or disposed of at the Site.

IV. APPARENT PROBLEM

DTSC requested a PEA to determine the potential presence of residual pesticides and arsenics in soil at the Site due to historical agricultural activities. Specific contaminants of concern (COCs) include the following:

- Chlorinated pesticides associated with historical agricultural activities; and
- Arsenic associated with pesticides.

V. ENVIRONMENTAL SETTING

The Site consists of an approximately 0.8-acre rectangular-shaped area located in the northeast corner of the Jade Street Park (see Figure 2). The Jade Street Park is approximately 9.6-acres in size and is owned by the District. When the Opal Cliffs Elementary School is completed it will be surrounded by the existing facilities of Jade Street Park to the west and south, residential properties to the north, and 47th Avenue to the east. East of 47th Avenue is a mobile home park.

Proposed school facility improvements include a classroom/administration building, a classroom building, and play areas.

A. Factors Related to Soil Pathways

The Site is relatively level, surrounded by residential development to the north, the existing Jade Street Park to the west and south, and 47th Street to the east. The results of recent sampling efforts at the Site have not revealed evidence of conditions that could lead to adverse environmental impacts. Accordingly, no measures have been implemented to restrict access to the Site.

In general, surficial site soils (0 to 6 inches) encountered during the recent soil sampling activities consisted of loose, brown, silty sand.

B. Factors Related to Water Pathways

Groundwater was not encountered during the recent investigation; however information provided in the *Phase I Environmental Site Assessment* indicates that groundwater at properties located within one-eighth to one-quarter mile from the Site was measured at depths ranging from 46 to 86 feet.

If organochlorine pesticides and arsenic originated in surficial soils at the Site, it is reasonable to assume that there is a low likelihood that these contaminants would have impacted groundwater beneath Site given the expected depth to groundwater and the immobile nature of organochlorine pesticides and arsenic in soil. Furthermore, drinking water at the Site will be provided by the Soquel Creek Water District, which obtains their water supply from 17 production wells that are regularly tested for 150 contaminants.

Based on the lack of identified groundwater impacts and the planned use of municipal supplied domestic water, further evaluation of the groundwater pathway is not warranted.

C. Factors Related to Air Pathways

Sampling data does not exist to document a release of a hazardous substance to the atmosphere, nor has a threatened release been identified. The only air-related pathway under consideration is airborne soil particles generated during and/or after onsite grading operations. Construction of pavement, structural

and landscape improvements will minimize, but not completely eliminate, the potential for dust generation following completion of the project.

VI. SAMPLING ACTIVITIES AND RESULTS

A. Summary of Activities

The field sampling activities were performed on January 29, 2009, in accordance with the revised PEA Workplan dated January 5, 2009, and subsequent dialog with DTSC personnel on January 28, 2009. The approximate sampling locations are depicted on the Sample Location Map, Figure 4.

Four discrete surface (0 to 6 inches deep) soil samples (SS-1 through SS-4) were collected at the 0.8-acre site. The soil samples were collected using a pre-cleaned stainless steel trowel and placed into laboratory-provided glass jars. The samples were analyzed for organochlorine pesticides and arsenic following Environmental Protection Agency (EPA) Test Methods 8081A and 6010B, respectively.

Organochlorine pesticides were reported as non-detect for all target analytes. Arsenic was reported at a concentration of 1.6 milligrams per kilogram (mg/kg) in soil sample SS-1, and it was reported as below the laboratory reporting limit concentration of 1.0 mg/kg in the other three samples.

Per DTSC requirements, background soil samples were not required during this investigation unless arsenic was reported at or above a concentration of 12 mg/kg.

Quality Assurance/Quality Control (QA/QC) Sampling Procedures. QA/QC sampling procedures were adhered to as outlined in the project Workplan. The sampling equipment utilized during the field activities was decontaminated in an Alconox detergent solution and rinsed in tap and de-ionized water prior to and between each use.

One rinse blank sample was collected between sample locations SS-2 and SS-3, and one duplicate soil sample was collected from SS-2. The rinse blank sample was reported as non-detect for organochlorine pesticides and arsenic. The duplicate soil sample collected from SS-2 was reported as non-detect for organochlorine pesticides and arsenic, the same as the primary sample collected from this sample location.

Each of the sample containers were labeled with a unique sample identification number, depth designation, sample time and date, and project number with an indelible marker. The samples were placed in chilled cooler and transported to the laboratory under chain-of-custody procedures. Sample jars were carefully arranged and packaged to reduce the potential for breakage during transport.

B. Presentation of Data

A summary of the organochlorine pesticides and arsenic soil sample analytical data is presented in Table 1. The laboratory reports and chain-of-custody documentation are presented in Appendix B.

C. Discussion of Results

The following sections summarize the analytical data based on the COCs.

Organochlorine Pesticides. Organochlorine pesticides were reported as non-detect during this investigation. Due to the lack of detectable concentrations, organochlorine pesticides will not be further evaluated with respect to human health risk screening.

Arsenic. Arsenic was reported as non-detect in the near surface soil samples collected from SS-2 through SS-4. However, it was reported in the soil sample collected from SS-1 at a concentration of 1.6 mg/kg.

The arsenic concentration reported in the SS-1 soil sample likely represents background levels present at the Site. According to the *Background Concentrations of Trace and Major Elements in California Soils,* prepared by the Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996, the expected background concentration of arsenic in California soils is 3.5 mg/kg. The highest arsenic concentration (1.6 mg/kg) reported during this investigation is less than half the expected background concentration.

Due to the non-detectable and one low arsenic concentration, arsenic will not be further evaluated with respect to human health risk screening.

D. Laboratory QA/QC

ATL is certified by the California Department of Health Services for all of the analyses performed for this PEA. We reviewed the analytical laboratory QA/QC provided with the reports. These data show acceptable non-detect results and surrogate recoveries for the method blanks and acceptable recoveries and relative percent differences for the matrix spikes and matrix spike duplicates. Based on the laboratory QA/QC data, no qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Summary and Conclusions

Sampling activities have not identified a release or a threat of a release of hazardous wastes or substances at the Site. Arsenic was reported in one soil sample at a concentration of 1.6 mg/kg; however this concentration is within expected background concentrations for soils in California.

Based on the analytical data generated, soil materials generated from onsite excavations should be suitable for use as fill materials. If required, proposed import fill material sources should be screened in accordance with the protocols outlined in the *Information Advisory - Clean Imported Fill Material* prepared by the DTSC, dated October 2001. A copy of the DTSC advisory is presented in Appendix C.

Based on the lack of identified COCs that present an unacceptable human health risk or require remedial measures, Geocon, on behalf of the District, requests that the DTSC issue *No Further Action* status for the Site.

IX. LIMITATIONS

This PEA report has been prepared solely for the District, in consideration of the District's requirements. Other parties may rely on the findings and conclusions of the report for informational purposes only. However, Client and other parties who may rely on the findings and conclusions of the report should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

The information contained herein is only valid as of the date of the report and would require an update to reflect additional site activities. Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee of the results of the study is implied within the intent of this report or any subsequent report, correspondence or consultation, either express or implied. The services performed were conducted in accordance with the local standard of care in the geographic region at the time the services were rendered.

X. REFERENCES AND BIBLIOGRAPHY

Geocon Consultants, Inc.: Workplan For Preliminary Endangerment Assessment, Proposed Opal Cliffs Elementary School, Capitola, California, dated November 28, 2008.

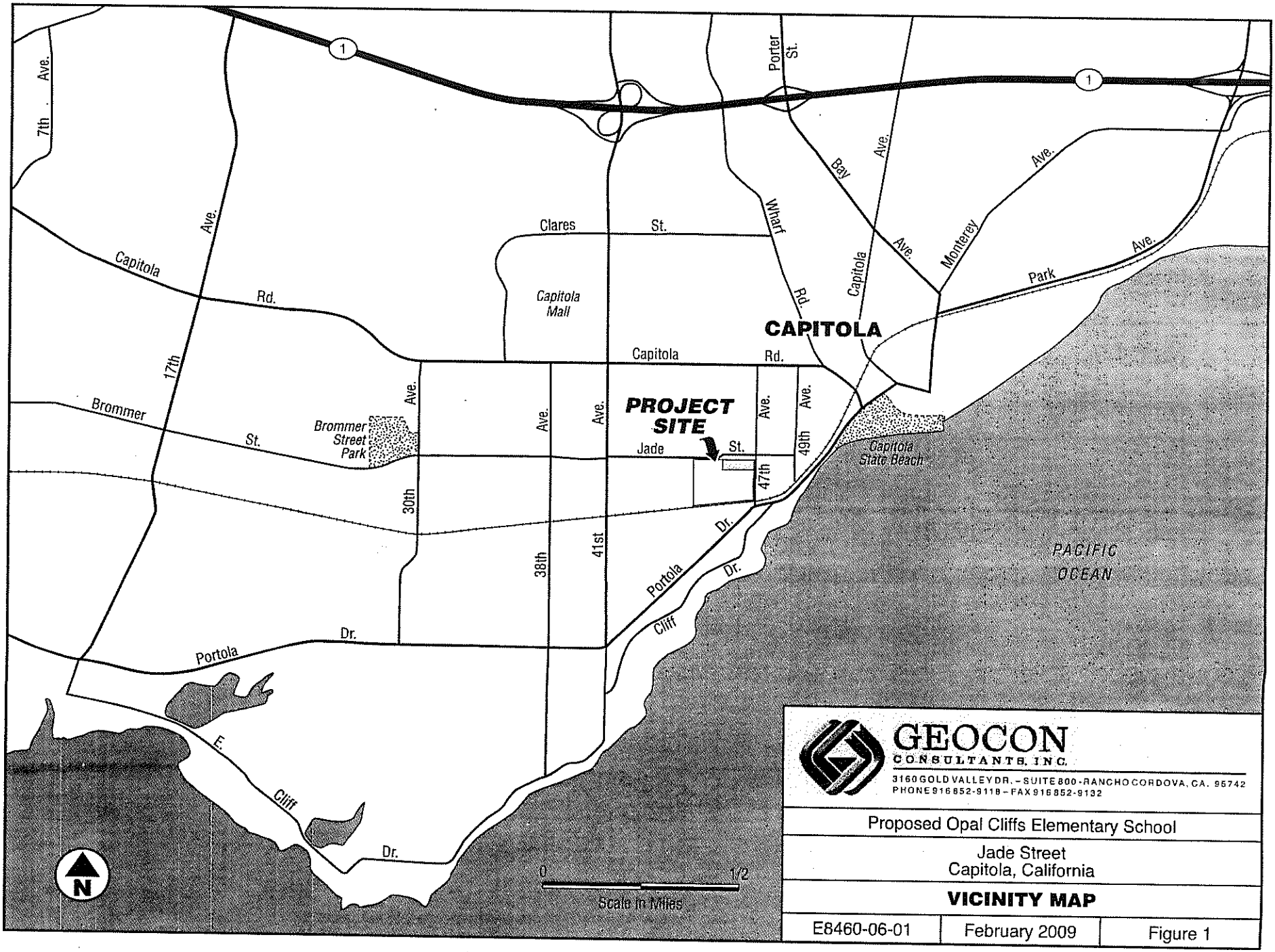
Geocon Consultants, Inc.: Revised Workplan for Preliminary Endangerment Assessment, dated November 28, 2008, revised January 5, 2009.

State of California Environmental Protection Agency, Department of Toxic Substances Control: Preliminary Endangerment Assessment Guidance Manual, 1994, (Second Printing, 1999): http://www.dtsc.ca.gov

State of California Environmental Protection Agency, Department of Toxic Substances Control: Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), August 26, 2002: http://www.dtsc.ca.gov

State of California Environmental Protection Agency, Department of Toxic Substances Control: Information Advisory Clean Imported Fill Material, October 2001; http://www.dtsc.ca.gov

University of California, Kearny Foundation of Soil Science: Background Concentrations of Trace and Major Elements in California Soils, March 1996.



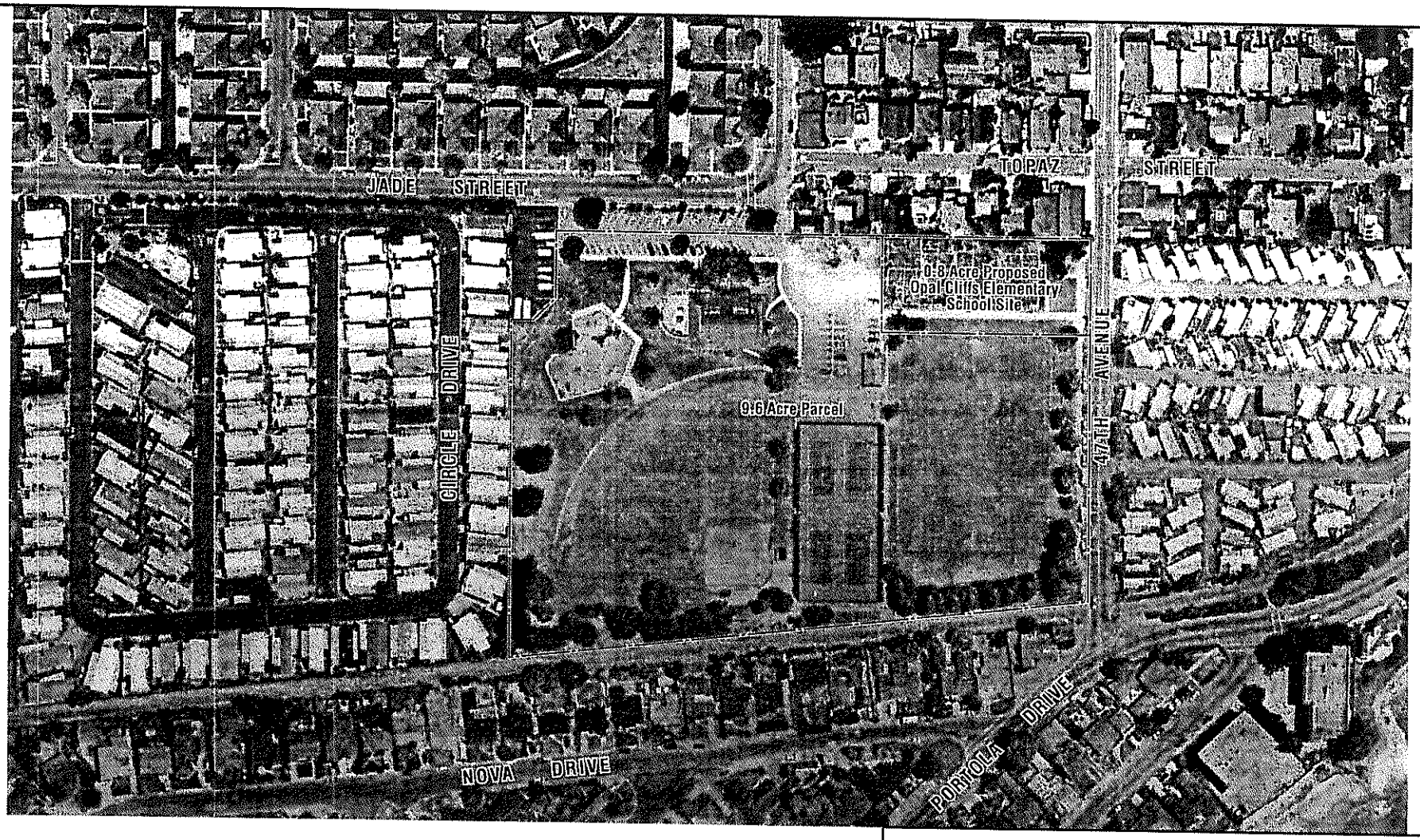
GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 - FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street
Capitola, California

VICINITY MAP

E8460-06-01	February 2009	Figure 1



N

0 200

Scale in Feet

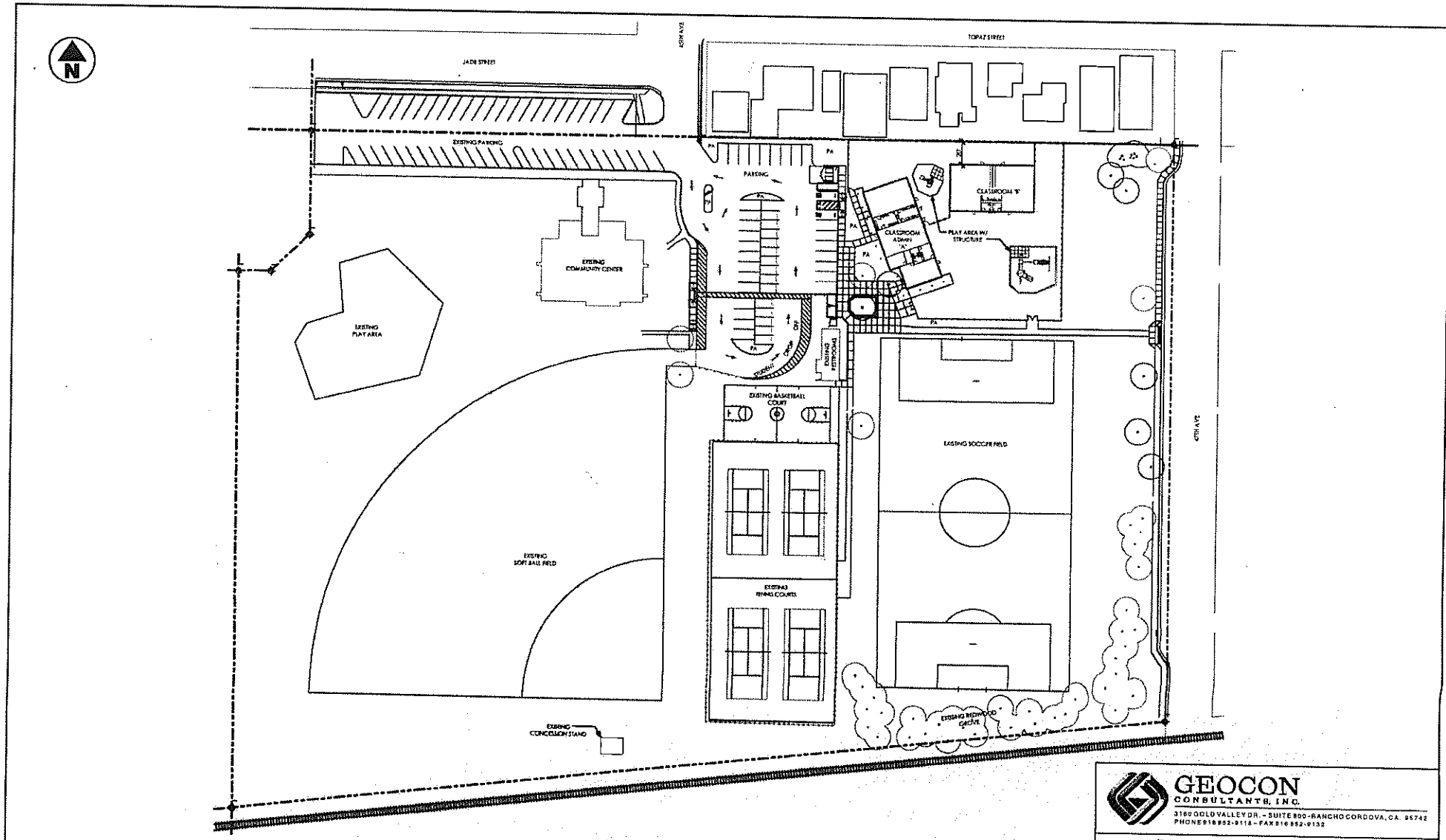
GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR. – SUITE 800 – RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 – FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street
Capitola, California

SITE PLAN

E8460-06-01	February 2009	Figure 2



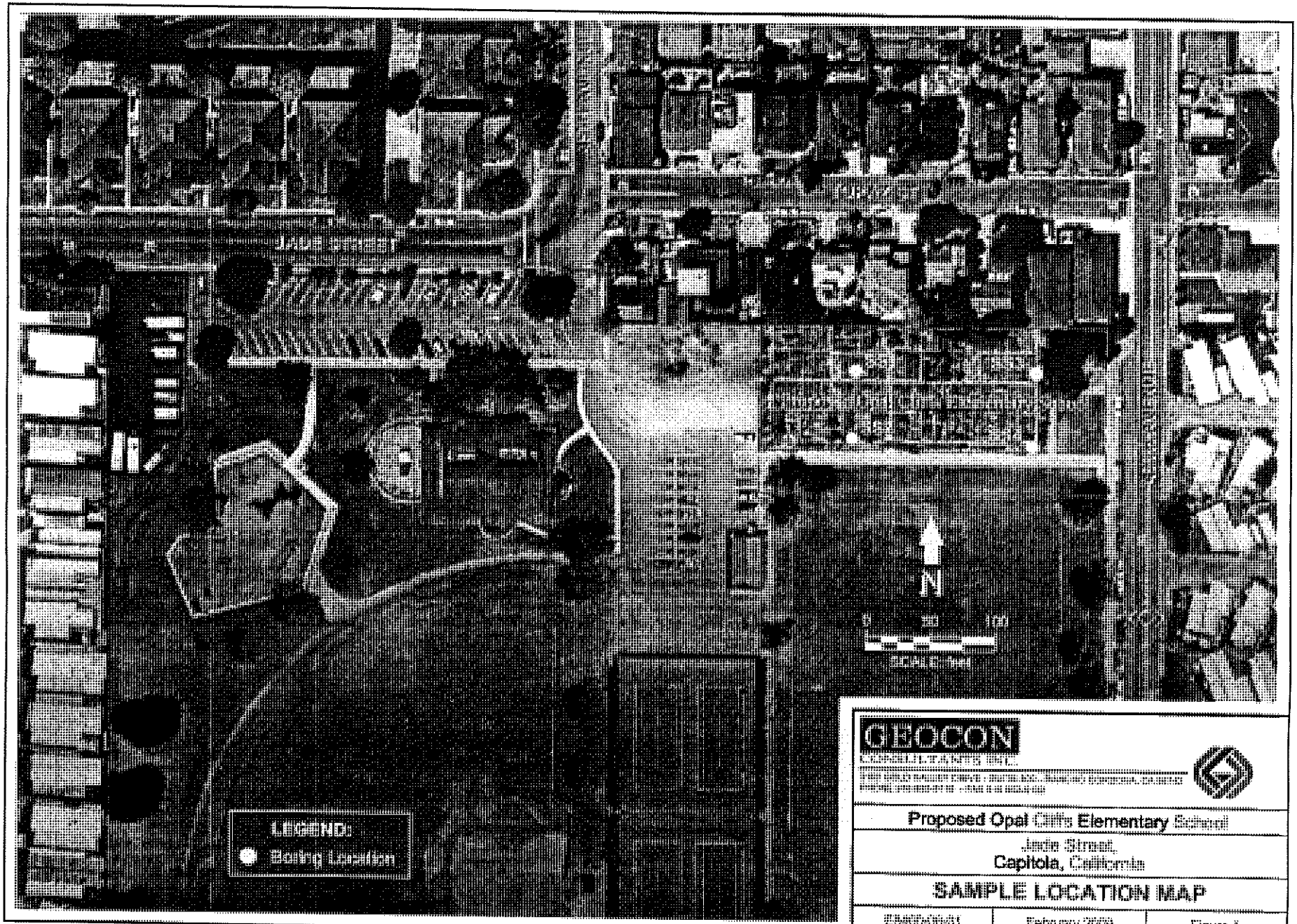
GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 - FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street, Capitola, California

Site Plan for Proposed Opal Cliffs Elementary School

E8460-06-01	February 2009	Figure 3



GEOCON

Proposed Opal Cliffs Elementary School

Jade Street,
Capitola, California

SAMPLE LOCATION MAP

E5400-00-01	February 2009	Figure 4

SITE0209.DWG

Table 1
Summary Soil Analytical Data - Organochlorine Pesticides and Arsenic
Proposed Opal Cliffs Elementary School Site
Capitola, California

Analyte	Sample Date	Units	SS-1	SS-2	SS-3	SS-4
4,4'-DDD	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
4,4'-DDE	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
4,4'-DDT	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Aldrin	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
alpha-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
beta-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Chlordane	1/29/2009	ug/kg	<8.5	<8.5	<8.5	<8.5
delta-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Dieldren	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endosulfan I	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Endosulfan II	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endosulfan sulfate	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin aldehyde	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin ketone	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
gamma-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Heptachlor	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Heptachlor epoxide	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Methoxychlor	1/29/2009	ug/kg	<5.0	<5.0	<5.0	<5.0
Toxaphene	1/29/2009	ug/kg	<50	<50	<50	<50
Arsenic	1/29/2009	mg/kg	1.6	<1.0	<1.0	<1.0

notes -
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram

APPENDIX A

John Love

From: Kamili Siglowide [KSiglowi@dtsc.ca.gov]
Sent: Wednesday, December 31, 2008 7:07 PM
To: love@geoconinc.com; sbrown@suesd.org
Cc: holly.moore@diablogreen.com; Jimmy Spearow; Ella Henson; Lesley Miles
Subject: Opal Cliff School

Good afternoon,

This is a note to let you know that DTSC has reviewed the Preliminary Environmental Workplan for the Opal Cliff School and will approve the workplan with the following modifications:

1) DTSC considers that organochlorine pesticides (OCP) were unlikely to have been used in the community garden since OCPs had been banned in the late 1970's. Therefore, DTSC considers that the District should assess the site for its history of agricultural use in the 1940s to the 1960s, analyze four (4) discrete (0 to 0.5 foot deep) soil samples, and analyze them for OCPs and arsenic. The 0.8-acre site should be divided into quarters and one sample should be positioned in the center of each quarter.

