
DRAFT

ENVIRONMENTAL IMPACT REPORT

New Sanctuary for Sufism Reoriented Project

SCH No. 2010032038

Prepared for



Contra Costa County
Department of Conservation and Development
651 Pine Street, 4th Floor - North Wing
Martinez, CA 94553

March 2011

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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS.....	VII
1.0 INTRODUCTION.....	1-1
1.1 Purpose of the Draft EIR	1-1
1.2 Scope of This Draft EIR.....	1-2
1.3 Report Organization.....	1-2
1.4 Environmental Review Process for the Draft EIR.....	1-3
1.5 Incorporating by Reference	1-5
2.0 EXECUTIVE SUMMARY	2-1
2.1 Project Under Review	2-1
2.2 Summary of Impacts and Mitigation Measures.....	2-2
2.3 Potential Areas of Controversy.....	2-2
2.4 Significant Unavoidable impacts.....	2-2
2.5 Alternatives.....	2-3
2.6 Summary of Impacts	2-3
3.0 PROJECT DESCRIPTION	3-1
3.1 Location.....	3-2
3.2 Background	3-2
3.3 Site Characteristics.....	3-4
3.4 Project Components	3-5
3.5 Project Objectives	3-14
3.6 Intended Uses of This EIR.....	3-15
4.0 SETTING, IMPACTS, AND MITIGATION MEASURES.....	4-1
4.1 Aesthetics.....	4.1-1
4.2 Air Quality	4.2-1
4.3 Biological Resources	4.3-1
4.4 Cultural Resources	4.4-1
4.5 Geology and Soils.....	4.5-1
4.6 Greenhouse Gas Emissions and Energy	4.6-1
4.7 Hazards and Hazardous Materials	4.7-1
4.8 Hydrology and Water Quality	4.8-1
4.9 Land Use and Planning.....	4.9-1
4.10 Noise	4.10-1

4.11	Population and Housing.....	4.11-1
4.12	Public Services.....	4.12-1
4.13	Traffic and Circulation.....	4.13-1
4.14	Utilities and Service Systems	4.14-1
5.0	ALTERNATIVES	5-1
5.1	Background	5-1
5.2	Screening of Alternatives.....	5-2
5.3	Alternatives Selected for Further Analysis.....	5-3
5.4	Alternatives Rejected for Further Analysis	5-7
5.5	Analysis of Selected Alternatives	5-11
6.0	CUMULATIVE IMPACTS.....	6-1
6.1	Regulations and Standards	6-1
6.2	Analysis of Cumulative Impacts	6-2
7.0	CEQA REQUIRED DISCUSSIONS	7-1
7.1	Effects Found To Be Not Significant.....	7-1
7.2	Significant Unavoidable Impacts.....	7-12
7.3	Significant Irreversible Impacts.....	7-12
7.4	Growth Inducement.....	7-13
8.0	REFERENCES.....	8-1
9.0	LIST OF PREPARERS	9-1

LIST OF FIGURES

Figure 3-1	Project Location	3-17
Figure 3-2	Existing Assessor’s Parcel Numbers and Addresses.....	3-18
Figure 3-3	Site Plan: Project Variant A	3-19
Figure 3-4	Building Sections	3-20
Figure 3-5	Building Profile — East and West Elevations	3-21
Figure 3-