2) Report chlordane as technical chlordane instead of alpha chlordane and gamma chlordane.

If you agree with the above modifications, please provide a site map with the new sample locations. Upon receipt, DTSC will prepare an approval letter for the workplan.

If you have any questions, please give me a call.

Kamili Siglowide, Project Manager
Hazardous Substance Engineer
Schools Team
Brownfields and Environmental Restoration Program Department of Toxic Substances Control
8800 Cal Center Drive, Sacramento CA 95826
WK: (916) 255-6527
FAX: (916) 255-3734
ksiglowi@dtsc.ca.gov

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
8800 Cal Center Drive
Sacramento, California 95826

Arnold Schwarzenegger
Governor

January 21, 2009

Ms. Sherree Brown
Assistant Superintendent, Business Services
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

APPROVAL OF PRELIMINARY ENVIRONMENTAL ASSESSMENT WORKPLAN, OPAL CLIFF SCHOOL SITE, 4400 JADE STREET, CAPITOLA, (SITE CODE 204210)

Dear Ms. Brown:

The Department of Toxic Substances Control (DTSC) reviewed the revised draft Preliminary Environmental (PEA) Workplan (GEOCON Consultants, Inc., January 2009) received January 9, 2009. The PEA Workplan was revised in response to DTSC comments forwarded in an e-mail dated December 21, 2008. The PEA Workplan includes site background information and proposes investigation activities for the site.

The 0.8-acre site is located in the northeast corner of a larger 9.6-acre parcel. The site consists of a community garden, concrete sidewalks, grass and tree areas, and portions of a soccer field and parking lot. The site was purchased by the Soquel Union Elementary School District (District) in 1956; however, the site has been vacant from at least 1948 until 1981, when the construction of the community center was completed. The site will be investigated for organochlorine pesticides and arsenic related to past agricultural activities.

DTSC comments have been adequately addressed and the PEA Workplan is hereby approved. If conditions differ from those presented in the approved PEA Workplan, additional work may be necessary.

In accordance with the Education Code §17210.1(b), the District has provided a sample work notice in the revised PEA Workplan that will be distributed to residences in the immediate area in advance of field investigation activities. DTSC approves the work notice in form. Please notify DTSC a minimum of 48 hours in advance for changes in the field work schedule.

Printed on Recycled Paper

If you have any questions regarding the project, please contact me at (916) 255-6527 or via e-mail at ksiglowi@dtsc.ca.gov.

Sincerely,

Kamili Siglowide, Project Manager
Schools Team - Sacramento Office
Brownfields and Environmental Restoration Program

cc: (via e-mail)

John Love, P.G.
Sr. Project Manager
GEOCON Consultants, Inc.
love@geoconinc.com

Leslie Miles, AIA, LEED, AP
Weston Miles Architects, Inc.
lesley@wmarchitects.com

Ms. Holly D. Moore, CSST, REA
Senior Project Manager
DGC Associates, Inc.
Holly.moore@diablogreen.com

Mr. Harold (Bud) Duke, P.G., Acting Chief
Schools Team – Sacramento Office
bduke@dtsc.ca.gov

Mr. Jimmy Spearow, Ph.D., Staff Toxicologist
HERD – Sacramento Office
jspearow@dtsc.ca.gov

Schools Team Reading File – Sacramento Office (hard copy)

APPENDIX B

February 05, 2009

John Love
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 525-4142
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 103548

RE: Opal Cliffs, E8460-06-01

Attention: John Love

Enclosed are the results for sample(s) received on January 30, 2009 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

for Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-001

Client Sample ID: SS-1
Collection Date: 1/29/2009 1:02:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:	2/2/2009	Analyst: **CL**
Arsenic	1.6	1.0		mg/Kg	1	2/5/2009 11:33 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:	2/3/2009	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 01:49 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 01:49 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 01:49 PM
Surr: Decachlorobiphenyl	92.0	20-142		%REC	1	2/3/2009 01:49 PM
Surr: Tetrachloro-m-xylene	91.0	25-115		%REC	1	2/3/2009 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-002

Client Sample ID: SS-2
Collection Date: 1/29/2009 1:07:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:39 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:03 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:03 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:03 PM
Surr: Decachlorobiphenyl	75.5	20-142		%REC	1	2/3/2009 02:03 PM
Surr: Tetrachloro-m-xylene	78.0	25-115		%REC	1	2/3/2009 02:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-003

Client Sample ID: Rinse Blank
Collection Date: 1/29/2009 1:22:00 PM
Matrix: WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
EPA 3010A				EPA 6010B		
RunID: ICP8_090204B	QC Batch: 52746			PrepDate:		2/4/2009 Analyst: CL
Arsenic	ND	0.010		mg/L	1	2/4/2009 02:40 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3510C				EPA 8081A		
RunID: GC9_090205A	QC Batch: 52788			PrepDate:		2/4/2009 Analyst: HL
4,4'-DDD	ND	0.050		µg/L	1	2/5/2009 10:13 AM
4,4'-DDE	ND	0.050		µg/L	1	2/5/2009 10:13 AM
4,4'-DDT	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Aldrin	ND	0.025		µg/L	1	2/5/2009 10:13 AM
alpha-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
beta-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Chlordane	ND	0.25		µg/L	1	2/5/2009 10:13 AM
delta-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Dieldrin	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endosulfan I	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Endosulfan II	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endosulfan sulfate	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin aldehyde	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin ketone	ND	0.050		µg/L	1	2/5/2009 10:13 AM
gamma-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Heptachlor	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Heptachlor epoxide	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Methoxychlor	ND	0.25		µg/L	1	2/5/2009 10:13 AM
Toxaphene	ND	2.5		µg/L	1	2/5/2009 10:13 AM
Surr: Tetrachloro-m-xylene	87.9	47-117		%REC	1	2/5/2009 10:13 AM
Surr: Decachlorobiphenyl	81.0	29-137		%REC	1	2/5/2009 10:13 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-004

Client Sample ID: SS-3
Collection Date: 1/29/2009 1:27:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:42 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:17 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:17 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:17 PM
Surr: Decachlorobiphenyl	64.8	20-142		%REC	1	2/3/2009 02:17 PM
Surr: Tetrachloro-m-xylene	64.1	25-115		%REC	1	2/3/2009 02:17 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-005

Client Sample ID: SS-4
Collection Date: 1/29/2009 1:36:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:44 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:32 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:32 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:32 PM
Surr: Decachlorobiphenyl	73.5	20-142		%REC	1	2/3/2009 02:32 PM
Surr: Tetrachloro-m-xylene	81.3	25-115		%REC	1	2/3/2009 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-006

Client Sample ID: Duplicate
Collection Date: 1/29/2009
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:	2/2/2009	Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:47 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:	2/3/2009	Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:46 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:46 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:46 PM
Surr: Decachlorobiphenyl	71.8	20-142		%REC	1	2/3/2009 02:46 PM
Surr: Tetrachloro-m-xylene	74.8	25-115		%REC	1	2/3/2009 02:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-52682** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **PBS** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.0									

Sample ID: **LCS-52682** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **LCSS** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.175	1.0	50.00	0	94.4	80	120				

Sample ID: **103548-001ADUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **SS-1** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.705	1.0						1.595	6.66	20	

Sample ID: **103548-006AMS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **Duplicate** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	97.785	1.0	125.0	0	78.2	42	113				

Sample ID: **103548-006AMSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **Duplicate** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	96.808	1.0	125.0	0	77.4	42	113	97.78	1.00	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-52746 | SampType: MBLK | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: PBW | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010									

Sample ID: LCS-52746 | SampType: LCS | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: LCSW | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.976	0.010	1.000	0	97.6	85	115				

Sample ID: 103605-004DMS | SampType: MS | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: ZZZZZZ | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.506	0.010	2.500	0	100	66	128				

Sample ID: 103605-004DMSD | SampType: MSD | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: ZZZZZZ | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.504	0.010	2.500	0	100	66	128	2.506	0.0947	20	

Sample ID: 103548-003BDUP | SampType: DUP | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: Rinse Blank | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **MB-52711** SampType: **MBLK** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **PBS** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	12.867		16.67		77.2	25	115				
Surr: Decachlorobiphenyl	13.186		16.67		79.1	20	142				

Sample ID: **LCS-52711** SampType: **LCS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **LCSS** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	15.970	1.0	16.67	0	95.8	59	113				
Dieldrin	15.763	2.0	16.67	0	94.6	59	108				
Endrin	17.473	2.0	16.67	0	105	41	132				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: LCS-52711 | SampType: LCS | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: LCSS | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646765

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-BHC	15.723	1.0	16.67	0	94.3	60	111				
Heptachlor	15.892	1.0	16.67	0	95.3	62	108				
Surr: Tetrachloro-m-xylene	15.549		16.67		93.3	25	115				
Surr: Decachlorobiphenyl	16.464		16.67		98.8	20	142				

Sample ID: 103548-001AMS | SampType: MS | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: SS-1 | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	16.643	2.0	16.67	0.6168	96.1	29	143				
Aldrin	17.116	1.0	16.67	0	103	44	131				
Dieldrin	15.937	2.0	16.67	0	95.6	40	136				
Endrin	18.679	2.0	16.67	0	112	41	146				
gamma-BHC	17.287	1.0	16.67	0	104	45	129				
Heptachlor	17.253	1.0	16.67	0	103	48	126				
Surr: Tetrachloro-m-xylene	14.386		16.67		86.3	25	115				
Surr: Decachlorobiphenyl	16.425		16.67		98.5	20	142				

Sample ID: 103548-001AMSD | SampType: MSD | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: SS-1 | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646767

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	13.974	2.0	16.67	0.6168	80.1	29	143	16.64	17.4	20	
Aldrin	16.765	1.0	16.67	0	101	44	131	17.12	2.07	20	
Dieldrin	15.381	2.0	16.67	0	92.3	40	136	15.94	3.55	20	
Endrin	17.898	2.0	16.67	0	107	41	146	18.68	4.27	20	
gamma-BHC	16.830	1.0	16.67	0	101	45	129	17.29	2.68	20	
Heptachlor	16.714	1.0	16.67	0	100	48	126	17.25	3.17	20	
Surr: Tetrachloro-m-xylene	14.210		16.67		85.2	25	115		0	0	
Surr: Decachlorobiphenyl	16.200		16.67		97.2	20	142		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **103548-006ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **Duplicate** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	0.982	2.0						0.9345	0	20	
4,4'-DDT	ND	2.0						0	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	12.666		16.67		76.0	25	115		0	0	
Surr: Decachlorobiphenyl	11.675		16.67		70.0	20	142		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W

Sample ID: **MB-52788** SampType: **MBLK** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **PBW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	0.050									
4,4'-DDE	ND	0.050									
4,4'-DDT	ND	0.050									
Aldrin	ND	0.025									
alpha-BHC	ND	0.025									
beta-BHC	ND	0.025									
Chlordane	ND	0.25									
delta-BHC	ND	0.025									
Dieldrin	ND	0.050									
Endosulfan I	ND	0.025									
Endosulfan II	ND	0.050									
Endosulfan sulfate	ND	0.050									
Endrin	ND	0.050									
Endrin aldehyde	ND	0.050									
Endrin ketone	ND	0.050									
gamma-BHC	ND	0.025									
Heptachlor	ND	0.025									
Heptachlor epoxide	ND	0.025									
Methoxychlor	ND	0.25									
Toxaphene	ND	2.5									
Surr: Tetrachloro-m-xylene	0.369		0.5000		73.8	47	117				
Surr: Decachlorobiphenyl	0.441		0.5000		88.2	29	137				

Sample ID: **LCS-52788** SampType: **LCS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **LCSW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	0.483	0.025	0.5000	0	96.7	63	115				
Dieldrin	0.476	0.050	0.5000	0	95.1	62	111				
Endrin	0.475	0.050	0.5000	0	95.1	45	137				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W

Sample ID: **LCS-52788** SampType: **LCS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **LCSW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-BHC	0.485	0.025	0.5000	0	96.9	62	115				
Heptachlor	0.395	0.025	0.5000	0	78.9	60	113				
Surr: Tetrachloro-m-xylene	0.390		0.5000		77.9	47	117				
Surr: Decachlorobiphenyl	0.470		0.5000		94.0	29	137				

Sample ID: **MB-52788MS** SampType: **MS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **ZZZZZZ** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	0.486	0.050	0.5000	0	97.2	53	113				
Aldrin	0.478	0.025	0.5000	0	95.7	63	115				
Dieldrin	0.475	0.050	0.5000	0	95.0	62	111				
Endrin	0.501	0.050	0.5000	0	100	45	137				
gamma-BHC	0.479	0.025	0.5000	0	95.8	62	115				
Heptachlor	0.458	0.025	0.5000	0	91.5	60	113				
Surr: Tetrachloro-m-xylene	0.393		0.5000		78.6	47	117				
Surr: Decachlorobiphenyl	0.469		0.5000		93.8	29	137				

Sample ID: **MB-52788MSD** SampType: **MSD** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **ZZZZZZ** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	0.495	0.050	0.5000	0	99.1	53	113	0.4861	1.90	20	
Aldrin	0.481	0.025	0.5000	0	96.2	63	115	0.4783	0.516	20	
Dieldrin	0.483	0.050	0.5000	0	96.7	62	111	0.4748	1.79	20	
Endrin	0.487	0.050	0.5000	0	97.5	45	137	0.5008	2.73	20	
gamma-BHC	0.483	0.025	0.5000	0	96.6	62	115	0.4789	0.817	20	
Heptachlor	0.409	0.025	0.5000	0	81.8	60	113	0.4577	11.2	20	
Surr: Tetrachloro-m-xylene	0.391		0.5000		78.2	47	117		0	0	
Surr: Decachlorobiphenyl	0.471		0.5000		94.2	29	137		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: 1/30/09

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSO

Sample Condition Upon Receipt:
1. CHILLED 5.2 ✓ Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐
3. CONTAINER INTACT Y☐ N☐
4. SEALED Y☐ N☐
5. # OF SPLS MATCH COC Y☐ N☐
6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn: John Low
Address: 6671 Brisa Street
City: Livermore State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: Opal Cliffs Project #: E8460-06-01 Sampler: (Printed Name) Rich Dreessen (Signature) R S Dreessen

Relinquished by: (Signature and Printed Name) R.S. Dreessen Date: 1/29/09 Time: 16:00 Received by: (Signature and Printed Name) R S Dreessen Date: 1/29/09 Time: 16:00

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: 1/30/09 Time: 9:55

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: John Low 1/29/09
Print Name Date
Signature

Send Report To:
Attn:
Co: SAME AS ABOVE
Address
City State Zip

Bill To:
Attn:
Co: SAME AS ABOVE
Address
City State Zip

Special Instructions/Comments:
* Report chlordane as "Technical Chlordane", not as alpha and gamma chlordane

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)*	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Arsenic	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	103548-01	SS-1	1/29/09	13:02	X									X	X				E	1	J G		
	-2	SS-2		13:07	X									X	X					1	J G		
	-3	Rinse Blank		13:22	X											X				2	L G		
		↓		↓										X		X				1	P P	N	
	-4	SS-3		13:27	X									X	X					1	J G		
	-5	SS-4		13:36	X									X	X					1	J G		
	-6	Duplicate		—	X									X	X					1	J G		

QA/QC: RTNE ☐ CT ☐ SWRCB ☐ Logcode ____ OTHER ____

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

APPENDIX C

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile	Samples per Volume
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

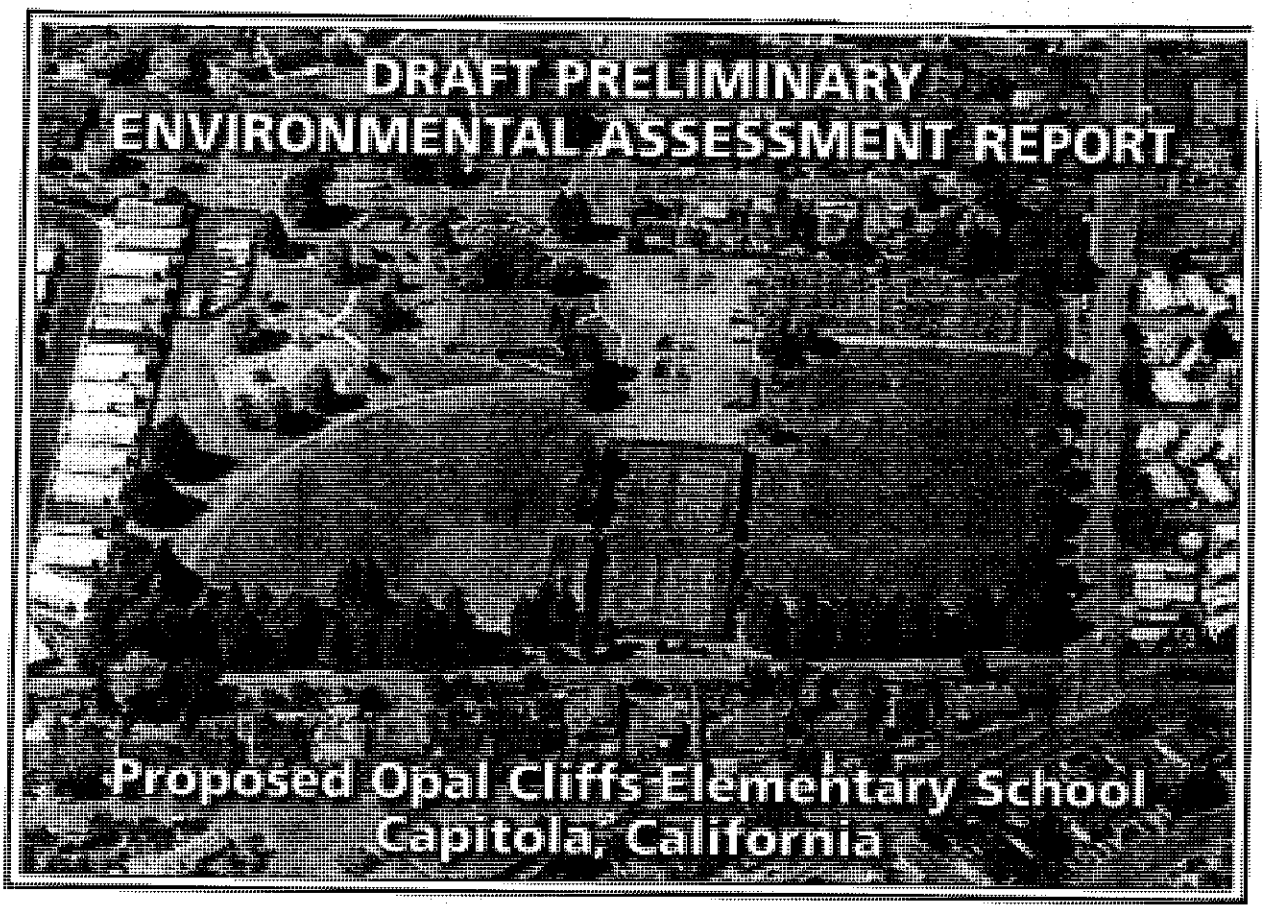
Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.



PUBLIC COPY
Do Not Remove

PREPARED FOR:

SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
620 MONTEREY AVENUE
CAPITOLA, CALIFORNIA 95010

PREPARED BY:

GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA 94550

GEOCON

GEOCON PROJECT NO. E8460-06-01

FEBRUARY 2009

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. E8460-06-01
February 19, 2008

Ms. Sherree Brown
Assistant Superintendent, Business Development
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

Subject: OPAL CLIFFS ELEMENTARY SCHOOL SITE
CAPITOLA, CALIFORNIA
DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

Dear Ms. Brown:

In accordance with your request, we have performed a Preliminary Environmental Assessment (PEA) for the proposed 0.8-acre Opal Cliffs Elementary School (the Site) located west of 47th Avenue and south of Jade Street in Capitola in California. The Client, the Soquel Union Elementary School District, requested the performance of a PEA per the requirement of the California Department of Toxic Substances Control (DTSC) to confirm or refute the potential presence of residual pesticides and arsenic in soil at the Site resulting from historical agricultural activities.

The accompanying report presents the details of the PEA including an evaluation and discussion of findings in general accordance with DTSC PEA guidelines. Please contact us if you have any questions concerning the contents of this PEA Report, or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

John Love, PG
Sr. Project Geologist

PROFESSIONAL GEOLOGIST
JOHN W. LOVE
No. 6315
Expires 11-30-10
STATE OF CALIFORNIA

John Juhrend, CEG, CHG
Vice President

JWL:JJ:kc

(2) Addressee
(2) DTSC, Ms. Kamili Siglowide

TABLE OF CONTENTS

DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

I. INTRODUCTION 1
A. Purpose and Scope of Services 1

II. SITE DESCRIPTION 4
A. Site Identification Information 4
B. Site Maps 5

III. BACKGROUND 6
A. Site Status/Historical Site Information 6
B. Hazardous Substance/Waste Management Information 6

IV. APPARENT PROBLEM 7

V. ENVIRONMENTAL SETTING 8
A. Factors Related to Soil Pathways 8
B. Factors Related to Water Pathways 8
C. Factors Related to Air Pathways 8

VI. SAMPLING ACTIVITIES AND RESULTS 10
A. Summary of Activities 10
B. Presentation of Data 11
C. Discussion of Results 11
D. Laboratory QA/QC 11

VII. CONCLUSIONS AND RECOMMENDATIONS 12
A. Summary and Conclusions 12

IX. LIMITATIONS 13

X. REFERENCES AND BIBLIOGRAPHY 14

FIGURES

1. Vicinity Map
2. Site Plan
3. Site Plan for Proposed Opal Cliffs Elementary School
4. Sample Location Map

TABLES

1. Summary of Soil Analytical Data – Organochlorine Pesticides and Arsenic

APPENDICES

A. Regulatory Correspondence and Public Notice
B. Laboratory Reports and Chain-of-custody Documentation
C. DTSC Information Advisory – Clean Imported Fill Material

DRAFT PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

I. INTRODUCTION

This report has been prepared by Geocon Consultants, Inc. on behalf of the Soquel Union Elementary School District (District). The report presents the findings of a Preliminary Environmental Assessment (PEA) of the proposed new K-6 school facility (the Site) located west of 47th Avenue and south of Jade Street in Capitola in California (Figure 1).

The site to be developed as the proposed Opal Cliffs Elementary School is an approximately 0.8 acre area that is part of a larger 9.6 acre parcel owned by the District. The 9.6-acre parcel is currently developed with a one-story building occupied by the Capitola Community Center (4400 Jade Street), a children's playground, baseball field, two tennis courts, a basketball court, a separate restroom building, a community garden area, and a soccer field.

The 0.8-acre area to be developed as the new Opal Cliffs Elementary School is located in the northeast corner of the 9.6-acre parcel and presently exists as a community garden, as well as part of a soccer field and park area consisting of concrete sidewalks, a grass area, and trees.

The 0.8-acre site is bounded to the north by residential lots, to the east beyond 47th Avenue by a mobile home park and residential lots, to the south by the existing soccer field, and to the west by paved parking areas for the existing community center. A Site Plan depicting the approximate site boundaries and adjacent development is presented as Figure 2.

It is understood that the District will acquire the Site for development of a K-6 school facility. Proposed school facility improvements include a classroom/administration building, a classroom building, and play areas. A Site Plan for the Proposed Opal Cliffs Elementary School is provided as Figure 3.

A. Purpose and Scope of Services

We reviewed the Diablo Green Consulting, Inc. (DGC) *Phase I Environmental Site Assessment, 4400 Jade Street, Capitola*, dated September 25, 2007.

The 9.6-acre parcel known as the Opal Cliffs Site existed as undeveloped land prior to its acquisition by the District in 1956. The 0.8-acre site (the subject of this workplan) is located in the northeast corner of the 9.6-acre parcel.

The District's 9.6-acre parcel was reportedly undeveloped until 1981 when construction of the existing community park was initiated. The 1982 aerial photograph indicates that the tennis courts and grassy areas of the park (including the soccer field) had been constructed and planted at that time. Sometime between 1982 and 1987 the baseball field and playground areas were constructed. The community

center building was completed in 1987. The community garden area, which covers most of the new Opal Cliffs School site, was reportedly started sometime around 1998. Prior to 1998, the new school site existed as undeveloped land, with the exception of the south portion of the site that was developed with the north end of the soccer field in 1981 or 1982. Gardening activities were not conducted in the community garden when the site inspection for the Phase I ESA was conducted on September 10, 2007 because of the pending development of the area as an elementary school.

The community garden area was used by individuals of the community to presumably plant fruits and vegetables for consumption purposes; however it was not reported in the *Phase I Environmental Site Assessment* as to what crops were planted or whether pesticides were used in the process.

Due to the historical agricultural activity located at the Site, the Department of Toxic Substances Control (DTSC) required the completion of a PEA to confirm or refute the potential presence of residual pesticides and arsenic in soil at the Site.

Geocon, District, and DTSC staff conducted a PEA scoping meeting on September 24, 2008. We subsequently submitted a Draft PEA Workplan dated November 28, 2008, and a Revised PEA Workplan dated January 5, 2009. The DTSC approved the project workplan submittals in correspondence dated December 31, 2008 and January 21, 2009. Copies of the DTSC PEA Workplan review and approval correspondence are presented in Appendix A.

We performed the following PEA scope of services:

Pre-field Activities

- Prepared a Revised PEA Workplan dated January 5, 2009, to present details regarding the field sampling and analytical protocols. The Revised PEA Workplan further included a site-specific Health and Safety Plan to provide guidelines on the use of personal protective equipment and health and safety procedures implemented during the proposed field activities.
- Provided five-day notification to the existing property owners (via public notice flyer), DTSC and District personnel prior to initiating the onsite sampling activities. A copy of the public notice flyer distributed to adjacent property owners is presented in Appendix A.
- Retained the services of Advanced Technology Laboratories (ATL, ELAP #1838) to perform the analytical testing of soil samples.

Field Activities and Analytical Testing

We performed the following field activities on January 29, 2009:

- Collected four surface (0 to 6 inch deep) soil samples (SS-1 through SS-4) within the Site. The soil samples were obtained for analysis of organochlorine pesticides and arsenic.

The approximate sampling locations are presented on Figure 4. Summaries of the soil analytical data are presented on Table 1.

II. SITE DESCRIPTION

The Site to be developed as the proposed Opal Cliffs Elementary School is an approximately 0.8 acre area that is part of a larger 9.6 acre parcel owned by the District. The 9.6-acre parcel is currently developed with a one-story building occupied by the Capitola Community Center (4400 Jade Street), a children's playground, baseball field, two tennis courts, a basketball court, a separate restroom building, a community garden area, and a soccer field.

The 0.8-acre area to be developed as the new Opal Cliffs Elementary School is located in the northeast corner of the 9.6-acre parcel and presently exists as a community garden, as well as part of a soccer field and park area consisting of concrete sidewalks, a grass area, and trees (see Figure 2).

The 0.8-acre site is bounded to the north by residential lots, to the east beyond 47th Avenue by a mobile home park and residential lots, to the south by the existing soccer field, and to the west by paved parking areas for the existing community center.

Site topography is essentially flat and level. Based on the 1980 United States Geological Survey (USGS) topographic map, approximate site elevation is approximately 45 feet above mean sea level (MSL). Based on our observations, estimated elevation differential across the Site is approximately two feet or less. It appears that the majority of the Site was not graded with the surrounding development and is in a general fallow condition.

A. Site Identification Information

Site Name:	Proposed Opal Cliffs Elementary School
Contact Person:	Ms. Sherree Brown
Site Address:	Opal Cliffs Site located west of 47th Avenue and south of Jade Street in Capitola, California
Mailing Address:	Soquel Union Elementary School District 620 Monterey Avenue Capitola, California 95010
Telephone Number:	(831) 464-5630
Other Site Names:	None
EPA ID Number:	None
CalSites Database Number:	None
Assessor's Parcel Numbers (APN):	Portion of APN 034-551-02
Township, Range, and Meridian:	T11S, R1W, Mount Diablo Meridian
Land Use and Zoning:	Community Garden / Public Facilities - School

B. Site Maps

A Vicinity Map is provided as Figure 1. A Site Plan showing the surrounding areas is provided as Figure 2, and the Proposed Opal Cliffs School site layout is shown on Figure 3. The soil sample locations are provided on Figure 4.

III. BACKGROUND

A. Site Status/Historical Site Information

Business Type:	There is no documentation indicating that a business was operated on the Site.
Years of Operation:	None established.
Prior Land Use:	It appears that the Site existed as undeveloped land until 1981. Since that time it has been used as a community park.
Facility Ownership/Operators:	No onsite facilities.
Property Owners:	Soquel Union Elementary School District
Surrounding Land Use:	The Site is bordered by residential lots to the north, a parking lot for the Jade Street Park to the west, the Jade Street Park soccer field to the south and 47th Avenue to the east.

The Site existed as undeveloped land prior to its acquisition by the District in 1956. The District's 9.6-acre parcel was reportedly undeveloped until 1981 when construction of the existing community park was initiated.

The 1982 aerial photograph indicates that the soccer field had been constructed and planted at that time. The community garden, which covers most of the new Opal Cliffs School site, was reportedly started sometime around 1998. Prior to 1998, the new school site existed as undeveloped land, with the exception of the south portion of the site that was developed with the north end of the soccer field in 1981 or 1982.

Gardening activities were not conducted in the community garden when the site inspection for the Phase I ESA was conducted on September 10, 2007 because of the pending development of the area as an elementary school.

The community garden area was used by individuals of the community to presumably plant fruits and vegetables for consumption purposes; however it was not reported in the *Phase I Environmental Site Assessment* as to what crops were planted or whether pesticides were used in the process.

B. Hazardous Substance/Waste Management Information

There is no evidence or documentation of hazardous materials/wastes used on or disposed of at the Site.

IV. APPARENT PROBLEM

DTSC requested a PEA to determine the potential presence of residual pesticides and arsenics in soil at the Site due to historical agricultural activities. Specific contaminants of concern (COCs) include the following:

- Chlorinated pesticides associated with historical agricultural activities; and
- Arsenic associated with pesticides.

V. ENVIRONMENTAL SETTING

The Site consists of an approximately 0.8-acre rectangular-shaped area located in the northeast corner of the Jade Street Park (see Figure 2). The Jade Street Park is approximately 9.6-acres in size and is owned by the District. When the Opal Cliffs Elementary School is completed it will be surrounded by the existing facilities of Jade Street Park to the west and south, residential properties to the north, and 47th Avenue to the east. East of 47th Avenue is a mobile home park.

Proposed school facility improvements include a classroom/administration building, a classroom building, and play areas.

A. Factors Related to Soil Pathways

The Site is relatively level, surrounded by residential development to the north, the existing Jade Street Park to the west and south, and 47th Street to the east. The results of recent sampling efforts at the Site have not revealed evidence of conditions that could lead to adverse environmental impacts. Accordingly, no measures have been implemented to restrict access to the Site.

In general, surficial site soils (0 to 6 inches) encountered during the recent soil sampling activities consisted of loose, brown, silty sand.

B. Factors Related to Water Pathways

Groundwater was not encountered during the recent investigation; however information provided in the *Phase I Environmental Site Assessment* indicates that groundwater at properties located within one-eighth to one-quarter mile from the Site was measured at depths ranging from 46 to 86 feet.

If organochlorine pesticides and arsenic originated in surficial soils at the Site, it is reasonable to assume that there is a low likelihood that these contaminants would have impacted groundwater beneath Site given the expected depth to groundwater and the immobile nature of organochlorine pesticides and arsenic in soil. Furthermore, drinking water at the Site will be provided by the Soquel Creek Water District, which obtains their water supply from 17 production wells that are regularly tested for 150 contaminants.

Based on the lack of identified groundwater impacts and the planned use of municipal supplied domestic water, further evaluation of the groundwater pathway is not warranted.

C. Factors Related to Air Pathways

Sampling data does not exist to document a release of a hazardous substance to the atmosphere, nor has a threatened release been identified. The only air-related pathway under consideration is airborne soil particles generated during and/or after onsite grading operations. Construction of pavement, structural

and landscape improvements will minimize, but not completely eliminate, the potential for dust generation following completion of the project.

VI. SAMPLING ACTIVITIES AND RESULTS

A. Summary of Activities

The field sampling activities were performed on January 29, 2009, in accordance with the revised PEA Workplan dated January 5, 2009, and subsequent dialog with DTSC personnel on January 28, 2009. The approximate sampling locations are depicted on the Sample Location Map, Figure 4.

Four discrete surface (0 to 6 inches deep) soil samples (SS-1 through SS-4) were collected at the 0.8-acre site. The soil samples were collected using a pre-cleaned stainless steel trowel and placed into laboratory-provided glass jars. The samples were analyzed for organochlorine pesticides and arsenic following Environmental Protection Agency (EPA) Test Methods 8081A and 6010B, respectively.

Organochlorine pesticides were reported as non-detect for all target analytes. Arsenic was reported at a concentration of 1.6 milligrams per kilogram (mg/kg) in soil sample SS-1, and it was reported as below the laboratory reporting limit concentration of 1.0 mg/kg in the other three samples.

Per DTSC requirements, background soil samples were not required during this investigation unless arsenic was reported at or above a concentration of 12 mg/kg.

Quality Assurance/Quality Control (QA/QC) Sampling Procedures. QA/QC sampling procedures were adhered to as outlined in the project Workplan. The sampling equipment utilized during the field activities was decontaminated in an Alconox detergent solution and rinsed in tap and de-ionized water prior to and between each use.

One rinse blank sample was collected between sample locations SS-2 and SS-3, and one duplicate soil sample was collected from SS-2. The rinse blank sample was reported as non-detect for organochlorine pesticides and arsenic. The duplicate soil sample collected from SS-2 was reported as non-detect for organochlorine pesticides and arsenic, the same as the primary sample collected from this sample location.

Each of the sample containers were labeled with a unique sample identification number, depth designation, sample time and date, and project number with an indelible marker. The samples were placed in chilled cooler and transported to the laboratory under chain-of-custody procedures. Sample jars were carefully arranged and packaged to reduce the potential for breakage during transport.

B. Presentation of Data

A summary of the organochlorine pesticides and arsenic soil sample analytical data is presented in Table 1. The laboratory reports and chain-of-custody documentation are presented in Appendix B.

C. Discussion of Results

The following sections summarize the analytical data based on the COCs.

Organochlorine Pesticides. Organochlorine pesticides were reported as non-detect during this investigation. Due to the lack of detectable concentrations, organochlorine pesticides will not be further evaluated with respect to human health risk screening.

Arsenic. Arsenic was reported as non-detect in the near surface soil samples collected from SS-2 through SS-4. However, it was reported in the soil sample collected from SS-1 at a concentration of 1.6 mg/kg.

The arsenic concentration reported in the SS-1 soil sample likely represents background levels present at the Site. According to the *Background Concentrations of Trace and Major Elements in California Soils,* prepared by the Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996, the expected background concentration of arsenic in California soils is 3.5 mg/kg. The highest arsenic concentration (1.6 mg/kg) reported during this investigation is less than half the expected background concentration.

Due to the non-detectable and one low arsenic concentration, arsenic will not be further evaluated with respect to human health risk screening.

D. Laboratory QA/QC

ATL is certified by the California Department of Health Services for all of the analyses performed for this PEA. We reviewed the analytical laboratory QA/QC provided with the reports. These data show acceptable non-detect results and surrogate recoveries for the method blanks and acceptable recoveries and relative percent differences for the matrix spikes and matrix spike duplicates. Based on the laboratory QA/QC data, no qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Summary and Conclusions

Sampling activities have not identified a release or a threat of a release of hazardous wastes or substances at the Site. Arsenic was reported in one soil sample at a concentration of 1.6 mg/kg; however this concentration is within expected background concentrations for soils in California.

Based on the analytical data generated, soil materials generated from onsite excavations should be suitable for use as fill materials. If required, proposed import fill material sources should be screened in accordance with the protocols outlined in the *Information Advisory - Clean Imported Fill Material* prepared by the DTSC, dated October 2001. A copy of the DTSC advisory is presented in Appendix C.

Based on the lack of identified COCs that present an unacceptable human health risk or require remedial measures, Geocon, on behalf of the District, requests that the DTSC issue *No Further Action* status for the Site.

IX. LIMITATIONS

This PEA report has been prepared solely for the District, in consideration of the District's requirements. Other parties may rely on the findings and conclusions of the report for informational purposes only. However, Client and other parties who may rely on the findings and conclusions of the report should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein.

The information contained herein is only valid as of the date of the report and would require an update to reflect additional site activities. Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee of the results of the study is implied within the intent of this report or any subsequent report, correspondence or consultation, either express or implied. The services performed were conducted in accordance with the local standard of care in the geographic region at the time the services were rendered.

X. REFERENCES AND BIBLIOGRAPHY

Geocon Consultants, Inc.: Workplan For Preliminary Endangerment Assessment, Proposed Opal Cliffs Elementary School, Capitola, California, dated November 28, 2008.

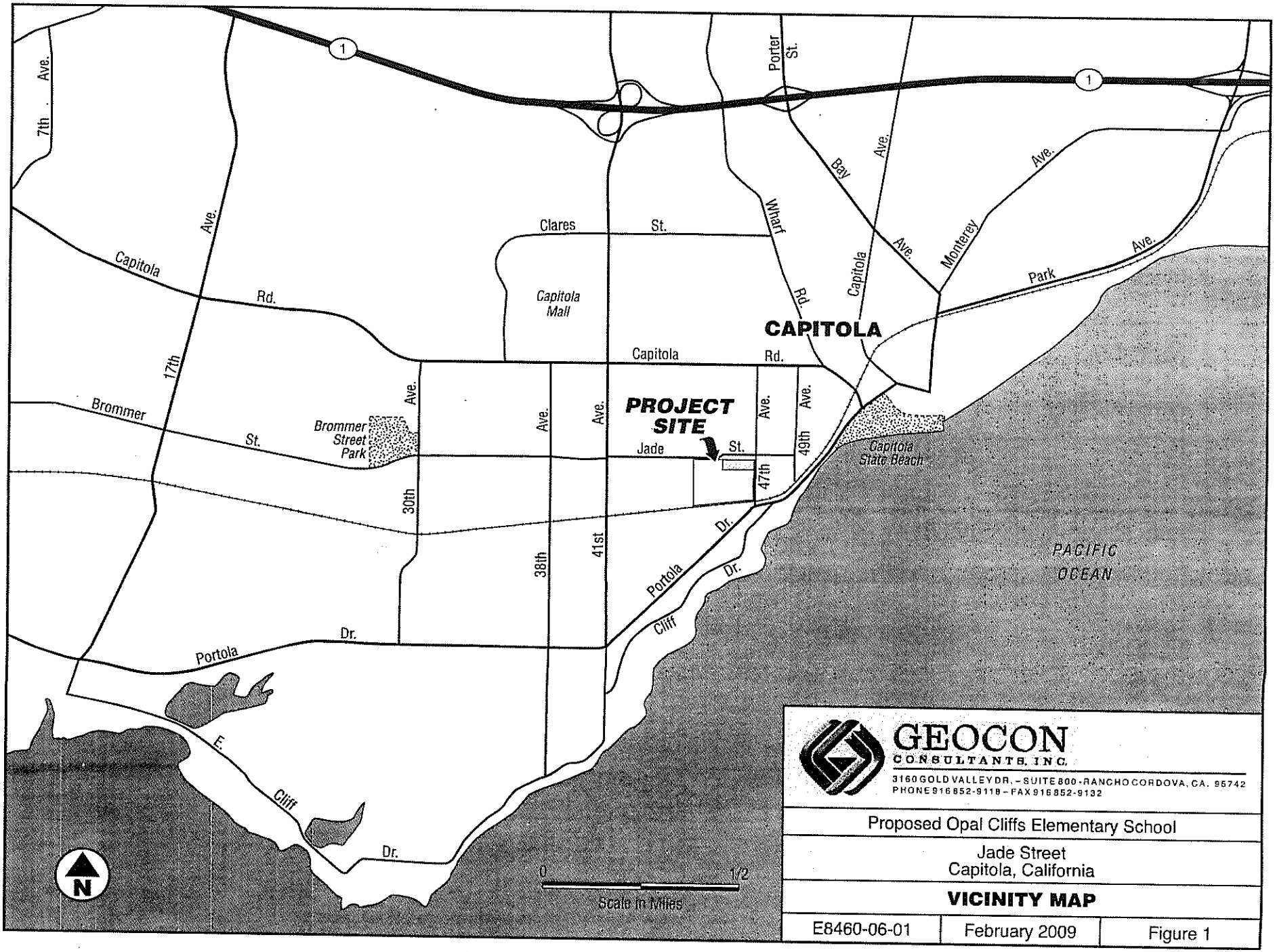
Geocon Consultants, Inc.: Revised Workplan for Preliminary Endangerment Assessment, dated November 28, 2008, revised January 5, 2009.

State of California Environmental Protection Agency, Department of Toxic Substances Control: Preliminary Endangerment Assessment Guidance Manual, 1994, (Second Printing, 1999): http://www.dtsc.ca.gov

State of California Environmental Protection Agency, Department of Toxic Substances Control: Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision), August 26, 2002: http://www.dtsc.ca.gov

State of California Environmental Protection Agency, Department of Toxic Substances Control: Information Advisory Clean Imported Fill Material, October 2001; http://www.dtsc.ca.gov

University of California, Kearny Foundation of Soil Science: Background Concentrations of Trace and Major Elements in California Soils, March 1996.



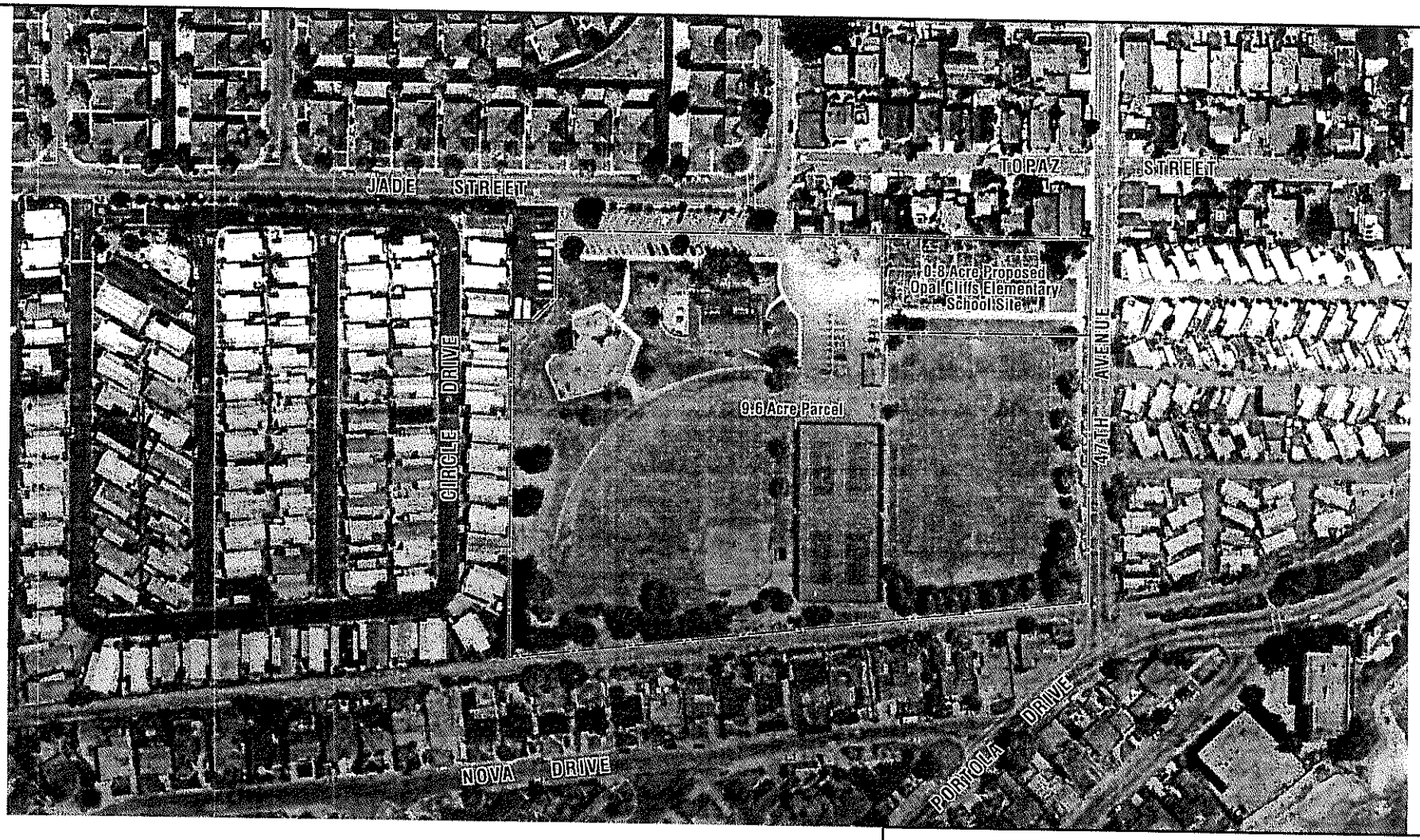
GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 - FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street
Capitola, California

VICINITY MAP

E8460-06-01	February 2009	Figure 1



N

0 200

Scale in Feet

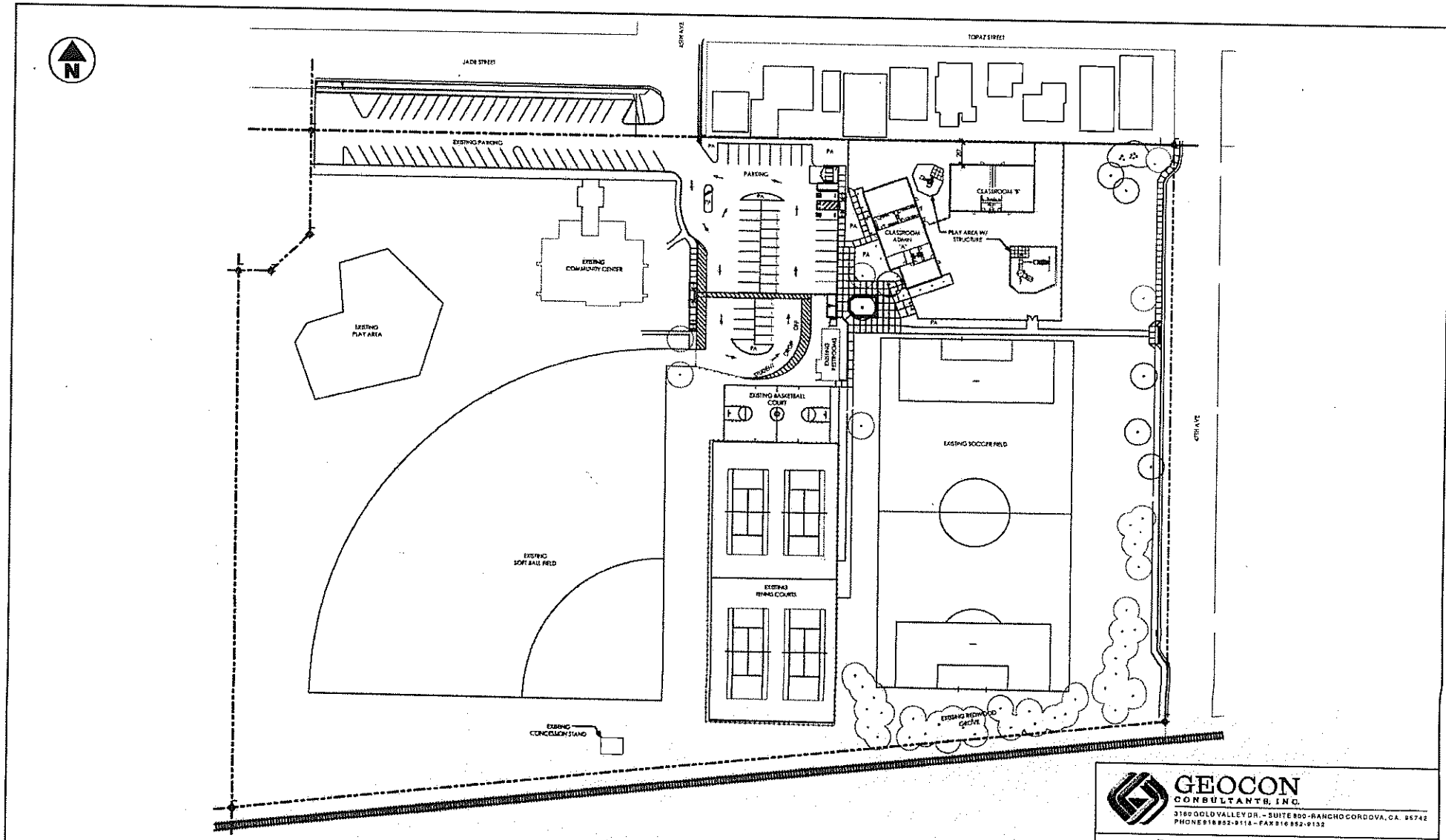
GEOCON
CONSULTANTS, INC.
3160 GOLD VALLEY DR. – SUITE 800 – RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 – FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street
Capitola, California

SITE PLAN

E8460-06-01	February 2009	Figure 2



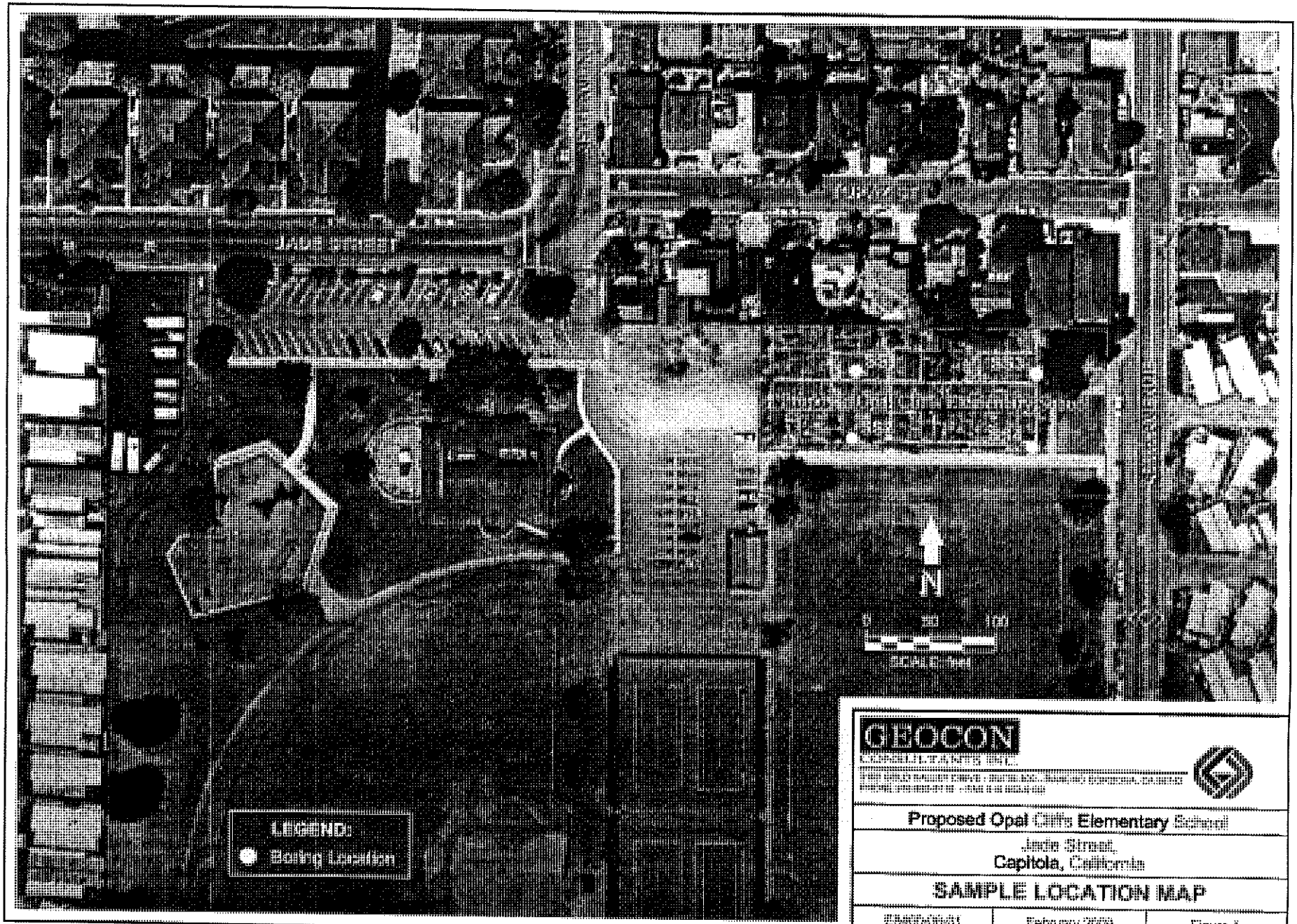
GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742
PHONE 916 852-9118 - FAX 916 852-9132

Proposed Opal Cliffs Elementary School

Jade Street, Capitola, California

Site Plan for Proposed Opal Cliffs Elementary School

E8460-06-01	February 2009	Figure 3



GEOCON

Proposed Opal Cliffs Elementary School

Jade Street,
Capitola, California

SAMPLE LOCATION MAP

E5400-00-01	February 2009	Figure 4

SITE0209.DWG

Table 1
Summary Soil Analytical Data - Organochlorine Pesticides and Arsenic
Proposed Opal Cliffs Elementary School Site
Capitola, California

Analyte	Sample Date	Units	SS-1	SS-2	SS-3	SS-4
4,4'-DDD	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
4,4'-DDE	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
4,4'-DDT	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Aldrin	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
alpha-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
beta-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Chlordane	1/29/2009	ug/kg	<8.5	<8.5	<8.5	<8.5
delta-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Dieldren	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endosulfan I	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Endosulfan II	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endosulfan sulfate	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin aldehyde	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
Endrin ketone	1/29/2009	ug/kg	<2.0	<2.0	<2.0	<2.0
gamma-BHC	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Heptachlor	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Heptachlor epoxide	1/29/2009	ug/kg	<1.0	<1.0	<1.0	<1.0
Methoxychlor	1/29/2009	ug/kg	<5.0	<5.0	<5.0	<5.0
Toxaphene	1/29/2009	ug/kg	<50	<50	<50	<50
Arsenic	1/29/2009	mg/kg	1.6	<1.0	<1.0	<1.0

notes -
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram

APPENDIX A

John Love

From: Kamili Siglowide [KSiglowi@dtsc.ca.gov]
Sent: Wednesday, December 31, 2008 7:07 PM
To: love@geoconinc.com; sbrown@suesd.org
Cc: holly.moore@diablogreen.com; Jimmy Spearow; Ella Henson; Lesley Miles
Subject: Opal Cliff School

Good afternoon,

This is a note to let you know that DTSC has reviewed the Preliminary Environmental Workplan for the Opal Cliff School and will approve the workplan with the following modifications:

1) DTSC considers that organochlorine pesticides (OCP) were unlikely to have been used in the community garden since OCPs had been banned in the late 1970's. Therefore, DTSC considers that the District should assess the site for its history of agricultural use in the 1940s to the 1960s, analyze four (4) discrete (0 to 0.5 foot deep) soil samples, and analyze them for OCPs and arsenic. The 0.8-acre site should be divided into quarters and one sample should be positioned in the center of each quarter.

2) Report chlordane as technical chlordane instead of alpha chlordane and gamma chlordane.

If you agree with the above modifications, please provide a site map with the new sample locations. Upon receipt, DTSC will prepare an approval letter for the workplan.

If you have any questions, please give me a call.

Kamili Siglowide, Project Manager
Hazardous Substance Engineer
Schools Team
Brownfields and Environmental Restoration Program Department of Toxic Substances Control
8800 Cal Center Drive, Sacramento CA 95826
WK: (916) 255-6527
FAX: (916) 255-3734
ksiglowi@dtsc.ca.gov

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
8800 Cal Center Drive
Sacramento, California 95826

Arnold Schwarzenegger
Governor

January 21, 2009

Ms. Sherree Brown
Assistant Superintendent, Business Services
Soquel Union Elementary School District
620 Monterey Avenue
Capitola, California 95010

APPROVAL OF PRELIMINARY ENVIRONMENTAL ASSESSMENT WORKPLAN, OPAL CLIFF SCHOOL SITE, 4400 JADE STREET, CAPITOLA, (SITE CODE 204210)

Dear Ms. Brown:

The Department of Toxic Substances Control (DTSC) reviewed the revised draft Preliminary Environmental (PEA) Workplan (GEOCON Consultants, Inc., January 2009) received January 9, 2009. The PEA Workplan was revised in response to DTSC comments forwarded in an e-mail dated December 21, 2008. The PEA Workplan includes site background information and proposes investigation activities for the site.

The 0.8-acre site is located in the northeast corner of a larger 9.6-acre parcel. The site consists of a community garden, concrete sidewalks, grass and tree areas, and portions of a soccer field and parking lot. The site was purchased by the Soquel Union Elementary School District (District) in 1956; however, the site has been vacant from at least 1948 until 1981, when the construction of the community center was completed. The site will be investigated for organochlorine pesticides and arsenic related to past agricultural activities.

DTSC comments have been adequately addressed and the PEA Workplan is hereby approved. If conditions differ from those presented in the approved PEA Workplan, additional work may be necessary.

In accordance with the Education Code §17210.1(b), the District has provided a sample work notice in the revised PEA Workplan that will be distributed to residences in the immediate area in advance of field investigation activities. DTSC approves the work notice in form. Please notify DTSC a minimum of 48 hours in advance for changes in the field work schedule.

Printed on Recycled Paper

If you have any questions regarding the project, please contact me at (916) 255-6527 or via e-mail at ksiglowi@dtsc.ca.gov.

Sincerely,

Kamili Siglowide, Project Manager
Schools Team - Sacramento Office
Brownfields and Environmental Restoration Program

cc: (via e-mail)

John Love, P.G.
Sr. Project Manager
GEOCON Consultants, Inc.
love@geoconinc.com

Leslie Miles, AIA, LEED, AP
Weston Miles Architects, Inc.
lesley@wmarchitects.com

Ms. Holly D. Moore, CSST, REA
Senior Project Manager
DGC Associates, Inc.
Holly.moore@diablogreen.com

Mr. Harold (Bud) Duke, P.G., Acting Chief
Schools Team – Sacramento Office
bduke@dtsc.ca.gov

Mr. Jimmy Spearow, Ph.D., Staff Toxicologist
HERD – Sacramento Office
jspearow@dtsc.ca.gov

Schools Team Reading File – Sacramento Office (hard copy)

APPENDIX B

February 05, 2009

John Love
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 525-4142
FAX: (925) 371-5915

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 103548

RE: Opal Cliffs, E8460-06-01

Attention: John Love

Enclosed are the results for sample(s) received on January 30, 2009 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

for Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-001

Client Sample ID: SS-1
Collection Date: 1/29/2009 1:02:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:	2/2/2009	Analyst: **CL**
Arsenic	1.6	1.0		mg/Kg	1	2/5/2009 11:33 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:	2/3/2009	Analyst: **HL**
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 01:49 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 01:49 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 01:49 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 01:49 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 01:49 PM
Surr: Decachlorobiphenyl	92.0	20-142		%REC	1	2/3/2009 01:49 PM
Surr: Tetrachloro-m-xylene	91.0	25-115		%REC	1	2/3/2009 01:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-002

Client Sample ID: SS-2
Collection Date: 1/29/2009 1:07:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:39 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:03 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:03 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:03 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:03 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:03 PM
Surr: Decachlorobiphenyl	75.5	20-142		%REC	1	2/3/2009 02:03 PM
Surr: Tetrachloro-m-xylene	78.0	25-115		%REC	1	2/3/2009 02:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-003

Client Sample ID: Rinse Blank
Collection Date: 1/29/2009 1:22:00 PM
Matrix: WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
EPA 3010A				EPA 6010B		
RunID: ICP8_090204B	QC Batch: 52746			PrepDate:		2/4/2009 Analyst: CL
Arsenic	ND	0.010		mg/L	1	2/4/2009 02:40 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3510C				EPA 8081A		
RunID: GC9_090205A	QC Batch: 52788			PrepDate:		2/4/2009 Analyst: HL
4,4'-DDD	ND	0.050		µg/L	1	2/5/2009 10:13 AM
4,4'-DDE	ND	0.050		µg/L	1	2/5/2009 10:13 AM
4,4'-DDT	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Aldrin	ND	0.025		µg/L	1	2/5/2009 10:13 AM
alpha-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
beta-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Chlordane	ND	0.25		µg/L	1	2/5/2009 10:13 AM
delta-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Dieldrin	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endosulfan I	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Endosulfan II	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endosulfan sulfate	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin aldehyde	ND	0.050		µg/L	1	2/5/2009 10:13 AM
Endrin ketone	ND	0.050		µg/L	1	2/5/2009 10:13 AM
gamma-BHC	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Heptachlor	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Heptachlor epoxide	ND	0.025		µg/L	1	2/5/2009 10:13 AM
Methoxychlor	ND	0.25		µg/L	1	2/5/2009 10:13 AM
Toxaphene	ND	2.5		µg/L	1	2/5/2009 10:13 AM
Surr: Tetrachloro-m-xylene	87.9	47-117		%REC	1	2/5/2009 10:13 AM
Surr: Decachlorobiphenyl	81.0	29-137		%REC	1	2/5/2009 10:13 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-004

Client Sample ID: SS-3
Collection Date: 1/29/2009 1:27:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:42 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:17 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:17 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:17 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:17 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:17 PM
Surr: Decachlorobiphenyl	64.8	20-142		%REC	1	2/3/2009 02:17 PM
Surr: Tetrachloro-m-xylene	64.1	25-115		%REC	1	2/3/2009 02:17 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-005

Client Sample ID: SS-4
Collection Date: 1/29/2009 1:36:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:		2/2/2009 Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:44 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:		2/3/2009 Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:32 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:32 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:32 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:32 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:32 PM
Surr: Decachlorobiphenyl	73.5	20-142		%REC	1	2/3/2009 02:32 PM
Surr: Tetrachloro-m-xylene	81.3	25-115		%REC	1	2/3/2009 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 103548
Project: Opal Cliffs, E8460-06-01
Lab ID: 103548-006

Client Sample ID: Duplicate
Collection Date: 1/29/2009
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090205B	QC Batch: 52682			PrepDate:	2/2/2009	Analyst: CL
Arsenic	ND	1.0		mg/Kg	1	2/5/2009 11:47 AM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090203B	QC Batch: 52711			PrepDate:	2/3/2009	Analyst: HL
4,4'-DDD	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
4,4'-DDE	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
4,4'-DDT	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Aldrin	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
alpha-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
beta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Chlordane	ND	8.5		µg/Kg	1	2/3/2009 02:46 PM
delta-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Dieldrin	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan I	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan II	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
Endrin ketone	ND	2.0		µg/Kg	1	2/3/2009 02:46 PM
gamma-BHC	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Heptachlor	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	2/3/2009 02:46 PM
Methoxychlor	ND	5.0		µg/Kg	1	2/3/2009 02:46 PM
Toxaphene	ND	50		µg/Kg	1	2/3/2009 02:46 PM
Surr: Decachlorobiphenyl	71.8	20-142		%REC	1	2/3/2009 02:46 PM
Surr: Tetrachloro-m-xylene	74.8	25-115		%REC	1	2/3/2009 02:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

Advanced Technology Laboratories

Date: *05-Feb-09*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-52682** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **PBS** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.0									

Sample ID: **LCS-52682** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **LCSS** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.175	1.0	50.00	0	94.4	80	120				

Sample ID: **103548-001ADUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **SS-1** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.705	1.0						1.595	6.66	20	

Sample ID: **103548-006AMS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **Duplicate** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	97.785	1.0	125.0	0	78.2	42	113				

Sample ID: **103548-006AMSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **2/2/2009** RunNo: **105313**
Client ID: **Duplicate** Batch ID: **52682** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **2/5/2009** SeqNo: **1648371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	96.808	1.0	125.0	0	77.4	42	113	97.78	1.00	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-52746 | SampType: MBLK | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: PBW | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010									

Sample ID: LCS-52746 | SampType: LCS | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: LCSW | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.976	0.010	1.000	0	97.6	85	115				

Sample ID: 103605-004DMS | SampType: MS | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: ZZZZZZ | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.506	0.010	2.500	0	100	66	128				

Sample ID: 103605-004DMSD | SampType: MSD | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: ZZZZZZ | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.504	0.010	2.500	0	100	66	128	2.506	0.0947	20	

Sample ID: 103548-003BDUP | SampType: DUP | TestCode: 6010_W | Units: mg/L | Prep Date: 2/4/2009 | RunNo: 105250
Client ID: Rinse Blank | Batch ID: 52746 | TestNo: EPA 6010B | EPA 3010A | Analysis Date: 2/4/2009 | SeqNo: 1647248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.010						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **MB-52711** SampType: **MBLK** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **PBS** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	12.867		16.67		77.2	25	115				
Surr: Decachlorobiphenyl	13.186		16.67		79.1	20	142				

Sample ID: **LCS-52711** SampType: **LCS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **LCSS** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	15.970	1.0	16.67	0	95.8	59	113				
Dieldrin	15.763	2.0	16.67	0	94.6	59	108				
Endrin	17.473	2.0	16.67	0	105	41	132				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: LCS-52711 | SampType: LCS | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: LCSS | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646765

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-BHC	15.723	1.0	16.67	0	94.3	60	111				
Heptachlor	15.892	1.0	16.67	0	95.3	62	108				
Surr: Tetrachloro-m-xylene	15.549		16.67		93.3	25	115				
Surr: Decachlorobiphenyl	16.464		16.67		98.8	20	142				

Sample ID: 103548-001AMS | SampType: MS | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: SS-1 | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	16.643	2.0	16.67	0.6168	96.1	29	143				
Aldrin	17.116	1.0	16.67	0	103	44	131				
Dieldrin	15.937	2.0	16.67	0	95.6	40	136				
Endrin	18.679	2.0	16.67	0	112	41	146				
gamma-BHC	17.287	1.0	16.67	0	104	45	129				
Heptachlor	17.253	1.0	16.67	0	103	48	126				
Surr: Tetrachloro-m-xylene	14.386		16.67		86.3	25	115				
Surr: Decachlorobiphenyl	16.425		16.67		98.5	20	142				

Sample ID: 103548-001AMSD | SampType: MSD | TestCode: 8081_S | Units: µg/Kg | Prep Date: 2/3/2009 | RunNo: 105228
Client ID: SS-1 | Batch ID: 52711 | TestNo: EPA 8081A EPA 3550B | Analysis Date: 2/3/2009 | SeqNo: 1646767

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	13.974	2.0	16.67	0.6168	80.1	29	143	16.64	17.4	20	
Aldrin	16.765	1.0	16.67	0	101	44	131	17.12	2.07	20	
Dieldrin	15.381	2.0	16.67	0	92.3	40	136	15.94	3.55	20	
Endrin	17.898	2.0	16.67	0	107	41	146	18.68	4.27	20	
gamma-BHC	16.830	1.0	16.67	0	101	45	129	17.29	2.68	20	
Heptachlor	16.714	1.0	16.67	0	100	48	126	17.25	3.17	20	
Surr: Tetrachloro-m-xylene	14.210		16.67		85.2	25	115		0	0	
Surr: Decachlorobiphenyl	16.200		16.67		97.2	20	142		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **103548-006ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **2/3/2009** RunNo: **105228**
Client ID: **Duplicate** Batch ID: **52711** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **2/3/2009** SeqNo: **1646773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	0.982	2.0						0.9345	0	20	
4,4'-DDT	ND	2.0						0	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	12.666		16.67		76.0	25	115		0	0	
Surr: Decachlorobiphenyl	11.675		16.67		70.0	20	142		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W

Sample ID: **MB-52788** SampType: **MBLK** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **PBW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	0.050									
4,4'-DDE	ND	0.050									
4,4'-DDT	ND	0.050									
Aldrin	ND	0.025									
alpha-BHC	ND	0.025									
beta-BHC	ND	0.025									
Chlordane	ND	0.25									
delta-BHC	ND	0.025									
Dieldrin	ND	0.050									
Endosulfan I	ND	0.025									
Endosulfan II	ND	0.050									
Endosulfan sulfate	ND	0.050									
Endrin	ND	0.050									
Endrin aldehyde	ND	0.050									
Endrin ketone	ND	0.050									
gamma-BHC	ND	0.025									
Heptachlor	ND	0.025									
Heptachlor epoxide	ND	0.025									
Methoxychlor	ND	0.25									
Toxaphene	ND	2.5									
Surr: Tetrachloro-m-xylene	0.369		0.5000		73.8	47	117				
Surr: Decachlorobiphenyl	0.441		0.5000		88.2	29	137				

Sample ID: **LCS-52788** SampType: **LCS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **LCSW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	0.483	0.025	0.5000	0	96.7	63	115				
Dieldrin	0.476	0.050	0.5000	0	95.1	62	111				
Endrin	0.475	0.050	0.5000	0	95.1	45	137				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

CLIENT: Geocon Consultants, Inc.
Work Order: 103548
Project: Opal Cliffs, E8460-06-01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W

Sample ID: **LCS-52788** SampType: **LCS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **LCSW** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-BHC	0.485	0.025	0.5000	0	96.9	62	115				
Heptachlor	0.395	0.025	0.5000	0	78.9	60	113				
Surr: Tetrachloro-m-xylene	0.390		0.5000		77.9	47	117				
Surr: Decachlorobiphenyl	0.470		0.5000		94.0	29	137				

Sample ID: **MB-52788MS** SampType: **MS** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **ZZZZZZ** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	0.486	0.050	0.5000	0	97.2	53	113				
Aldrin	0.478	0.025	0.5000	0	95.7	63	115				
Dieldrin	0.475	0.050	0.5000	0	95.0	62	111				
Endrin	0.501	0.050	0.5000	0	100	45	137				
gamma-BHC	0.479	0.025	0.5000	0	95.8	62	115				
Heptachlor	0.458	0.025	0.5000	0	91.5	60	113				
Surr: Tetrachloro-m-xylene	0.393		0.5000		78.6	47	117				
Surr: Decachlorobiphenyl	0.469		0.5000		93.8	29	137				

Sample ID: **MB-52788MSD** SampType: **MSD** TestCode: **8081_W** Units: **µg/L** Prep Date: **2/4/2009** RunNo: **105301**
Client ID: **ZZZZZZ** Batch ID: **52788** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **2/5/2009** SeqNo: **1648237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	0.495	0.050	0.5000	0	99.1	53	113	0.4861	1.90	20	
Aldrin	0.481	0.025	0.5000	0	96.2	63	115	0.4783	0.516	20	
Dieldrin	0.483	0.050	0.5000	0	96.7	62	111	0.4748	1.79	20	
Endrin	0.487	0.050	0.5000	0	97.5	45	137	0.5008	2.73	20	
gamma-BHC	0.483	0.025	0.5000	0	96.6	62	115	0.4789	0.817	20	
Heptachlor	0.409	0.025	0.5000	0	81.8	60	113	0.4577	11.2	20	
Surr: Tetrachloro-m-xylene	0.391		0.5000		78.2	47	117		0	0	
Surr: Decachlorobiphenyl	0.471		0.5000		94.2	29	137		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:

Logged By: Date: 1/30/09

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: GSO

Sample Condition Upon Receipt:
1. CHILLED 5.2 ✓ Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐
3. CONTAINER INTACT Y☐ N☐
4. SEALED Y☐ N☐
5. # OF SPLS MATCH COC Y☐ N☐
6. PRESERVED Y☐ N☐

Client: GEOCON CONSULTANTS, INC.
Attn: John Low
Address: 6671 Brisa Street
City: Livermore State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

Project Name: Opal Cliffs Project #: E8460-06-01 Sampler: (Printed Name) Rich Dreessen (Signature) R S Dreessen

Relinquished by: (Signature and Printed Name) R.S. Dreessen Date: 1/29/09 Time: 16:00 Received by: (Signature and Printed Name) R S Dreessen Date: 1/29/09 Time: 16:00

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: 1/30/09 Time: 9:55

Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: John Low 1/29/09
Print Name Date
Signature

Send Report To:
Attn:
Co: SAME AS ABOVE
Address
City State Zip

Bill To:
Attn:
Co: SAME AS ABOVE
Address
City State Zip

Special Instructions/Comments:
* Report chlordane as "Technical Chlordane", not as alpha and gamma chlordane

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)*	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / BTEX	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	Arsenic	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	103548-01	SS-1	1/29/09	13:02	X									X	X				E	1	J G		
	-2	SS-2		13:07	X									X	X					1	J G		
	-3	Rinse Blank		13:22	X											X				2	L G		
		↓		↓										X		X				1	P P	N	
	-4	SS-3		13:27	X									X	X					1	J G		
	-5	SS-4		13:36	X									X	X					1	J G		
	-6	Duplicate		—	X									X	X					1	J G		

QA/QC: RTNE ☐ CT ☐ SWRCB ☐ Logcode ____ OTHER ____

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

APPENDIX C

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile	Samples per Volume
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.

Charles M Salter Associates Inc

Consultants in
Acoustics
Audio/Visual
System Design
and Telecommunications

130 Sutter Street, Suite 500
San Francisco
California 94104
Tel: 415 397 0442
Fax: 415 397 0454
info@cmsalter.com
www.cmsalter.com

Charles M Salter, PE
David R Schwind, FAES
Anthony P Nash, PE
Eva Duesler
Thomas A Schindler, PE
Kenneth W Graven, PE
Eric L Broadhurst, PE
Philip N Sanders
Robert P Alvarado
John C Freytag, PE
Durand R Begault, Ph.D.
Michael D Toy, PE
Thomas J Corbett
Ross A Jerozal
Jason R Duty
Cristina L Miyar
Joey G D'Angelo
Eric A Yee
Joshua M Roper
Troy Gimbel
Randy D Waldeck
Peter K Holst
Andrew L Stanley
Christopher A Peltier
Timothy G Brown
Jeff Clukey
Ethan Salter
Elaine Y Hsieh
Alexander K Salter
Jeremy L Decker
Ryan McClain
Claudia Kraehe
Heather Migut
Josselyn Salter
Candice Huey
Brian Good
Marva D Noordzee
Debbie Garcia
Jasmine Recidoro
Alison Whitson

OPAL CLIFFS SCHOOL – PHASE ONE ENVIRONMENTAL NOISE STUDY CAPITOLA, CALIFORNIA

3 October 2007

Prepared for:

SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
Sherree Brown, Assistant Superintendent
620 Monterey Ave
Capitola, CA 95010

Prepared by:

CHARLES M. SALTER ASSOCIATES, INC.
Christopher A. Peltier, P.E.
130 Sutter Street, Suite 500
San Francisco, CA 94104
Email: christopher.peltier@cmsalter.com

CSA Project No. 07-0465

INTRODUCTION

This report summarizes our environmental noise study for Phase One of the proposed Opal Cliffs School project in Capitola, California. The purpose of this study is to quantify the noise environment at the project site; compare the noise environment with applicable City and School District standards; and propose mitigation measures as necessary.

Phase One of the project consists of two buildings that will house classroom and administration spaces, a courtyard, and an outside play area. All of the Phase One buildings are located at the northwest area of the site near the existing parking lot.

SUMMARY

Incorporating STC[1] 26 windows and exterior doors into the project design would reduce noise levels to County and School District standards. No mitigation is needed for the outdoor-use areas.

ACOUSTICAL CRITERIA

Capitola City General Plan

The Noise Element of the Capitola City General Plan includes the following policies:

- Policy 5 identifies Noise and Land Use Compatibility Guidelines which outline acceptable exterior noise levels for various land uses including the following:
  - Schools, Libraries, Churches, Hospitals, and Nursing Homes – the "normally acceptable" level is DNL 70 dB or lower.
  - Playgrounds and Neighborhood Parks – an exterior DNL of 70 dB or lower is "normally acceptable" for playgrounds and neighborhood parks.

School District Requirements

The Soquel Union Elementary School District has mandated that classrooms achieve a maximum $L_{eq}(h)$ [2] of 45 dB inside of classrooms and that the outdoor-use spaces achieve a noise level of DNL 70 dB or lower.

---

[1] Sound Transmission Class (STC) – A single-number rating derived from the sound insulation properties of a partition. Numerically, STC represents the number of decibels of speech sound reduction from one side of the partition to the other. Higher STC ratings equate to greater noise reduction.

[2] L_{eq} (h) – The equivalent steady-state A-weighted sound level that, in an hour, would contain the same acoustic energy as the time-varying sound level during the same hour.

NOISE ENVIRONMENT

Noise at the site is dominated by vehicle traffic along 47th Street, Jade Street, and train activity on the Union Pacific Railroad (UPRR) spur to the south. We conducted noise measurements between the 19th and 21st of September 2007. Two long-term 72-hour monitors continuously measured noise levels at the site.

Table 1, below, summarizes the existing (measured) DNL[3] and estimated future[4] DNL at the site. The DNL was dominated by car traffic along 47th and Jade streets.

Table 1: Existing and Estimated Future Noise Environment

Location	Existing DNL	Future DNL
Northwest corner of the site Approximate location of Phase One buildings	58 dB	59 dB
Southeast corner of the site Near train tracks and at-grade crossing	56 dB	57 dB

It [5]is our understanding that the rail spur is used on Mondays, Wednesdays, and Fridays during daytime hours. We measured four train passbys between 19 and 21 September 2007: two on Wednesday and two on Friday. The train passbys occurred at approximately 12:00 p.m. and 4:45 p.m. on both days. The maximum $L_{eq}(h)$ measured were due to train horn blasts.

We understand that the school will be in session between 7 a.m. and 5 p.m. Table 2 lists the maximum hourly average noise levels [L_{eq} (h)] measured during school hours.

Table 2: Maximum Measured $L_{eq}(h)$

Location	Maximum $L_{eq}(h)$ (7 a.m. to 5 p.m.)	Date/Time Occurred
Northwest corner of the site Approximate location of the buildings	73	9/19/2007 11:00
Southeast corner of the site Near the train grade crossing	75	9/21/2007 16:00

ANALYSIS AND RECOMMENDATIONS (Phase One Only)

Exterior-to-Interior Noise

[3] Day-Night Average Noise Level (DNL) – A descriptor established by the U.S. Environmental Protection Agency to describe the average day-night level with a penalty applied to noise occurring during the nighttime hours (10 p.m. to 7 a.m.) to account for the increased sensitivity of people during sleeping hours.

[4] There is no traffic volume data available for Capitola city streets. Caltrans assumes a three percent increase in volume per year, resulting in a one dB increase over ten years. We used the Caltrans model to estimate the future traffic noise at the site.

[5] Report by Rail Technologies, Inc, dated 7 December 2007

To meet the $L_{eq}(h)$ 45 dB criterion at the two buildings located at the northwest corner of the project site, all of the exterior walls should be designed to achieve STC 45. An insulated single-stud wall with three-coat stucco on the exterior and one layer of gypsum board on the interior should meet the STC 45 requirement.

Based on a typical classroom size of 20 foot by 30 foot with ten-foot ceilings, we have calculated the window and door STC ratings needed to meet the project criterion for the buildings. Our calculations are based on a maximum of 30 percent of the walls being glazed and a single exterior door into each classroom. Window and door assemblies will need to achieve an STC rating of 26. Typical dual-pane construction-grade windows achieve approximately STC 28.

Exterior Noise Levels

The outdoor-use spaces, such as play areas and the courtyard, should are exposed to existing noise levels that range between DNL 56 and 58 dB. We estimate that the future DNL at these areas will not exceed 60 dB. This meets the project criterion of DNL 70 dB; therefore, no mitigation is necessary.

* * *

OPAL CLIFFS SCHOOL SITE
NOISE IMPACT STUDY
CAPITOLA, CALIFORNIA

5 December 2008

Prepared for:

SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
Sherree Brown, Assistant Superintendent
620 Monterey Avenue
Capitola, CA 95010

Prepared by:

CHARLES M. SALTER ASSOCIATES, INC.
Christopher A. Peltier, P.E.
130 Sutter Street, Suite 500
San Francisco, CA 94104
Email: christopher.peltier@cmsalter.com

CSA Project No. 08-0523

INTRODUCTION

This report summarizes our noise study for Phase One and Phase Two of the proposed Opal Cliffs School Site project in Capitola, California. The purpose of this study is to quantify the noise impact that the proposed school will have on the surrounding community, compare the noise environment with applicable City and School District standards, and propose mitigation measures as necessary.

Phase One of the project consists of two buildings (one administration/classroom and one classroom), a courtyard, and two outside play areas (see Figure 1). All of the Phase One buildings are located at the northwest area of the site near the existing parking lot. A total of 80 students (40 preschool and 40 elementary) are anticipated for this phase.

Phase Two of the project consists of three classroom buildings, a multi-purpose building, an administration/classroom building, a courtyard, and three play areas (see Figure 2). A total of 400 students (80 preschool and 320 elementary) are anticipated for this phase.

We understand that typical school hours are from 7 a.m. to 5 p.m. For our analysis, we have assumed that the multi-purpose room might be used for community functions and could operate as late as 9 p.m.

SUMMARY

Increased traffic due to the addition of the school will cause noise levels throughout the surrounding community to increase slightly. The traffic noise levels at the school site will likely increase significantly and could cause residents to complain.

HVAC noise from the school will not significantly increase the noise levels at nearby residences.

During recess and lunch times, children will be the dominant noise source at residences with line-of-sight to playgrounds. To reduce the impact, noise barriers could be constructed between the residences and play areas, or the play areas could be moved to alternative locations to reduce the impact on neighbors.

ACOUSTICAL CRITERIA

Capitola Municipal Code Section 9.12.010 ('Noise Prohibited') addresses noise violation conditions. The code is quoted below:

A. *It is unlawful for any person, firm or corporation to make, or permit to be made, any loud, boisterous, irritating, penetrating or unusual noise, or to keep, harbor or maintain, or to permit the keeping, harboring or maintaining of any barking or howling dogs, or to engage in, hold, conduct, operate, or permit the engaging in, holding, conduct or operation of, any business, public meeting or gathering, game, dance, amusement, appliance, contrivance, device, structure, construction, ride, machine, implement, or instrument, the use, engaging in, conduct or*

operation of which makes a loud, penetrating, irritating, boisterous or unusual noise, within two hundred feet of any residence, hotel, apartment house, cabin, cottage, cottage court, lodging facility or any building or place regularly used for sleeping purposes in the city between the hours of ten p.m. and eight a.m. of any day or days.

The Municipal Code does not contain any objective criteria; we recommend that alternative criteria be used. In general, a change of one dB is not noticeable; a change of three dB in noise is considered just noticeable, but not expected to cause significant community response, and a change of five dB is noticeable and has potential to cause a community response. For the purpose of this analysis, we have considered a noise increase of five dB is considered a significant impact.

EXISTING NOISE ENVIRONMENT

Existing noise at the site is dominated by vehicle traffic along 47th Avenue and Jade Street, and train activity on the Union Pacific Railroad (UPRR) spur line to the south. We conducted continuous 72-hour noise measurements between 19 and 21 September 2007 (Wednesday through Friday) at two locations near the project site (reference our 3 October 2007 letter).

Table 1 summarizes the measured DNL[1] at the site. The DNL was dominated by noise from car traffic along 47th Avenue and Jade Street.

Table 1: Existing Noise Environment

Location	Measured DNL
Northwest corner of the site Approximate location of Phase One buildings	58 dB
Southeast corner of the site Near train tracks and at-grade crossing	56 dB
Northeast corner of the site At edge of sidewalk along 47th Ave	63 dB*

* Calculated based on short-term measurement

It is our understanding that the rail spur line is used only on Mondays, Wednesdays, and Fridays during daytime hours[2]. We measured four train pass-bys: two on Wednesday and two on Friday. The train pass-bys occurred at approximately 12:00 p.m. and 4:45 p.m. on both days. The maximum hourly average noise levels [$L_{eq}(h)$] [3]measured were due to

[1] Day-Night Average Sound Level (DNL) – A descriptor established by the U.S. Environmental Protection Agency to describe the average 24-hour sound level, with a penalty applied to noise occurring during the nighttime hours (10 p.m. to 7 a.m.) to account for the increased sensitivity of people during sleeping hours.

[2] Report by Rail Technologies, Inc, dated 7 December 2006

[3] Leq(h) – The equivalent steady-state A-weighted sound level that, in an hour, would contain the same acoustic energy as the time-varying sound level during the same hour.

train horn blasts. Table 2 lists the maximum $L_{eq}(h)$ measured between the 7 a.m. and 5 p.m.

Table 2: Maximum Measured $L_{eq}(h)$

Location	Maximum $L_{eq}(h)$ (7 a.m. to 5 p.m.)	Date/Time Occurred
Northwest corner of the site Approximate location of the buildings	73 dB	9/19/2007 11:00 a.m. to 12:00 a.m.
Southeast corner of the site Near the train grade crossing	75 dB	9/21/2007 4:00 p.m. to 5:00 p.m.

FUTURE NOISE ENVIRONMENT

Traffic Noise

Traffic noise levels in the surrounding community have been estimated based on existing conditions, Phase One and Phase Two traffic counts listed in Higgins Associates Traffic Impact Analysis dated August 2008. Table 4 shows the future (Phase One and Two) noise level [$L_{eq}(h)$] increase due to the increases in peak hour traffic volume for each street included in the Traffic Impact Report.

Table 3: Traffic Noise (L_{eq}) Increase (Peak Hour Traffic Levels)

Street	Phase One Increase (dB)	Phase Two Increase (dB)
Brommer	0	0
41st Avenue South of Brommer	0	0
41st Avenue North of Brommer	0	0
Jade	0	1
Topaz West of 47th Avenue	1	3
Topaz East of 47th Avenue	0	0
45th Avenue North of Jade/Topaz	1	2
45th Avenue South of Jade/Topaz	3	8
Capitola West of 45th Avenue	0	0
Capitola East of 45th Avenue	0	1
47th Avenue North of Topaz	0	0
47th Avenue South of Topaz	0	2
Portola West of 47th Avenue	0	0
Portola East of 47th Avenue	0	0

As shown in Table 3, most of the locations do not see a significant increase in noise level due to traffic. Topaz Street (West of 47th Avenue) will have up to a three dB increase, which could be noticeable; 45th Avenue (South of Jade/Topaz) will have up to an eight dB increase, which could cause complaints by the nearby neighbors.

Mechanical Noise

Mechanical noise levels have been calculated for three locations (see Figure 3). For the purposes of this report, it is assumed that one HVAC unit will serve two classrooms. We understand that the units will be enclosed in the building or mounted adjacent to the

building. Our calculations assume that the HVAC units will have similar noise characteristics to a Carrier[4] five-ton unit.

A total of nine units were evaluated: two each for Buildings A, C, D, and E, and one for Building B. Condensing units, cooling towers, generators, and other equipment were not evaluated. If additional equipment is added, we are available to review it and amend our report. It was also assumed that classroom and administration buildings would operate between 7 a.m. and 6 p.m., while the multi-purpose building would operate between 8 a.m. and 9 p.m.

Based on the above assumptions, we estimate that the mechanical equipment will cause a maximum increase of one dB for Phase One and two dB for Phase Two at Location 1. This increase is not likely to be noticeable to the residents. Locations Two and Three will not see an increase in noise level due to mechanical equipment[5].

Child Noise

Based on our understanding of the project, we have estimated the noise level at the three locations identified on Figure 3 due to child noise, under the following assumptions:

- Phase One child count: 40 Preschool, 40 Elementary
- Phase Two child count: 80 Preschool, 320 Elementary
- Recess times:
  10:00 a.m. to 10:30 a.m. (two 15-minute recesses)
- Lunch Time:
  12:00 a.m. to 12:40 p.m. (two 20-minute recesses)
- The maximum number of students outside at any time is:

Play Area 1:	Phase 1 – 20 students
	Phase 2 – 40 students
Play Area 2:	Phase 1 – 40 students
	Phase 2 – 80 students
Play Area 3:	Phase 1 – N/A
	Phase 2 – 80 students

Previous measurements (conducted by our firm) of children during outdoor play were used to estimate the noise level generated by the children.

Children will be the dominant noise source at Location 1 during recess and lunch times. Locations 2 and 3 will not have a significant increase in noise level in Phase One. In Phase Two, children may slightly increase the background noise at Location 3 during the

[4] Carrier WeatherMaker Series 50TC– www.commercial.carrier.com – 81 dBA PWL.

[5] Appendix A – Tables A-1 and A-2 show the contribution of mechanical equipment to the overall noise level increase at each of the three locations evaluated.

time period that they our outside. We estimate an increase in the noise environment by up to four dB during this time[6] due to traffic and child noise.

Cumulative Noise

The traffic, mechanical, and child noise at each location were combined to determine the cumulative impact. The predicted cumulative noise levels were compared to the measured $L_{eq}(h)$ data to determine the increase in noise level due to school-related activity (see Table 4) Tables A-1 and A-2 in Appendix A show the contributions to the overall increase in noise level of each type of noise source (traffic, HVAC, and children) individually for Phases One and Two respectively.

Table 4: Increase in $L_{eq}(h)$

	Phase One Increase (dB)			Phase Two Increase (dB)		
Time of Day	**Loc 1**	**Loc 2**	**Loc 3**	**Loc 1**	**Loc 2**	**Loc 3**
7:00 a.m.	2	0	3	3	2	8
8:00 a.m.	1	0	3	3	2	8
9:00 a.m.	2	0	3	4	2	8
10:00 a.m.	10	0	1	13	1	4
11:00 a.m.	1	0	0	2	0	0
12:00 p.m.	10	0	1	13	1	4
1:00 p.m.	0	0	3	2	1	7
2:00 p.m.	0	0	3	2	1	7
3:00 p.m.	0	0	3	2	1	7
4:00 p.m.	0	0	1	1	0	4
5:00 p.m.	0	0	1	1	0	4
6:00 p.m.	0	0	1	1	0	4
7:00 p.m.	0	0	0	0	0	0
8:00 p.m.	0	0	0	0	0	0
9:00 p.m.	0	0	0	0	0	0

[6] Appendix A – Tables A-1 and A-2 show the contribution of child noise to the overall noise level increase at each of the three locations evaluated.

ANALYSIS AND RECOMMENDATIONS

Traffic Noise

Traffic noise can be reduced by providing sound walls along the roadways with the greatest increase in traffic. One key area will be the parking lot and 45th Avenue south of Topaz/Jade Street. A barrier could be constructed along the residential property lines to reduce the noise impact on those residences. Other areas are not expected to see a significant increase in noise level and should not need sound walls.

Mechanical Noise

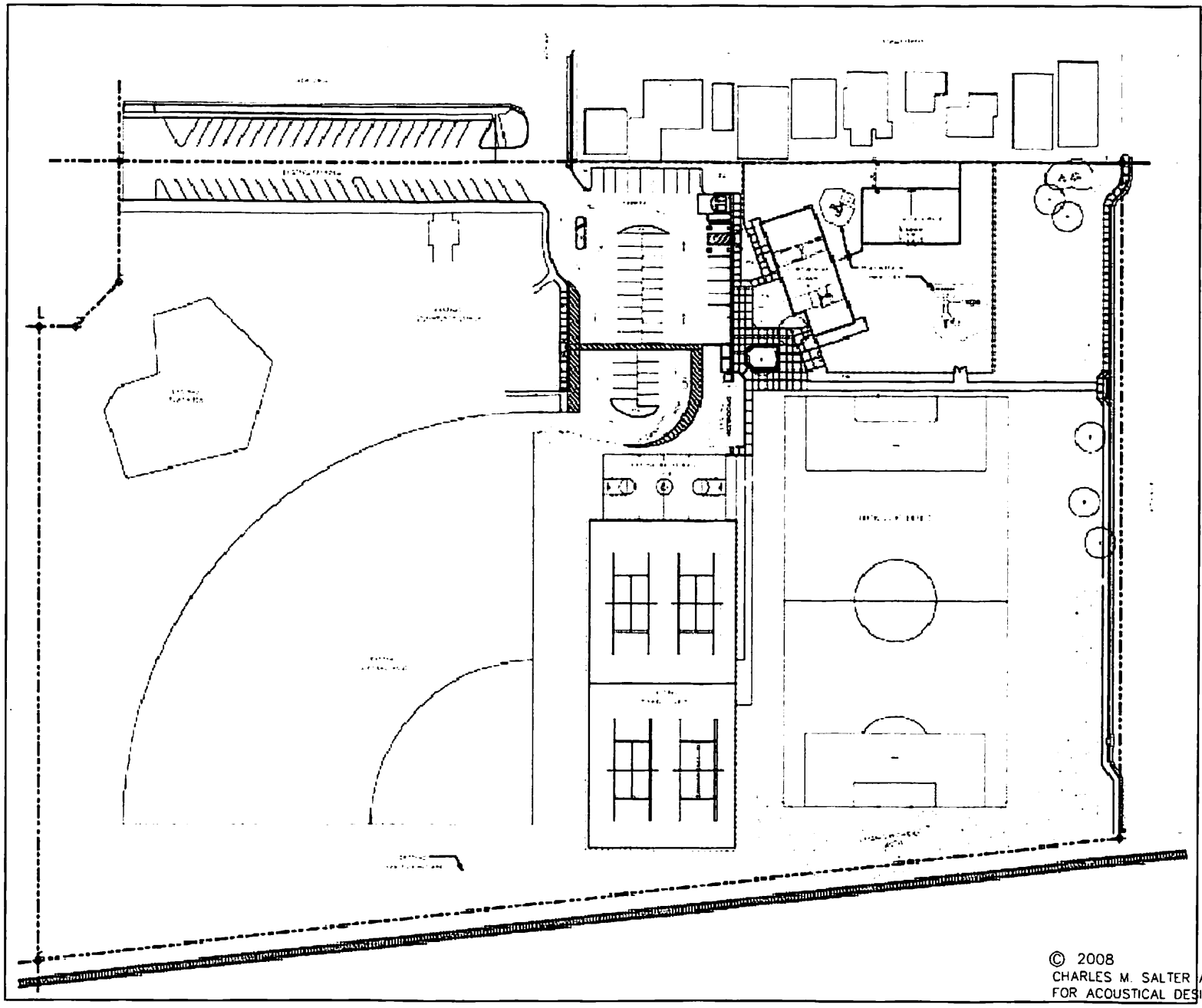
Care should be taken when selecting HVAC units as well as the mounting locations. Calculations based on the selected units should be conducted to estimate the noise level at the school property line and appropriate noise reduction measures (e.g., silencers, internal acoustical lining) should be implemented to reduce the impact on adjacent residences.

Child Noise

A six-foot tall noise barrier along the north property line of the school would significantly reduce the impact of child noise on the adjacent properties (by up to 6 dB). We estimate that a barrier at this location would reduce the impact of child noise to acceptable levels (i.e. less than a five dB increase), matching that of the mechanical equipment for Phase One. During Phase Two, the child noise would be the dominant noise source during recesses[7]. If the small child play area can be repositioned during Phase 2, the impact on the nearest residences could be further reduced.

* * *

[7] The Higgins Associates Traffic Impact Analysis does not include traffic volume data between the hours of 10 a.m. and 1 p.m., when the children will likely be at recess.



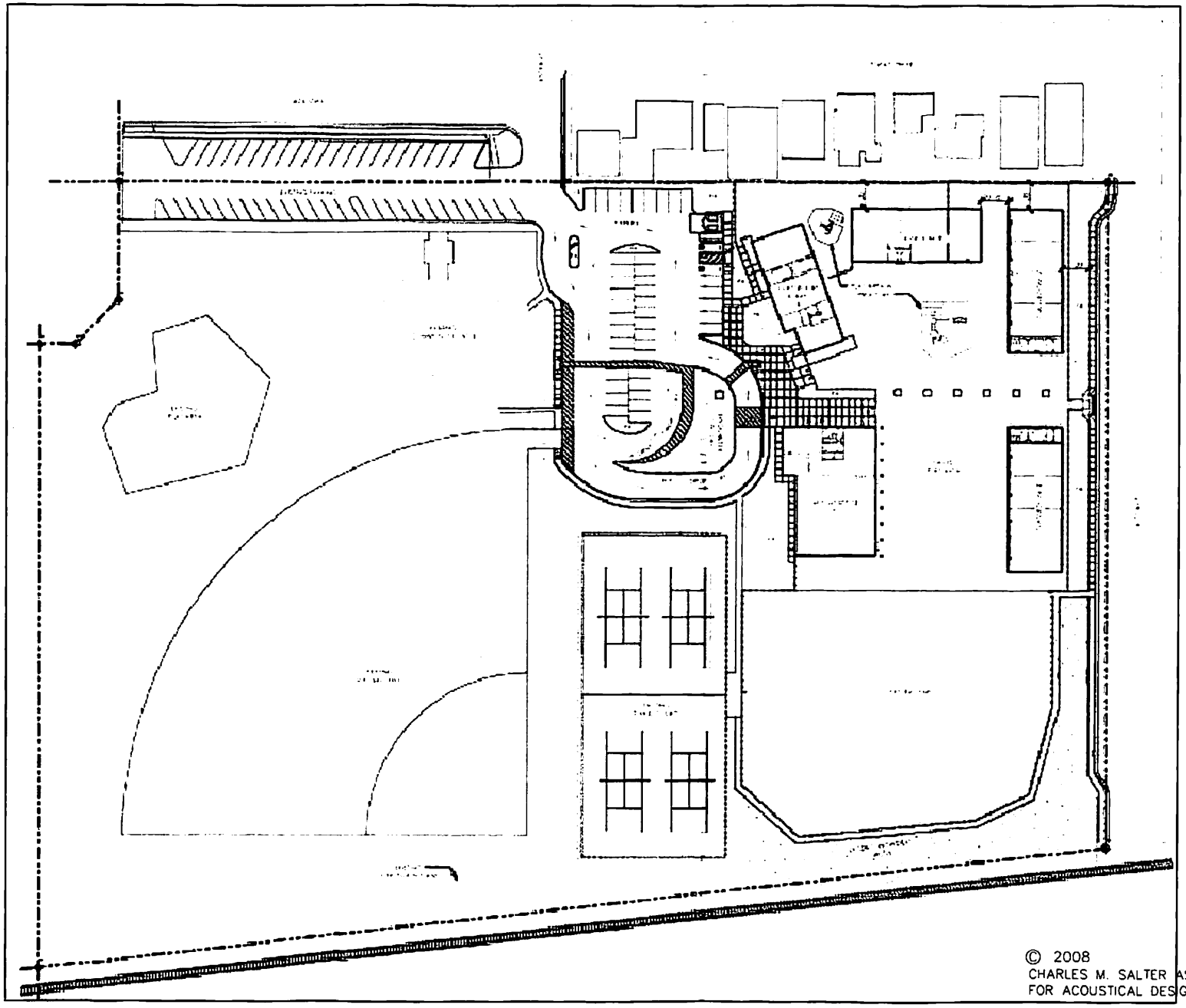
© 2008
CHARLES M. SALTER ASSOCIATES, INC.
FOR ACOUSTICAL DESIGN INFORMATION ONLY

OPAL CLIFFS SCHOOL
PHASE ONE SITE PLAN

FIGURE 1

CAP
29 Oct 2008

Charles M Salter Associates Inc 130 Sutter Street San Francisco California 94104 Tel 415 397 0442 Fax 415 397 0454



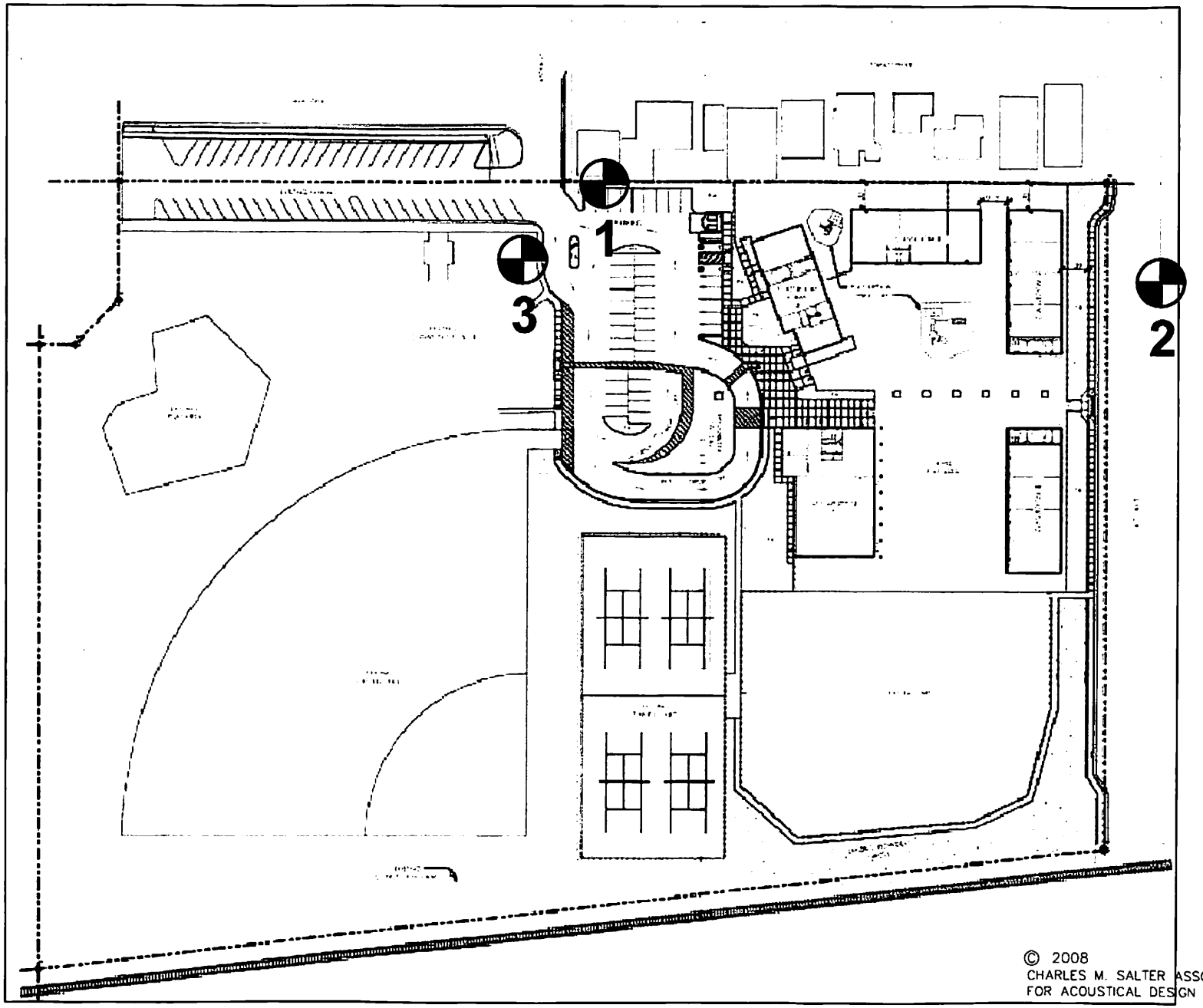
© 2008
CHARLES M. SALTER ASSOCIATES, INC.
FOR ACOUSTICAL DESIGN INFORMATION ONLY

OPAL CLIFFS SCHOOL
PHASE TWO SITE PLAN

FIGURE 2

CAP
29 Oct 2008

Charles M Salter Associates Inc 130 Sutter Street San Francisco California 94104 Tel 415 397 0442 Fax: 415 397 0454



© 2008
CHARLES M. SALTER ASSOCIATES, INC.
FOR ACOUSTICAL DESIGN INFORMATION ONLY

OPAL CLIFFS SCHOOL
NOISE ANALYSIS LOCATIONS

FIGURE 3

CAP
29 Oct 2008

Charles M Salter Associates Inc 130 Sutter Street San Francisco California 94104 Tel 415 397 0442 Fax 415 397 0454

APPENDIX A

Table A-1: Phase One Increase in $L_{eq}(h)$ (dB)

Time of Day	Location 1			Location 2			Location 3		
	Traffic	HVAC	Child	Traffic	HVAC	Child	Traffic	HVAC	Child
7:00 a.m.	**1**	1	0	**0**	0	0	**3**	0	0
8:00 a.m.	**1**	1	0	**0**	0	0	**3**	0	0
9:00 a.m.	**1**	1	0	**0**	0	0	**3**	0	0
10:00 a.m.	0	1	**10**	**0**	0	0	0	0	**1**
11:00 a.m.	0	**1**	0	**0**	0	0	**0**	0	0
12:00 p.m.	0	1	**10**	**0**	0	0	0	0	**1**
1:00 p.m.	**0**	0	0	**0**	0	0	**3**	0	0
2:00 p.m.	**0**	0	0	**0**	0	0	**3**	0	0
3:00 p.m.	**0**	0	0	**0**	0	0	**3**	0	0
4:00 p.m.	**0**	0	0	**0**	0	0	**1**	0	0
5:00 p.m.	**0**	0	0	**0**	0	0	**1**	0	0
6:00 p.m.	**0**	0	0	**0**	0	0	**1**	0	0
7:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0
8:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0
9:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0

Table A-2: Phase Two Increase in $L_{eq}(h)$ (dB)

Time of Day	Location 1			Location 2			Location 3		
	Traffic	HVAC	Child	Traffic	HVAC	Child	Traffic	HVAC	Child
7:00 a.m.	**3**	1	0	**2**	0	0	**8**	0	0
8:00 a.m.	**3**	1	0	**2**	0	0	**8**	0	0
9:00 a.m.	**3**	1	0	**2**	0	0	**8**	0	0
10:00 a.m.	0	1	**13**	0	0	**1**	0	0	**4**
11:00 a.m.	0	**2**	0	**0**	0	0	**0**	0	0
12:00 p.m.	0	1	**13**	0	0	**1**	0	0	**4**
1:00 p.m.	**2**	1	0	**1**	0	0	**7**	0	0
2:00 p.m.	**2**	1	0	**1**	0	0	**7**	0	0
3:00 p.m.	**2**	1	0	**1**	0	0	**7**	0	0
4:00 p.m.	**1**	0	0	**0**	0	0	**4**	0	0
5:00 p.m.	**1**	0	0	**0**	0	0	**4**	0	0
6:00 p.m.	**1**	0	0	**0**	0	0	**4**	0	0
7:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0
8:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0
9:00 p.m.	**0**	0	0	**0**	0	0	**0**	0	0

*Bolded noise levels are the dominant noise source for each hour.

APPENDIX I
CONSISTENCY ANALYSIS

INTRODUCTION

Pursuant to the requirements of Section 30605 of the Coastal Act, the Soquel Union Elementary School District Opal Cliffs Public Works Plan is in conformance with the City of Capitola LCP. The following consistency analysis compares Plan policies and implementing actions with the city's applicable LCP policies, and provides a summary of the District Plan conformity with City's LCP. This consistency analysis also includes applicable Coastal Act Policies to provide continuity where the City's LCP is silent. Comparisons are provided in the order presented in Sections 2.0 – 7.0 of the Plan.

Consistency – Locating and Planning New or Intensified Development and Public Works Facilities

The uses of the site proposed by the Public Works Plan are consistent with Coastal Plan Land Use Designations for allowable uses and uses permitted by the Coastal Zone Combining District. As discussed in more detail in the Plan Section 2.0, Land Use, the City of Capitola General Plan/Coastal Land Use Plan Sphere of Influence Map identifies allowable uses on the site as parks and open space and educational facilities. The 5.13-acre eastern portion of the Plan area is designated on the City's Land Use Map site as "SC", Community Facility-School, and the approximately 4.66-acre western portion of the site is designated "P", Parks and Open Space. The City of Capitola Zoning Map identifies the basic underlying zoning on the entire site as "PF" (Public Facility District). The site is also located within the Coastal Zone ("CZ") Combining District (City of Capitola Municipal Code Chapter 17.46), which implements the policies in the Land Use Plan.

According to the CZ Combining District Overlay, permitted uses in the CZ Combining District "are those allowed in the basic underlying zoning district" (Municipal Code Section 17.46.020). The principal permitted uses in the underlying PF zone district are identified in Municipal Code Section 17.42.040, and include facilities owned, leased or operated by the school district; public or private schools and colleges and universities and their ancillary facilities. As such, school uses are permitted uses on the entire site.

A comparison of Opal Cliffs Land Use Plan policies and implementing actions with the Coastal Act and City of Capitola LCP are presented in Table 1, Land Use Consistency. The City has incorporated the LCP into its general plan and for reference, the locations of LCP policies in the respective general plan elements are referred to parenthetically after each policy number.

Table 1 Land Use Consistency

Coastal Act	City of Capitola LCP	Public Works Plan
Section 30254. New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of	**Policy 4 (Conservation).** It shall be the policy of the City of Capitola to cooperate with other agencies in the County and/or region for master planning, delivery and allocation of available Public Services consistent with the Coastal Act, Sec. 32054 and 32055 (i.e. water, [fire], sewer, schools).	**Consistent.** The Plan provides a balance of recreational uses and public school uses on the site. The proposed Plan area is owned by the District and is an existing school site. The proposed Plan and Phase One and Phase Two projects increase the availability of school services for local residents within the District's service area.

new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.		
Policy 30253(5). New development shall: Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.	**Policy 7 (Land Use).** It shall be the policy of the City of Capitola to maintain and enhance access to Capitola Beach, Village, and Wharf while maintaining and enhancing the existing character of Capitola Village and the surrounding residential neighborhoods. The intensity of new development shall be limited to the availability of parking and other alternate solutions, such as the shuttle bus and remote parking.	**Consistent.** Land Use Goal 2 requires development on the site to be compatible with adjoining uses. The proposed Plan maintains and enhances the existing character of the residential neighborhood by maintaining existing land use designations on the site, allowing the continued use of existing recreational facilities by the public, and implementing a new school to serve local residents. The Plan Policy LU-3 requires the creation of buffers standards and Implementation Actions LU-3.1 – LU-3.6 provide design standards for new development including, but not limited to, increased setbacks, landscaping, building height limits, and low profile buildings near existing residential uses. The Plan increases the availability of public parking on the site which is available for the elementary school uses and the public when school is not in session.

Section 30255. Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.	**Policy 17 (Land Use).** Areas designated as visitor serving and/or recreational shall be reserved for visitor support services or recreational uses. Permissible uses include, but are not limited to, hotels, motels, hostels, campgrounds, food and drink service establishments, public facilities, public beaches, public recreation areas or parks, and related rental and retail establishments.	**Consistent.** The Plan Area is located inland from the shoreline, and is identified as a recreational/school site in the City of Capitola LCP and general plan. Policies LU-1and LU-2, and Implementing Action LU-1.1 implement existing City of Capitola LCP and General Plan land use and zoning designations for parks, recreation and school uses on the site.
	Policy 21 (Open Space Parks and Recreation). It shall be the policy of the City of Capitola to provide new park sites to fill the existing City park needs. It is also the policy of the City to ensure the protection of passive open spaces through proper development design and permit conditions.	**Consistent.** The Plan land use goals, policies and implementation actions allow continued public use of recreational facilities on the site, and foster joint use of the recreational and school facilities in the future.

Consistency – Circulation

Coastal Act policies related to transportation and circulation are included in the public access section of this analysis. The transportation and traffic policies listed in the Capitola LCP apply only to the Village area and roadways that are adjacent to the immediate coastline. The proposed Plan area is located in a residential neighborhood inland from the more popular coastal routes and is not directly connected with arterials leading to the coast. Traffic would increase as a result of Phase One and Phase Two improvements, but would remain at or below the City's threshold of LOS C. Plan policies encourage the use of alternative transportation and other measures to reduce the number of vehicles on nearby streets and preserve the quality of life in the immediate neighborhood near the project site. Circulation Policies 1 through 3 guide the development of additional parking and safe access to and from the site. Circulation Policies 4-6 encourage the use of alternative

modes of transportation, discourage traffic on the smaller east-west residential streets, and include the payment of impact fees. A complete list of Plan circulation policies and implementing actions are found in Section 3.0, Circulation, and also in Section 4.0, Parks and Recreation, Visual Resources, Public Access, and Natural Resources.

Consistency – Parks and Recreation

Article III of the Coastal Act lists provisions for recreational opportunities in coastal areas. Coastal Act Policy 30210 states that "recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse." The City's LCP Parks and Recreation policies focus on coastal-dependent and visitor-serving coastal resource areas along the shoreline and are silent with respect to inland areas of the coastal zone. Nevertheless, the Plan provides for the continued use of recreational facilities on the school site, contributing to the overall availability of recreational opportunities in the City, and also promotes future joint use of recreational and school facilities in the future. The Plan maintains the recreational opportunities on the site and is therefore consistent Article III and with the City's LCP. Plan consistency with Coastal Act Policies related to Public Recreation are presented in Table 2, Parks and Recreation.

Table 2-Parks and Recreation

Coastal Act	Capitola LCP	Public Works Plan
Policy 30212.5. Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.	Refer to Table 1 for additional discussion.	**Consistent.** Policies PR-1 and PR-2 and their respective implementing actions allow the continued use of recreational amenities on the site and foster joint/multiple use of parking and other public facilities when school is not in session. The Plan increases the availability of public parking on the site.

Policy 30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.		**Consistent.** In addition to the Plan Land Use policies, Policies PR-1 and PR-2 make full use of the school site as a school/park and contributes to the City's network of recreational facilities opportunities.

Consistency – Visual Resources and Public Access

Coastal Act Policy 30210 states that "recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse." As demonstrated by the land use policies.

Although the Plan area is not located within any identified public view corridors, the Plan includes policies sensitive to views of the site and to the coast from adjacent residences. In addition to the design standards outlined in Section 2.0, Policy PA-3 and Implementing Action PA-3.1 are intended to minimize impacts of school development on the site to the extent feasible. The Plan also includes policies and provisions to maintain public access to the site. The consistency of the Plan with applicable LCP Policies is summarized in Table 2, Visual Resources and Public Access.

Table 3 – Visual Resources and Public Access

Coastal Act	City of Capitola LCP	Public Works Plan
Policy 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to	**Policy 16 (Open Space Parks and Recreation).** Permitted development shall not block or detract from public view to and along Capitola's shoreline.	**Consistent.** The proposed project is not located within an identified highly scenic area of the City's coastal zone, nor is the site located within a public view corridor to the coastline. The site is relatively flat and alterations to land forms are anticipated to

minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.		be minimal. In addition to the development standards set forth in the Plan Land Use Policies, in particular Policy LU-3 and related implementing actions, Policy PA-3 and implementing action PA-3.1 protect views of the site and minimize impacts to views toward the coast from adjacent residences. Policy provisions that guide the removal and preservation of trees are included in the discussion of Natural Resources.
Policy 30252. The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby	**Policy 33 (Open Space Parks and Recreation).** Maintain a commitment to all existing access walkways and paths to Capitola Beach.	**Consistent.** Policies PA-1 and PA-2 maintain opportunities for linkages with the City's existing and anticipated coastal trail system by maintaining access opportunities from the site to the Union Pacific railroad right of way, should it eventually be converted to a public trail. Plan policies C-1 through C-3 and related implementing actions also maintain access on the site by increasing public parking availability, providing adequate passenger loading and unloading areas and maintaining pedestrian and bicycle routes across the site at current or greater levels. Additional and improved pedestrian facilities and crosswalks within the neighborhood per the guidance contained in the Caltrans Traffic Manual.

coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.		

Consistency – Natural Resources

The proposed project is consistent the City of Capitola LCP policies which require the protection and conservation of the City's Natural Resources. LCP policies for Natural Resources are found in the Conservation Element of the general plan. Plan consistency with these policies is presented in Table 4, Natural Resources.

Table 4 Natural Resources

Coastal Act	City of Capitola LCP	Public Works Plan
Policy 30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.	**Policy 8 (Conservation).** It shall be the policy of the City of Capitola to require the planting of trees in new development and to protect existing trees by allowing removal only in accordance with the City's Tree Ordinance. The City should encourage new developments to be designed to preserve significant vegetation.	**Consistent.** The project site is not located within or near ESHA, nor were any sensitive plant or animal species identified during a recent survey. Tree removal will be necessary to accommodate the Phase One and Phase Two improvements on the site. Policies NR-1 and NR-2 are intended to preserve biological resources such as trees and nesting birds within the site, including non-native trees. Implementing actions NR1.1 and NR1.2 set forth provisions for tree replacement consistent with the City of Capitola Tree Ordinance.

Policy 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.	**Policy 9 (Conservation).** It shall be the policy of the City of Capitola to take measures within its purview to preserve and improve the quality of the waters of Monterey Bay, and to support Marine Habitats, public recreation, and commercial pursuits consistent with sound resource management principles. **Policy 12 (Conservation).** Parking lots and storm drains, and storm water runoff culverts shall be improved by installing energy dissipaters and sand traps or other types of grease/sediment traps in conjunction with new development or intensification of use. **Policy 13 (Conservation).** The City shall, as a condition of new development, ensure that run-off does not significantly impact the water quality of Capitola's creeks and wetlands through increased sedimentation, biochemical degradation or thermal pollution.	**Consistent.** Policies NR-3 and NR-4 and their related implementing actions are intended to reduce the use of chemicals on the site and minimize urban contaminants in storm water. In addition to these policies and provisions, Policy PF-2 also encourages design features and performance standards consistent with the City's LCP and the City of Capitola Stormwater Management Plan that would limit storm water flows from the site to pre-Phase One and Phase Two levels.

Policy 30253 (3). New development shall [be] consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.		**Consistent.** Consistency with the AQMP is determined by the effect of population increases resulting from new development. The Plan does not include residential uses and is consistent to with the AQMP. For construction related air-quality impacts, the project would be subject to the standard mitigation and/or conditions of approval required by the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Policies NR-5.1, NR-5.2 and NR-6.1 specifically outline actions that the District will take to decrease the air-quality impacts of the project.

Consistency – Cultural Resources

The City of Capitola LCP policies are silent with respect to archaeological and cultural resources. Coastal Act policy 30244 requires the following: "Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required." A cultural resources evaluation was performed on the project site and determined that no significant paleontological, prehistoric or historic archaeological are present on the site. Plan Policy CR-1 and related implementing actions prevent incidental disruption of previously undiscovered archaeological resources on the site during construction. Implementing actions CR-1.1 and CR-1.2 are consistent with the language of the City's general plan policies 24 and 26 which require the preservation, protection and proper disposition of cultural resources. As such the Plan is consistent with the policies and implementations of the Cultural Resources Element of the City of Capitola Land Use Plan/LCP.

Consistency – Public Services

The proposed plan is consistent with the requirements of the Soquel Creek Water District SqCWD) for water supply service, and the Santa Cruz County Sanitation District for wastewater service. The project site is currently connected to the municipal storm drain and the proposed project will increase the amount of runoff from the site. The District Plan intends to achieve sustainable energy consumption by achieving energy efficiency beyond Title 24 requirements for all new construction on the site. The District property is also located within the existing service areas for the police and fire protection services. A comparison of Plan Policies and implementing actions with applicable LCP policies is presented in Table 5, Public Services – Infrastructure.

Table 5 Public Services - Infrastructure

Coastal Act	City of Capitola LCP	Proposed Project
Refer to Policy 30254	**Policy 4 (Conservation).** It shall be the policy of the City of Capitola to cooperate with other agencies in the County and/or region for master planning, delivery and allocation of available Public Services consistent with the Coastal Act, Sec. 32054 and 32055 (i.e. water, [fire], sewer, schools).	**Consistent.** The Plan guides existing recreational uses on the site and implements a new school use on the site. Policy PF-1 states that the proposed project will utilize Soquel Creek Water District (SqCWD) and Santa Cruz County Sanitation District services for the provision of water and wastewater services. The proposed Phase One and Phase Two improvements would demand less water than currently consumed by the community garden use on the site. Policy PF-5 and related implementation actions provide a safe environment within the school grounds and on the site per Capitola Police Department and Capitola Fire Department safety provisions and standards.

Policy 30240 (b). Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.	**Policy 13 (Conservation).** The City shall, as a condition of new development, ensure that run-off does not significantly impact the water quality of Capitola's creeks and wetlands through increased sedimentation, biochemical degradation or thermal pollution. **Policy 15 (Conservation).** The City should coordinate with Santa Cruz County and AMBAG to investigate and implement sound watershed management methods for the land within Capitola to: a) maintain adequate stream flow for fish, wildlife and riparian vegetation; b) control contaminated urban run off; and c) encourage water conservation. **Policy 19 (Conservation).** The City shall encourage energy and water conservation by supporting public education programs, and shall require low water use fixtures in new developments, as well as, encouraging energy conservation techniques in site development and construction.	The project site is located upland from sensitive coastal and marine aquatic resource areas and implementation of the Plan would increase the amount of impervious surfaces on the site; however, policy PF-2 encourages design features and performance standards consistent with the City's LCP and the City of Capitola Stormwater Management Plan that would limit storm water flows from the site to pre-Phase One and Phase Two levels. In addition to Policy PF-2, Policies NR-3 and NR-4 and their related implementing actions are intended to reduce the use of chemicals on the site and minimize urban contaminants in storm water to ensure that storm water run off from the project does not impact water quality. Policies PF-3 and PF-4 include guidance and provisions for water saving fixtures pursuant to SqCWD standards and drought-tolerant landscaping.

Policy 30253 (4). New development shall minimize energy consumption and vehicle miles traveled.		**Consistent.** Policies PF-8 and PF-9 promote energy conservation by providing pre-school programs for children of local residents, and include applicable Title 24 energy conservation requirements in all construction.

Consistency – Hazards

The proposed Plan and related projects do not include the use, transport or disposal of hazardous materials or substances. A comparison of Plan Policies with the City of Capitola LCP policies is presented in Table 6, Hazards. The City of Capitola LCP is silent with respect to hazards from the Union Pacific Rail Road right of way and exposure to noise. Plan policies are included in the table below that address these hazards.

Table 6 Hazards

Coastal Act	City of Capitola LCP	Proposed Project
Policy 30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.	N/A	**Consistent.** The proposed project does not include the transport or use of hazardous substances.

Policy 30253. New development shall: (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.	**Policy 12 (Safety).** The City shall require all new building plans, for public use structures or multi-residential (more than three units), to conform with the Uniform Building Code construction standards. **Policy 13 (Safety).** It shall be the policy of the City of Capitola to adequately plan for natural hazards in new development, reduce risks to life and property, and revise all plans and the Zoning Ordinance to be in conformance with all the policies of the Coastal Act relating to hazards and shoreline structures. Implementation. Require geologic/engineering reports in areas of high seismic shaking for structures subject to public use or multi-residential as required by the UBC Policy 14. All geologic/engineering reports required by the City pursuant to the policies of this component shall be prepared according to the guidelines for practice issued by the California Division of Mines and Geology, specifically CDMG notes Numbers 37 (Guidelines on Geologic/Seismic Reports), 43 (Recommended Guidelines for Determining	**Consistent.** Policy HZ-2 requires that all new buildings shall be constructed in accordance with the applicable building and fire codes for public buildings, and the construction drawings are subject to the approval of the State Architect. The proposed building would be designed and constructed pursuant to state requirements and the most current version of the Uniform Building Code to meet adopted seismic safety requirements. Policy HZ-2.1 states that the District will construct buildings in accordance with current state standards. Policy HZ-2.1 states that the District will conduct appropriate soils and/or geotechnical investigations as necessary for structure design recommendations prior to preparation of design and construction drawings.

	the Maximum Probable Earthquakes), 44 (Recommended Guidelines for Preparing Engineering Geologic Reports) and interpretive Guidelines for Bluff Top Development.	
	Noise. Refer to General Plan Policies 2 and 8, 9 and 10.	**Consistent.** A noise study and supplement were prepared for the proposed plan. The Plan places the school improvements on the opposite side of the site to minimize exposure of school children to noise associated with the train. In addition to the development thresholds and design standards presented in the Land Use section, Policy HZ-3 and its related implementation actions minimize exposure of nearby residences, students, and park users to noise generated by school operations and during construction of the school facilities.

CONCLUSION

As demonstrated by the discussion and policies presented in the Soquel Union Elementary School District Opal Cliffs Public Works Plan, and summarized herein, the Plan is consistent with the goals, policies and provisions of the City of Capitola Local Coastal Program.

This side intentionally left blank.

Santa Cruz County Sanitation District

701 OCEAN STREET, SUITE 410, SANTA CRUZ, CA 95060-4073
(831) 454-2160 FAX (831) 454-2089 TDD: (831) 454-2123

THOMAS L. BOLICH, DISTRICT ENGINEER

RECEIVED
NOV 6 2008
BUSINESS SERVICES

November 5, 2008

SHERREE BROWN, ASSISTANT SUPERINTENDENT
SOQUEL UNION ELEMENTARY SCHOOL DISTRICT
620 Monterey Avenue
Capitola, CA 95010

SUBJECT: SEWER AVAILABILITY AND DISTRICT'S CONDITIONS OF SERVICE FOR THE FOLLOWING PROPOSED DEVELOPMENT:

APN: 034-551-02 APPLICATION NO.: N/A
PARCEL ADDRESS: 4400 JADE STEEET, CAPITOLA, CA
PROJECT DESCRIPTION: PRE SCHOOL/EARLY CHILDHOOD CENTER

Sewer service is available for the subject development upon completion of the following conditions. This notice is effective for one year from the issuance date to allow the applicant the time to receive tentative map, development or other discretionary permit approval. If after this time frame this project has not received approval from the Planning Department, a new sewer service availability letter must be obtained by the applicant. Once a tentative map is approved this letter shall apply until the tentative map approval expires.

Proposed location of on-site sewer lateral(s), clean-out(s), and connection(s) to existing public sewer must be shown on the plot plan of the building permit application.

Water use data (actual and/or projected), and other information as may be required for this project, must be submitted to the District for review and use in fee determination and waste pretreatment requirements <u>before</u> sewer connection permits can be approved.

The plan shall show all existing and proposed plumbing fixtures on floor plans of building application. Completely describe all plumbing fixtures according to table 7-3 of the uniform plumbing code.

SOQUEL CREEK WATER DISTRICT

RECEIVED
MAY 5 2009
BUSINESS SERVICES

Board of Directors
Dr. Thomas R. LaHue, *President*
Bruce Daniels, *Vice President*
Dr. Don Hoernschemeyer
Dr. Bruce Jaffe
Daniel F. Kriege

Laura D. Brown, *General Manager*

RECEIVED
MAY 08 2009
By

April 24, 2009

Ms. Sherree Brown, Assistant Superintendent
Soquel Union Elementary School District
620 Monterey Ave.
Capitola, CA 95010

SUBJECT: Conditional Water Service Application – Phase I for Buildings A&B, Pre School/Early Childhood Center at 4400 Jade Street, Capitola, APN 034-551-02

Dear Ms. Brown:

In response to the subject application, the Board of Directors of the Soquel Creek Water District at their regular meeting of April 21, 2009 voted to grant the Soquel Union Elementary School District a Conditional Will Serve Letter for Phase I of your proposed project so that you may proceed through the appropriate planning entity. An Unconditional Will Serve Letter cannot be granted until such time as you are granted a Final Permit from the California State Architect's Office for your project. At that time, an Unconditional Will Serve Letter will be granted subject to your meeting the requirements of the District's Water Demand Offset Program and any additional conservation requirements of the District prior to obtaining the actual connection to the District facilities subject to the provisions set forth below.

Possible Infrastructure Check List	yes	no
1. LAFCO Annexation required		X
2. Water Main Extension required off-site		X
3. On-site water system required		X
4. New water storage tank required		X
5. Booster Pump Station required		X
6. Adequate pressure	X	
7. Adequate flow	X	
8. Frontage on a water main	X	
9. Other requirements that may be added as a result of policy changes.	X	

This present indication to serve is valid for a two-year period from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future or that additional conditions, not otherwise listed in this letter, will not be imposed by the District prior to granting water service. Instead, this present indication to serve is intended to acknowledge that, under existing conditions, water service would be available on condition that the developer agrees to provide the following items without cost to the District:

MAIL TO: P. O. Box 1550 • Capitola, CA 95010
5180 Soquel Drive • TEL: 831-475-8500 • FAX: 831-475-4291 • WEBSITE: www.soquelcreekwater.org

1) Destroys any wells on the property in accordance with State Bulletin No. 74;
2) Satisfies all conditions imposed by the District to assure necessary water pressure, flow and quality;
3) Satisfies all conditions of Resolution No. 03-31 Establishing a Water Demand Offset Policy for New Development, which states that all applicants for new water service shall be required to offset expected water use of their respective development by a 1.2 to 1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear those costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to reimburse administrative and inspection costs in accordance with District procedures for implementing this program;
4) Satisfies all conditions for water conservation required by the District at the time of application for service, including the following:
    a) Plans for a water efficient landscape and irrigation system shall be submitted to District Conservation Staff for approval. Current Water Use Efficiency Requirements are enclosed with this letter, and are subject to change;
    b) All interior plumbing fixtures shall be low-flow and all Applicant-installed water-using appliances (e.g. dishwashers, clothes washers, etc.) shall have the EPA Energy Star label plus new clothes washers also shall have a water use factor of 8.5 or less;
    c) District Staff shall inspect the completed project for compliance with all conservation requirements prior to commencing domestic water service;
5) Completes LAFCO annexation requirements, if applicable;
6) All units shall be individually metered with a minimum size of 5/8-inch by ¾-inch standard domestic water meters;
7) A memorandum of the terms of this letter shall be recorded with the County Recorder of the County of Santa Cruz to insure that any future property owners are notified of the conditions set forth herein.

Future conditions which negatively affect the District's ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing customers while extending new service to your development. In that case, service may be denied.

You are hereby put on notice that the Board of Directors of the Soquel Creek Water District is considering adopting additional policies to mitigate the impact of new

development on the local groundwater basins, which are currently the District's only source of supply. Such actions are being considered because of concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain healthy aquifers. The Board may adopt additional mandatory mitigation measures to further address the impact of development on existing water supplies, such as the impact of impervious construction on groundwater recharge. Possible new conditions of service that may be considered include designing and installing facilities or fixtures on-site or at a specified location as prescribed and approved by the District which would restore groundwater recharge potential as determined by the District. The proposed project would be subject to this and any other conditions of service that the District may adopt prior to granting water service. As policies are developed, the information will be made available at the District Office.

Sincerely,
SOQUEL CREEK WATER DISTRICT

Jeffery N. Gailey.
Engineering Manager/Chief Engineer

Enclosures: Water Use Efficiency Requirements & Sample Unconditional Water Service Application

SOQUEL CREEK WATER DISTRICT

RECEIVED
MAY 5 2009
BUSINESS SERVICES

Board of Directors
Dr. Thomas R. LaHue, *President*
Bruce Daniels, *Vice President*
Dr. Don Hoernschemeyer
Dr. Bruce Jaffe
Daniel F. Kriege

Laura D. Brown, *General Manager*

April 24, 2009

Ms. Sherree Brown, Assistant Superintendent
Soquel Union Elementary School District
620 Monterey Ave.
Capitola, CA 95010

SUBJECT: Conditional Water Service Application – Phase II for Buildings C, D & E, Pre School and K-5 Elementary School at 4400 Jade St., Capitola, APN 034-551-02

Dear Ms. Brown:

In response to the subject application, the Board of Directors of the Soquel Creek Water District at their regular meeting of April 21, 2009 voted to grant the Soquel Union Elementary School District a Conditional Will Serve Letter for Phase II contingent upon "***contacting the District for requirements of service when Draft project plans are available from the California State Architects Office,***" for your proposed project so that you may proceed through the appropriate planning entity. An Unconditional Will Serve Letter cannot be granted until such time as you are granted a Final Discretionary Permit on your project. At that time, an Unconditional Will Serve Letter will be granted subject to your meeting the requirements of the District's Water Demand Offset Program and any additional conservation requirements of the District prior to obtaining the actual connection to the District facilities subject to the provisions set forth below.

Possible Infrastructure Check List	yes	no
1. LAFCO Annexation required		X
2. Water Main Extension required off-site		X
3. On-site water system required		X
4. New water storage tank required		X
5. Booster Pump Station required		X
6. Adequate pressure	X	
7. Adequate flow	X	
8. Frontage on a water main	X	
9. Other requirements that may be added as a result of policy changes.	X	

This present indication to serve is valid for a two-year period from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future or that additional conditions, not otherwise listed in this letter, will not be imposed by the District prior to granting water service. Instead, this present indication to serve is intended to acknowledge that, under existing

MAIL TO: P. O. Box 1550 • Capitola, CA 95010
5180 Soquel Drive • TEL: 831-475-8500 • FAX: 831-475-4291 • WEBSITE: www.soquelcreekwater.org

conditions, water service would be available on condition that the developer agrees to provide the following items without cost to the District:

1) Destroys any wells on the property in accordance with State Bulletin No. 74;
2) Satisfies all conditions imposed by the District to assure necessary water pressure, flow and quality;
3) Satisfies all conditions of Resolution No. 03-31 Establishing a Water Demand Offset Policy for New Development, which states that all applicants for new water service shall be required to offset expected water use of their respective development by a 1.2 to 1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear those costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to reimburse administrative and inspection costs in accordance with District procedures for implementing this program;
4) Satisfies all conditions for water conservation required by the District at the time of application for service, including the following:
    a) Plans for a water efficient landscape and irrigation system shall be submitted to District Conservation Staff for approval. Current Water Use Efficiency Requirements are enclosed with this letter, and are subject to change;
    b) All interior plumbing fixtures shall be low-flow and all Applicant-installed water-using appliances (e.g. dishwashers, clothes washers, etc.) shall have the EPA Energy Star label plus new clothes washers also shall have a water use factor of 8.5 or less;
    c) District Staff shall inspect the completed project for compliance with all conservation requirements prior to commencing domestic water service;
5) Completes LAFCO annexation requirements, if applicable;
6) All units shall be individually metered with a minimum size of 5/8-inch by ¾-inch standard domestic water meters;
7) A memorandum of the terms of this letter shall be recorded with the County Recorder of the County of Santa Cruz to insure that any future property owners are notified of the conditions set forth herein.

Future conditions which negatively affect the District's ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing customers while extending new service to your development. In that case, service may be denied.

You are hereby put on notice that the Board of Directors of the Soquel Creek Water District is considering adopting additional policies to mitigate the impact of new development on the local groundwater basins, which are currently the District's only source of supply. Such actions are being considered because of concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain healthy aquifers. The Board may adopt additional mandatory mitigation measures to further address the impact of development on existing water supplies, such as the impact of impervious construction on groundwater recharge. Possible new conditions of service that may be considered include designing and installing facilities or fixtures on-site or at a specified location as prescribed and approved by the District which would restore groundwater recharge potential as determined by the District. The proposed project would be subject to this and any other conditions of service that the District may adopt prior to granting water service. As policies are developed, the information will be made available at the District Office.

Sincerely,
SOQUEL CREEK WATER DISTRICT

Jeffery N. Gailey.
Engineering Manager/Chief Engineer

Enclosures: Water Use Efficiency Requirements & Sample Unconditional Water Service Application

APPENDIX K
IMPLEMENTING PROCEDURES

INTRODUCTION

Public Works Plan Project Review and Authorization Procedures

The purpose of this appendix is to set forth procedures for implementation of the Soquel Union Elementary School District ("District") Public Works Plan ("PWP"), including procedures for Coastal Commission review and approval of the District's PWP, concurrent review and approval of the initial Phase One project submitted to the Commission for a development permit concurrent with the submittal of the PWP, and subsequent review and approval of any other "specific project contained in the certified plan", including the remaining Phase Two project or any portion thereof. The Phase One project and Phase Two project are contained in the District PWP for the District's school facilities improvements to the District property located at 4400 Jade Street in Capitola.

This appendix is divided into six sections. Section One sets forth the applicable procedures for Commission review and approval of the District PWP, concurrent review and approval of the initial Phase One project submitted to the Commission for a development permit concurrent with the submittal of the PWP, and subsequent review and approval of any other "specific project contained in the certified plan", including the remaining Phase Two project or any portion thereof. Section Two sets forth definitions, general provisions and supplemental reports for any specific project which is contained in the PWP and which is not included in the Phase One project. Section Three sets forth procedures to notify interested parties of impending development on the Opal Cliffs site not included in the Phase One project. Section Four sets forth the Coastal Commission's areas of responsibility with regard to the PWP Project review process. Section Five sets forth the procedure for determining the effective and expiration dates

of PWP Project authorizations and provisions for extension of authorizations. Section Six sets forth a post-construction authorization monitoring program. Section Seven sets forth procedures for enforcing the PWP.

1.0 AUTHORITY AND PROCEDURES FOR COASTAL COMMISSION REVIEW AND APPROVAL

1.1 Public Works Plan

Coastal Act Section 30605 provides for the submittal of a plan for public works to the Coastal Commission "as an alternative to project-by-project review", and further provides that once such a plan has been certified by the Commission, "any subsequent review by the commission of a specific project contained in the certified plan shall be limited to imposing conditions consistent with Sections 30607 and 30607.1." Coastal Act Section 30606 further provides that prior to commencement of any development pursuant to Section 30605, the public agency proposing the public works project shall notify the Commission and other interested persons, organizations and governmental agencies of the impending development and provide data to show it is consistent with the certified public works plan, and that no development shall take place within 30 working days after the notice. Coastal Act Section 30607 provides that any such permit "shall be subject to reasonable terms and conditions in order to ensure that such development or action will be in accordance with the provisions of this division."

As discussed below, the Coastal Act and Commission regulations and practice provide procedures for Commission review and approval of the District PWP, concurrent review and approval of the initial Phase One project submitted to the Commission for a development permit concurrent with the submittal of the PWP, and subsequent review and approval of any other "specific project contained in the certified plan", including the remaining Phase Two project or any portion thereof. More specifically, Commission regulations (14 CCR Section 13358) provide that if a proposed project contained in a public works plan "is submitted to the Commission for a development permit concurrent with the submittal of a public works plan, the Commission shall review the project and the plan concurrently, and shall, if the project meets the requirements of the Coastal Act, approve the project as an integral component of the public works plan." The same regulation further provides that the Commission "shall require conditions, where necessary, to bring the project into conformance with the Coastal Act."

1.2 Concurrent Review and Approval of the Phase One Project,

Pursuant to the Commission's procedural regulations, the District is submitting the Phase One project contained in the PWP to the Commission for a development permit concurrent with the submittal of the PWP. As stated in the District's notice of public hearing on the draft PWP (copies of which were posted on the site and several other public places, provided to Commission staff, published in the newspaper and served on the City, owners and residents of properties within 500 feet of the site, and other interested persons, parties and agencies), the District intends to submit the PWP after receiving public comment and making any revisions and the PWP provides for development of school facilities at the site. More specifically, as described in the PWP, the initial phase of development, or Phase One project, includes buildings to house a pre-school, kindergarten, first grade and administrative offices, while the Phase Two project consists of additional classroom wings to expand the facility to a full pre-school and kindergarten through fifth grade elementary school, if, and when, enrollment warrants such expansion.

Accordingly, the District seeks authorization of a development permit for the initial Phase One project concurrently with and as an integral component of the PWP. The District understands that completion of initial Commission review, including approval or certification of the PWP and a determination that the initial Phase One project meets the requirements of the Coastal Act, with or without conditions necessary to bring the project into conformance with the Coastal Act, acts as approval of a development permit for the Phase One project contained in the PWP, subject to acceptance of such determination and any such conditions. Upon completion of such initial Commission review and approval and District acceptance of such determination and any such conditions, the District intends to adopt the PWP and obtain any other necessary approval(s), such as approval by the Court in the pending action between the District and the City of Capitola, and, upon obtaining such approval(s), intends to undertake construction of the Phase One project. Since the Field Act (Education Code Sections 17280 *et seq.*; 21 C.C.R. § 3) requires design and construction of school buildings to be supervised by the Division of the State Architect ("DSA"), and the District intends to use modular buildings constructed by a modular building manufacturer through a "piggyback" contract or public bidding, the successful modular building manufacturer will supply plans and specifications to the District either pre-approved by DSA or modified to be approved by DSA, consistent with the design specified in the public works plan.

1.3 Subsequent Review and Approval of any Portion of the Phase Two Project Contained in the PWP.

If, and when, enrollment warrants expansion of the facility after the PWP has been certified by the Commission and the District has constructed the Phase One project, the District may seek a development permit for all or any portion(s) of the Phase Two project contained in the certified PWP by providing notice of such impending development, which the District understands from Commission staff is the accepted practice for requesting further Commission review of any specific project contained in a PWP which has been certified by the Commission, to determine whether the specific project is consistent with the certified PWP, with or without conditions required to render the project consistent with the certified PWP. As detailed below, completion of such review and determination requested by such notice acts as approval of a development permit for the specific project, subject to acceptance of such determination and any such conditions.

1.4 California Environmental Quality Act (CEQA)

The Coastal Commission's regulatory program involving preparation, approval and certification of local coastal programs under Sections 30500 through 30522 of the Coastal Act, and the Commission's regulatory program dealing with the consideration and granting of coastal development permits under the Coastal Act, which include review and approval of public works plans and consistent projects under Section 30605 of the Coastal Act, have been certified by the Secretary of Resources as being the functional equivalent of the environmental review required by the California Environmental Quality Act ("CEQA"). Accordingly, a public works plan including the detailed environmental information required by the Commission may be submitted in lieu of an environmental impact report or other CEQA documentation, although the Commission can and does utilize any environmental information developed by the public agency submitting the public works plan. The Commission's approval of a public works plan and any project contained therein as consistent with the public works plan, with or without conditions necessary to make the project consistent with the public works plan, constitutes a determination that the project will not have significant environmental effects, consistent with CEQA.

2.0 DEFINITIONS, GENERAL PROVISIONS AND SUPPLEMENTAL REPORTS FOR ANY SPECIFIC PROJECT

CONTAINED IN THE CERTIFIED PWP WHICH IS NOT INCLUDED IN THE PHASE ONE PROJECT.

This section provides definitions of terms, sets forth the role of the District Superintendent, and defines the review procedures for any specific project contained in the certified PWP which is not included in the Phase One project.

2.1 Definitions

- "California Coastal Commission" and "Coastal Commission" and "Commission" mean the California Coastal Commission.
- "Contract Documents" means any plans, specifications, general and specific conditions, agreement and other documents prepared by or for the District for the construction of the Phase Two project or any portion thereof contained in the PWP.
- "Development" means the placement or erection of any solid material or structure; grading, removing or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, change in the intensity of use of water; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility.
- "District" means the Soquel Union Elementary School District.
- "District Board" or "Board," means the governing Board of Trustees of the District.
- "District Superintendent" or "Superintendent" means the Soquel Union Elementary School District Superintendent or her/his designee.
- "Executive Director of the Commission" or "Executive Director" means the Executive Director of the California Coastal Commission or his/her designee.
- "Notice of Impending Development" means a notice of the District's intention to construct the Phase Two project or any portion thereof contained in the PWP, which notice shall be provided by the Superintendent to the Coastal Commission and to interested persons, organizations, and governmental agencies, and which also shall be posted conspicuously at the same locations within the District's boundaries that the District's official notices are posted and at the site of the impending construction of a Project of the PWP.
- "Project" means the Phase Two project or any portion thereof contained in the PWP.

- "Project Report" means the Coastal Commission staff report on the PWP, including the environmental analysis of the District's application for certification of its PWP and any supplements thereto and containing all of the information specified in subsection 2.4.4 of these Implementing Procedures.
- "Public works" means all Development by the Soquel Union Elementary School District including (a) production, storage, transmission, and recovery facilities for water, sewerage, telephone, and other similar utilities owned or operated by any public agency or by any utility subject to the jurisdiction of the Public Utilities Commission, except for energy facilities; (b) all public transportation facilities, including public parking lots and structures, mass transit facilities, and other related facilities and (c) all publicly financed recreational facilities.

2.2 The District Superintendent

The District Superintendent shall be the responsible person for contact regarding inquiries concerning PWP authorizations and implementation. The District Superintendent shall be the custodian of the PWP and any related Project Reports, for which the entire record will be maintained and available for public review at the District Offices located at 620 Monterey Street, Capitola CA, 95010.

2.3 Project Authorization Required

Neither the Phase One project nor the Phase Two project contained in the PWP nor any portion thereof shall be undertaken without prior authorization in accordance with these procedures. Any Development by the District on the Opal Cliffs Site not contained in the PWP requires coastal development permit authorization by the Coastal Commission, and may require amendment to the PWP.

2.4 Procedures for Project Review and Authorization

2.4.1 Coordination with the Coastal Commission.

The District shall consult with the Executive Director as early as possible regarding proposed Project(s) with the object of identifying issues of possible concern to the Coastal Commission.

(a) Any Project Descriptions not contained in the PWP shall be provided to the Executive Director prior to or concurrently with submittal thereof to the District Board.

(b) The District shall provide the Executive Director with any and all additional public notices and documentation circulated to the public pursuant to the Board's required project review process, including the process for that portion of the public which expressly requested to be noticed, not previously provided to the Executive Director.

(c) All required coordination/consultation with the Executive Director shall be initiated through and facilitated by planning staff of the Coastal Commission's Central Coast District Office, 725 Front Street , Suite 300, Santa Cruz , CA 95020.

2.4.2 Board Authorization of Projects

The District Board shall, using its discretionary authority, review and consider for approval each proposed Project pursued under the PWP based upon information contained in a Project Report and any other information in the record provided that the proposed Project, as modified by any conditions and/or mitigation measures incorporated as part of the Project, is contained in and consistent with the certified PWP.

2.4.3 Preparation of PWP Project Reports

The District Superintendent shall review all proposed projects pursued under the PWP and shall prepare a Project Report for each Project.

2.4.4 Contents of a PWP Project Report

A Project Report shall include information specific to the Project that the District Board deems necessary to satisfy the standards for the PWP. A Project Report shall include:

(a) A description of the proposed Project(s), including a narrative description of the size, kind, intensity and location of improvements, including supporting site plans and elevations thereof, provided that the description may be incorporated by reference to the extent contained in the PWP (e.g., the entire Phase Two project contained in the PWP);

(b) Any and all additional technical reports associated with the Project(s) (i.e., biological reports, geotechnical reports, traffic analyses, etc.), including all supplemental reports and plans required by the PWP, to the extent not previously included with the PWP;

(c) The results of consultation with parties interested in, with jurisdiction over, and/or affected by the Project(s), including consultations with concerned public entities and agencies, to the extent not previously included with the PWP.

(d) All implementing mechanisms associated with the Project(s) (including but not limited to condition monitoring reports, legal documents, etc.), to the extent not previously included with the PWP;

(f) All correspondence received regarding the Project(s), to the extent not previously included with the PWP;

(g) Identification of the person responsible for ensuring that the proposed Project(s) shall be constructed in accordance with authorized specifications and that all terms and conditions of the authorization are met (Project Manager).

2.4.5 Distribution of Project Reports to the Board

The Superintendent shall submit a Project Report as well as an action recommendation to the District Board for each proposed Project pursued under the PWP.

2.4.6 Board Authorization of PWP Revisions

The Board may authorize a revision to the PWP based on information contained in a Project Report and any other information in the record provided that:

(a) The proposed Project has been reviewed in compliance with the California Coastal Act, and found to be consistent with the Coastal Act and City of Capitola Local Coastal Plan, and all conditions of approval have been incorporated as part of the Project; and,

(b) The Board finds that the proposed revision advances the specific Project objectives of the PWP;

(d) The proposed Project, as modified by any conditions and/or mitigation measures incorporated as part of the Project, is contained in and consistent with the certified PWP.

2.4.7 Coastal Commission Jurisdiction

After certification of the PWP, the Coastal Commission will continue to retain permit jurisdiction over Development on the Opal Cliffs Site, consistent with the provisions of California Public Resources Code sections 30605 and 30606. Procedures for Coastal Commission review and approval of the District PWP concurrent review and approval of the initial Phase One project submitted to the Commission for a development permit concurrent with the submittal of the PWP, and subsequent review and approval of any other "specific project contained in the certified plan", including the remaining Phase Two project or any portion thereof are described generally in Section 1. Coastal Commission review of any portion

of the Phase Two project contained in the PWP is further described in Section 3 and 4 of these Implementing Procedures.

3.0 NOTICE OF IMPENDING DEVELOPMENT

This section identifies procedures to notify interested parties of any impending development on the Opal Cliffs Site not included in the Phase One project.

3.1 Notice of Impending Development

After approval by the Board of any Contract Documents for any specific development project on the Opal Cliffs Site not included in the Phase One project contained in the PWP, and at least 30 working days prior to issuing a notice to proceed to the contractor for such construction, the Superintendent shall send via first-class mail a written Notice of Impending Development to the following persons, parties and agencies informing them of the Board's decision:

(a) The Executive Director;

(b) Owners of record of each property within 100 feet (excluding road rights-of-way) of the proposed Project(s);

(c) Persons residing on properties located within 100 feet (excluding road rights-of-way) of the proposed Project(s);

(d) All other persons, parties, and agencies who have requested in writing to receive such notice, either for any Project that is the subject of the notice or for all PWP Projects;

(e) All parties consulted with pursuant to Section 2.4.4 (c) above; and

(f) Persons, parties, and agencies that are known by the District to be interested in any specific Project that is the subject of the notice (e.g., persons, parties, and agencies that submitted testimony or other comments during the public review process for the PWP and provided contact information for the purpose of such further notice).

3.2 Contents of Notice of Impending Development.

The Notice of Impending Development shall be clearly titled as such and shall, at a minimum, include the following information regarding the PWP authorization:

(a) The description of the proposed Project(s), including a narrative description of the size, kind, intensity and location of each proposed development as well as identifying the

custodian of the public record, provided that the description may be incorporated by reference to the extent contained in the PWP (*e.g.*, the entire Phase Two project contained in the PWP);

(b) The Board's approval of any Contract Documents for the Project(s);

(c) The anticipated date of commencement of construction of the Project(s);

(d) The District contact person(s) or designated Project Manager and her/his contact information.

3.2.1 Posting Requirements for Notice of Impending Development

The Superintendent shall post the Notice of Impending Development in conspicuous locations at the proposed Project site no later than the date that the Notice of Impending Development is sent pursuant to Section 3.1, and at least 30 working days prior to the commencement of construction. The Notices shall comply with the following requirements:

(a) Notices that are posted shall be clearly visible and printed with black text/graphics on a brightly hued background (e.g., golden-rod yellow) using card-stock weight (at the least) paper. Notices shall be laminated or otherwise weatherproofed so as to be legible at all times, and shall be at least 8½ inches by 11 inches in size, and no greater than 4 feet by 8 feet in size.

(b) Notices shall be posted against a solid background at least as large as the notice itself (e.g., posting a card-stock notice on an 8½ inch by 11-inch piece of plywood attached to a stake) or shall be printed onto an integral solid background, and shall be posted at a readable height (i.e., approximately three to six feet).

(c) Notices shall be posted at locations on the perimeter (and/or within the perimeter as appropriate) of the proposed Project site where the site intersects public use areas (streets, paths, parking lots, etc.). Notices shall also be posted at the District office.

(d) Notices that do not meet the criteria listed above, that otherwise become illegible, or that otherwise are not visible to pedestrians or disappear (for whatever reason) shall be replaced immediately. All notices shall remain posted until the effective date of authorized commencement of construction (in accordance with Section 3.2 (c)).

3.2.2 Supporting Information for the Notice of Impending Development

Supporting information sufficient to allow interested parties to determine whether the proposed Project is consistent with the certified PWP shall accompany the Notice of Impending

Development mailed to the Executive Director and to persons, parties, and/or agencies requesting such information. At a minimum, the supporting information shall include:

(a) The Project Report, updated to include any changes or additions made in the course of review by the District; provided, that copies of lengthy and/or oversized studies, reports, and technical materials included as part of the Project Report shall be provided only to the Executive Director and to interested persons, parties, and agencies that specifically request these materials;

(b) Any final authorization documents from the Board (e.g., resolutions, minute orders, certifications, etc.) not included in the Project Report;

(c) A separate document that identifies all Project conditions and explains how compliance will be achieved and measured for each;

(d) Copies of all correspondence received regarding the proposed PWP Project; and

(e) For the Executive Director only:

(1) A mailing list with names and addresses for each of the persons, parties, and agencies listed in Section 3.1 above, where the list is labeled and organized by each of the categories listed;

(2) Evidence that the Notice of Impending Development has been posted pursuant to the parameters of Subsection 3.2.1, above, (e.g., a site plan with the notice locations noted or photographs of the notice locations attached).

4.0 COASTAL COMMISSION REVIEW OF PHASE TWO PROJECT CONTAINED IN PWP OR ANY PORTION THEREOF.

The Coastal Commission shall review Project(s) authorized for construction by the District for consistency with the PWP in accordance with the provisions of Sections 30605 and 30606 of the Coastal Act.

4.1 Coastal Development Permit Review Following Certification of Public Works Plan.

Consistent with the provisions of 14 CCR sections 13357(a)(5), following Commission certification of the PWP, any review of a coastal development permit application for a Project contained in the PWP shall be to determine the conformity of the Project with the certified

PWP, as provided in Sections 13358 and 13359. Further, consistent with Section 13359(a), the District Superintendent shall submit notice and information regarding the proposed Project pursuant to the requirements of Public Resources Code Section 30606. Such notice shall be reviewed and deemed filed by the Executive Director of the Commission only if it complies with the provisions of 14 CCR sections 13353 and 13354, and only if the Executive Director determines that the information supplied is sufficient to allow the Commission to determine whether the proposed project is consistent with the certified public works plan.

4.2 Filing the Notice of Impending Development

Consistent with 14 CCR sections 13553-13554, 13357(a)(5), and13359(a), unless there are unusual circumstances, within five working days of receipt of the Notice of Impending Development and all applicable supporting information (as described in Subsection 3.2.2, above) for construction of the Project(s), the Executive Director shall review the submittal and shall determine whether additional information is necessary to determine if the proposed Project(s) is consistent with the PWP, and if additional information is deemed necessary, shall request such information from the Superintendent.

(a) The Notice of Impending Development shall only be deemed filed if the Executive Director determines that the information supplied is consistent with the information requirements of 14 CCR sections 13357(a)(5), 13359(a) and 13353 and is sufficient to allow the Commission to determine whether the proposed Project is consistent with the certified PWP.

(b) If the Executive Director has requested additional supporting information needed to determine consistency with the PWP then the Notice shall be deemed filed when the Executive Director determines that all necessary supporting information has been received.

4.3 Coastal Commission Hearing Deadline

Consistent with 14 CCR sections 13357(a)(5) and 13359, the thirtieth working day following the day the Notice of Impending Development is deemed filed is the Hearing Deadline. The Hearing Deadline may be extended if, on or before the Hearing Deadline, the Superintendent waives the District's right to a hearing within thirty working days, and agrees to an extension to a date certain, no more than three months from the Hearing Deadline, to allow for Commission review of the proposed Project(s) at a later hearing.

4.4 Coastal Commission Review and Determination of Consistency with PWP

The Executive Director shall report in writing to the Commission regarding any pending proposed Project(s). The Coastal Commission shall review the proposed Project(s) at a scheduled public hearing prior to the Hearing Deadline.

The Executive Director's report to the Commission shall include a description sufficient to allow the Commission to understand the location, nature, and extent of the Project(s), and a recommendation regarding the consistency of the proposed Project(s) with the certified PWP. On or before the Hearing Deadline the Commission shall make one of the following determinations:

1. Determine that the proposed Project(s) is/are consistent with the certified PWP, or

2. Determine that conditions are required to render the proposed Project(s) consistent with the certified PWP, including identification of the required conditions.

Following the Commission's determination, the Executive Director shall inform the Superintendent of the Commission's determination and shall forward any conditions associated with it. If the Commission has identified conditions required to render the Project(s) consistent with the PWP, construction shall not be undertaken until the conditions have been incorporated into the Project(s).

Coastal Commission review of a proposed Project(s) shall be deemed complete on the date of a Commission determination that the Project(s) is/are consistent with the PWP with or without conditions. Upon completion of Commission review, the District may undertake construction of the Project(s); provided, that any conditions imposed by the Commission to render the Project(s) consistent with the PWP have been incorporated into the Project(s).

5.0 EFFECTIVE DATE AND EXPIRATION DATE OF PWP AUTHORIZATIONS; EXTENSION OF AUTHORIZATIONS

This section sets forth provisions for the effective date of permits, authorizations and extensions thereof.

5.1 Effective Date of PWP Project Authorizations

Unless expressly stated otherwise in the approval documents, the effective date of a Project authorization shall be the date the Coastal Commission's review of the proposed Project is deemed complete pursuant to Section 3.5.

5.2 Expiration Date of Project Authorizations

Unless expressly stated otherwise in the approval documents, the expiration date of the authorization for the Phase One project, the Phase Two project or any portion thereof contained in this PWP shall be five years following its effective date. Thereafter, construction of the Project may not commence unless the authorization has been extended as provided herein, or a new authorization and review by the Commission has been completed in accordance with PWP provisions for initial review of a proposed Project.

5.3 Extension of Project Authorizations

The expiration date of the authorization for the Phase One project, the Phase Two project or any portion thereof may be extended for a period not to exceed two years if the Superintendent determines that there are no changed circumstances that may affect the Project's consistency with the PWP. In such a case, before the expiration of the authorization, the Superintendent shall submit to the Executive Director a notice of intent to extend such authorization together with supporting information sufficient for the Executive Director to determine whether there are changed circumstances that may affect the Project's consistency with the PWP including, at a minimum, any modified and/or new materials comprising the supporting information described in Subsection 3.2.2 above. The submittal shall stay the expiration of the authorization and the start of construction.

If the Executive Director determines that the extension is consistent with the PWP, the District shall post notice of the determination at the Project site consistent with the posting requirements in Subsection 3.2.1, above, and the Executive Director shall mail the notice to all persons, parties, and agencies on the original mailing list for the Project and to all persons, parties, and agencies known by the Executive Director to be interested in the proposed extension. The notice shall include a summary of the extension approval process and information on contacting the District and the Coastal Commission concerning the proposed extension. If no written objection is received at the Commission office within 10 working days of posting and mailing notice, the determination of consistency shall be conclusive.

If the Executive Director determines that, due to changed circumstances, the Project may not be consistent with the PWP, the proposed extension shall be reported to the Commission at a

noticed public hearing. The report shall include any pertinent changes in circumstances relating to the proposed extension. If three or more commissioners object to the extension on grounds the Project may not be consistent with the PWP, the matter shall be set for hearing in the same manner as a new Notice of Impending Development, including posting of notice by the District. The Superintendent shall provide the Executive Director with supporting information in the manner prescribed for new proposed Projects.

Successive extensions of an authorization may not exceed one year each.

6.0 MONITORING PWP PROJECTS

The Board shall be responsible for ensuring that all terms, conditions, and mitigations associated with an authorized Project, including but not limited to Coastal Development Permit conditions of approval, are fulfilled. Project managers and other District personnel assigned responsibility to implement and/or monitor authorized Projects shall contact the Superintendent annually by the end of each calendar year to provide information regarding compliance with the terms and conditions of authorization for that year and continuing obligations from authorizations in previous years. The Superintendent shall verify that all terms and conditions have been timely fulfilled and shall update each Project's list of conditions and mitigations with compliance information on at least a yearly basis. The Superintendent shall also review as-built Project plans and verify that the construction is consistent with them, including affixing written documentation to that effect to the as-built plans. The Superintendent shall maintain the updated copies of the required approval documents and shall maintain the verified as-built plans, which shall be made available for public review.

7.0 ENFORCEMENT

In addition to all other available remedies, the provisions of the PWP and the Coastal Act shall be enforceable pursuant to Chapter 9 of California Public Resources Code Division 20. Any person who performs or undertakes Development on the District property that is (a) in violation of the PWP, (b) inconsistent with any pre-PWP certification Coastal Commission authorization (including coastal development permit approval), or (c) inconsistent with any PWP authorization may, in addition to any other penalties or remedies, be civilly liable in accordance with the provisions of Public Resources Code Sections 30820, 30821.6 and 30822.

The Board shall ensure that Development is consistent with the PWP and with the terms and conditions of authorizations pursuant to the PWP. The Superintendent shall investigate in a reasonable time allegations regarding Development being undertaken inconsistent with the

provisions of the PWP or PWP authorizations, and shall attempt to resolve any such inconsistencies discovered. The Executive Director or Coastal Commission may also enforce the terms of the PWP and the Coastal Act.

LOZANO SMITH
20 RAGSDALE DRIVE, SUITE 201, MONTEREY, CA 93940-5758
TEL 831-646-1501 FAX 831-646-1801

FILED
APR 14 2003
BARBARA J. FOX, CLERK
BY LILY HEREDIA
DEPUTY, SANTA CRUZ COUNTY

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SANTA CRUZ

SOQUEL UNION SCHOOL DISTRICT, Plaintiff, v. CITY OF CAPITOLA and DOES 1-50, Defendants.	CASE NO. CV 141712 CONDITIONAL JUDGMENT OF EJECTMENT
and Related Cross-Action.	Action: Filed: September 12, 2001 Judge: Hon. Samuel S. Stevens Trial: October 15, 2002, November 7, 2002 and December 2, 2002

This matter came on regularly for trial commencing on October 15, 2002, in Department 7 of the above-entitled Court, the Honorable Samuel S. Stevens, Judge of the Superior Court, presiding. Plaintiff and cross-defendant Soquel Union School District (hereinafter "District" or "School District", also known as "Soquel Union Elementary School District" and "Soquel Elementary School District") appeared through its counsel of record Judd Jordan, Esq. of Lozano Smith. Defendant and cross-complainant City of Capitola appeared through its counsel of record George Kovacevich, Esq. of Atchison, Barisone & Candotti. Pursuant to the Court's September 13, 2002 pre-trial ruling on the School District's motion for a separate court trial of certain contract interpretation and statute of limitation issues (the transcript of the hearing of which is attached as Exhibit B to the School District's

motion in limine No. 3), and as a result of pretrial discussions, the Court conducted an evidentiary hearing commencing on October 15, 2002 to determine whether any extrinsic evidence offered by the City was admissible: (1) to show that the phrase "a public school building" in paragraph 9 of the 1986 amendment was reasonably subject to any meaning other than as defined in Education Code Section 17283; and (2) when the District would be permitted to give the one year termination notice also contained in paragraph 9. During the hearing, the City voluntarily dismissed its cross-complaint except that portion seeking declaratory relief as to the rights and duties of the parties under paragraphs 10 and 11 of the 1986 amendment to the lease, and the next trial day out of an abundance of caution the District requested leave to amend its complaint to seek declaratory relief as to the rights and duties of the parties under paragraph 9 if and to the extent necessary to seek such declaratory relief, although in view of the requests of the parties for such relief the Court deemed such formal amendment unnecessary. On November 1, 2002, the Court filed its Decision on Bifurcated Issues, finding that the phrase "a public school building" in paragraph 9 of the 1986 amendment meant a public "school building" as defined in Education Code Section 17283 to include a broad scope of school buildings and uses, not just a traditional elementary school, and that a term of reasonableness would be implied within which the District would be permitted to give the one year termination notice also contained in paragraph 9.

Upon request for a further decision of the Court interpreting the meaning of the word "requires" in paragraph 9 of the 1986 amendment, the Court conducted a further evidentiary hearing on November 7, 2002 on that issue. On November 12, 2002, the Court filed its Further Decision on Bifurcated Issues, finding that the word "requires" was not intended to limit the District in any manner (such as having to show that the District had no other alternative site or choice), but was intended to permit the District to give notice of termination to the City when the District, employing statutorily mandated procedures, determined to use the subject property for a public school building.

Following rulings on the parties' motions in limine, the City and the District agreed to waive a jury on all remaining issues, and on December 2, 2002, the Court commenced a trial of the remaining issues except any issue of damages. At the end of the last day of trial, the Court ordered the parties to file closing briefs, upon which such issues would be deemed taken under submission. On January 23,

LOZANO SMITH
20 RAGSDALE DRIVE, SUITE 201, MONTEREY, CA 93940-5758
TEL 831-646-1501 FAX 831-646-1801

2003, having considered the evidence and arguments offered by the parties, the Court issued its Memorandum of Decision incorporating its earlier November 1, 2002 and November 12, 2002 decisions and making further decisions to be incorporated in a judgment, including the requested declaration of the rights and obligations of the parties.

Pursuant to the foregoing proceedings, and good cause appearing therefor,

IT IS ORDERED, ADJUDGED AND DECREED:

1. That the word "requires" in paragraph 9 was not intended to limit the District in any manner (such as having to show that the District had no other alternative site or choice), but was intended to permit the District to give notice of termination to the City when the District, employing statutorily mandated procedures, determined to build a public school building on the subject property;

2. That the phrase "a public school building" in paragraph 9 of the 1986 amendment to the 1982 lease means a public "school building" as defined in Education Code Section 17283;

3. That a term of reasonableness was implied within which the District was permitted to give the one year termination notice also contained in paragraph 9;

4. That under all of the facts and circumstances of this case, the July 26, 2000 notice of termination to use the subject property for a public school building was reasonable, and the lease was terminated effective July 26, 2001, provided that, given the spirit of cooperation and commitment to maximizing joint use potential that existed in 1986, the District was and is not entitled to possession during the original term of the lease, even after the passage of the one year notice of termination, until it is ready to actually commence use of the property, with all the necessary approvals, whether that be the movement of portable buildings on the property or the commencement of grading for a new school;

5. That the District knew about the sublease with Tradewinds since no later than 1993 and thereby waived any right to assert the sublease as a breach of the lease, which under the facts of this particular case ~~does not appear to be~~ is not a material breach in any case;

6. That when the City is required to relinquish possession of the property to the District, the City must do so free of any encumbrances it has caused to be placed on the property, including the Tradewinds sublease, and any cost to be incurred to terminate the sublease shall be borne by the City;

LOZANO SMITH
20 RAGSDALE DRIVE, SUITE 201, MONTEREY, CA 93940-5758
TEL 831-646-1501 FAX 831-646-1801

7. That the District is entitled to and is hereby given a judgment of ejectment, subject to the conditions set forth above, including but not limited to the right of the City to remain in possession during the original term of the lease until the District is ready to actually commence use of the property, with all the necessary approvals, whether that be the movement of portable buildings on the property or the commencement of grading for a new school; and

8. That the Court shall retain jurisdiction for the limited purpose of determining when the District is entitled to possession of the property, including determination of any disputes about access reasonably necessary to obtain necessary approvals or financing.

9. That the District is the prevailing party entitled to an award of costs in the amount of

SSS $ To be determined

DATED: 4-13-03.

SAMUEL S. STEVENS

SAMUEL S. STEVENS
Judge of the Superior Court

Respectfully presented by:

LOZANO SMITH

By _____
Judd Jordan

Attorneys for Plaintiff and Cross-Defendant
Soquel Union School District

Approved as to Form:

Atchison, Barisone & Candotti

By _____
George Kovacevich

Attorneys for Defendant and Cross-Complainant
City of Capitola

LOZANO SMITH
20 RAGSDALE DRIVE, SUITE 201, MONTEREY, CA 93940-5758
TEL 831-646-1501 FAX 831-646-1801

SERVICE LIST

Anthony P. Condotti Barbara H. Choi Atchison, Barisone & Condotti 333 Church Street Santa Cruz, CA 95060 Phone: (831) 423-8383 Fax: (831) 423-9401	Attorneys for Defendant and Cross-Complainant City of Capitola

Lozano Smith
[illegible] DRIVE, SUITE 201, CA [illegible]
TEL 831-646-1801 FAX [illegible]

PROOF OF SERVICE

The undersigned declares:

1. My name is Barbara Munro.

2. My business address is Lozano Smith, 20 Ragsdale Drive, Suite 201, Monterey, CA 93940-5758.

3. I am employed in the County of Monterey, State of California, where the mailing described herein occurred.

4. I am over the age of 18 years and not a party to the cause herein.

5. On April 18, 2003, for each person whose name and address appears on the attached service list, I personally sealed a copy of the following document in an envelope addressed to the name and address for such person as shown on the attached service list and deposited the envelope in the mail (in a United States Postal Service daily collection box at my business address) with the postage thereon fully prepaid:

NOTICE OF ENTRY OF JUDGMENT

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 18, 2003, at Monterey, California.

Barbara Munro

Lozano Smith 20 RAGSDALE DRIVE, SUITE 201, CA 93940-5758
TEL 831-646-1501 FAX 831-646-1801

SERVICE LIST

Anthony P. Condotti
Barbara H. Choi
Atchison, Barisone & Condotti
333 Church Street
Santa Cruz, CA 95060
Phone: (831) 423-8383
Fax: (831) 423-9401

Attorneys for Defendant and Cross-Complainant City of Capitola

::ODMA\WORLDOX\K:\MON_DOCS\00328\006\PRF\M0018596.WPD

Lozano Smith 26 Lockdale Drive, Suite 201, CA 93940-5718
TEL 831-646-1301 FAX 831-646-1801

APPENDIX A

LEASE

This Lease Agreement, entered into on this 26th day of March, 1982, by and between the Board of Trustees of the Soquel Union School District of Santa Cruz County, hereinafter referred to as "the District," and the City of Capitola, hereinafter referred to as "the City,"

WITNESSETH

IN CONSIDERATION of the mutual promises and conditions contained herein and in the parties' Agreement of March 26, 1982, of which this is an attachment to and a part thereof, it is mutually agreed as follows:

1. The District hereby grants to the City and the City hereby accepts the use and occupancy of that portion of the Opal Cliffs school site, APN 34-101-08, which is located on 47th Avenue in the City of Capitola and is more particularly described in Exhibit A attached hereto and by this reference incorporated herein for the exclusive purpose of establishing, developing, and maintaining a public, recreational park. No other use may be made of the premises without the prior written approval of the District.

2. The City agrees to develop the premises, which are the subject of this Agreement, for recreational purposes. The City shall have the right to enter upon and initiate the development of the aforesaid facilities upon the date of mutual execution of this Agreement by the parties hereto. All fixtures and equipment installed pursuant to said recreational purposes shall be maintained by the City in a state of good and safe repair. The City shall also maintain said premises in a neat and clean condition.

3. The City agrees to permit the District to use the park facilities for school purposes. Scheduling of use of the premises shall be administered by the City of Capitola-Soquel School District Community Activities Joint Powers Authority.

4. The term of this Agreement shall be for fifty years, commencing on March 26, 1982, and continuing through and including March 25, 2032.

5. The City agrees to have installed all necessary utilities attendant to the development and maintenance of the facilities and to pay the total cost of such utility services and their installation.

6. The City may install on the premises such fixtures and equipment, including an underground sprinkler system, as it may see fit, and not being in default of this Agreement, may remove the same from the site at any time during the

term of this Agreement, provided, however, that in the installation and removal of such equipment and fixtures, the work shall be done in a careful, workmanlike manner and without injury to the structural strength of any permanent improvements that may be installed thereon, and, following said removal, the premises are returned to the condition as existed on the date that this Agreement was executed.

7. City shall hold harmless and indemnify the District, its officers, agents and employees from every claim or demand arising as a result of injury or death to any persons, or damage to any property, including District's property, arising from any act, omission, or negligence of the City, its officers, agents, employees, contractors, servants, or licensees or arising out of or in any way connected with City's use and occupancy of the property which is the subject of this Agreement, including permitted use made by District as provided in paragraph 3 herein, but excepting injury, death, or damage arising from the sole negligence or wilful misconduct of District.

City, at its own expense and risk, shall defend any legal proceedings that may be brought against District, its officers, agents, and/or employees on any claim or demand arising as a result of injury or death to any persons, or damage to any property, including District's property, arising from any act, omission, or negligence of the City, its officers, agents, employees, contractors, servants or licensees or arising out of or in any way connected with City's use and occupancy of the property which is the subject of this Agreement, including permitted use made by District as provided in paragraph 3 herein, but excepting injury, death, or damage arising from the sole negligence or wilful misconduct of District.

8. During the term of this Agreement, City shall, at its own expense, procure and maintain in full force a policy or policies of comprehensive public liability coverage of the leased premises and workman's compensation insurance. Said liability insurance shall specifically insure performance by City of its indemnity agreement set forth herein. Said liability insurance, including property damage, shall be written by one or more responsible insurance companies licensed to do business in the State of California. The City may, at its option, provide said liability insurance by extending the coverage of its presently-existing insurance policies.

superseded by 11-25-86 amendment sec 1.27.

9. Regardless of any other term or condition of this Agreement, the District retains and reserves the right to terminate this Agreement, at any time, provided that it serve upon the City written notice of its intention to so terminate on area "X" in Exhibit A at least two years in advance of said termination, and on area "Y" in Exhibit A at least one year in advance of said termination. In the event of termination of this lease, the District shall have the right to retain all buildings, equipment, and fixtures

10

that it deems appropriate for school use on the terms and conditions provided in paragraph 10 herein. The City shall remove all other buildings, equipment, and fixtures from the property and surrender the premises to District in the same condition as when received.

10. In the event District terminates this Agreement pursuant to paragraph 9, the District shall fairly compensate the City for all buildings, equipment, and fixtures that it retains. Compensation will be based upon the current replacement value of the structure or improvement, less depreciation. The amount of the depreciation will be determined by using straight-line depreciation over the useful life of the structure or improvement.

11. District further reserves the right to construct a school building on the premises. In such event, District will notify City of its intention to construct the school building at least twelve months prior to the commencement of said construction. At that time the parties may either terminate this Lease Agreement or negotiate a modification thereof to permit the remaining unused open-space areas of the premises to be used by the City and District for public park and recreational purposes.

12. In the event that the premises which are the subject of this Agreement are ever to be offered for sale by the District during the period when this Agreement is in effect, the City is hereby given the first right to purchase said property at either the price that is tentatively accepted or the minimum price set by the District, whichever District prefers.

13. City shall not assign, sublet, or transfer its interest in this Agreement or any rights thereunder nor shall this Agreement be assignable or transferable by operation of law or otherwise without the prior written consent of District.

14. This Agreement shall in every respect be binding upon the parties hereto and their respective successors and assigns.

15. Any and all notices and demands by or from the District to the City or the City to the District shall be in writing. They shall be served either personally or by registered mail. If served personally, service shall be conclusively deemed made at time of service. If served by registered mail, service shall be conclusively deemed made twenty-four hours after the deposit thereof in the United States mail, postage prepaid, addressed to the party to whom such notice or demand is to be given, as hereinafter provided, and the issuance of the registry receipt thereof to the addressee.

Any notice to the District may be given unto it at:

620 Monterey Avenue
Capitola, California 95010

Any notice to the City may be given unto it at:

420 Capitola Avenue
Capitola, California 95010

16. This Lease Agreement supercedes all prior leases and Agreements between the City and the District covering this property.

IN WITNESS WHEREOF, the parties hereto or their duly authorized representatives have executed this Agreement the day and year first above written.

Boquel Union School District

City of Capitola

APPROVED AS TO FORM:

Deborah Hopkins, Assistant
County Counsel

12

AMENDMENT TO APPENDIX A, ITEM 9, LEASE AGREEMENT DATED MARCH 26, 1982, BY AND BETWEEN THE BOARD OF TRUSTEES OF SOQUEL UNION SCHOOL DISTRICT OF SANTA CRUZ COUNTY AND THE CITY OF CAPITOLA

9. Regardless of any other term or condition of this Agreement, the District retains and reserves the right to terminate this Agreement, at any time, provided that it serve upon the City written notice of its intention to so terminate on area "X" in Exhibit A at least two years in advance of said termination, except that area of land upon which the Community Center will be located within area "X" at least fifteen years in advance of said termination; and on area "Y" in Exhibit A at least one year in advance of said termination. In the event of termination of this lease, the District shall have the right to retain all buildings, equipment, and fixtures that it deems appropriate for school use on the terms and conditions provided in Paragraph 10 herein. The City shall remove all other buildings, equipment, and fixtures from the property and surrender the premises to District in the same condition as wehn received.

IN WITNESS WHEREOF, the parties hereto or their duly authorized representatives have executed this agreement this 8th day of January, 1985.

Richard L. Patterson
Soquel Union School District

Michael [illegible]
City of Capitola
By Its Mayor

This instrument was repealed by the 11-25-86 Amendment: Sec. p. 27

Exhibit A 3535

Resolution No. 2158

Amendment to Lease Agreement Dated March 26, 1982
Between the Board of Trustees of the Soquel
Union School District of Santa Cruz County
and the City of Capitola

Paragraphs 9, 10, 11, 12 and the amendment to item 9 dated January 8, 1985 are deleted and replaced as follows:

9. The District reserves the right to terminate this lease by giving the City written notice twelve months in advance of termination that it requires the site for a public school building. As an alternative to termination, the City and the District may agree to a modification of this lease to permit the remaining unused open-space areas of the premises to be used by the City and the District for public park and recreational purposes.

10. In the event of termination of this lease, the District shall have the right to retain all buildings, equipment and fixtures that it deems appropriate for school use on the terms and conditions provided in paragraph 11 herein. The City shall remove all other buildings, equipment and fixtures from the property and surrender the premises to the District in the same condition as when received.

11. In the event District terminates this Agreement pursuant to paragraph 9, District shall fairly compensate City for all buildings, equipment and fixtures that it retains. Compensation will be based upon the current replacement value of the structure or improvement, less depreciation. The amount of the depreciation will be determined using straight-line depreciation over the useful life of the structure or improvement.

12. Regardless of any other term or condition of this Agreement, the City retains the right to continue use of the Community Center facility for fifteen years after the District gives the notice provided in paragraph 9 herein.

IN WITNESS WHEREOF, the parties hereto or their duly authorized representatives have executed this agreement this 25th day of November, 1986.

Richard S. Walters
Soquel Union School District

City of Capitola

(27)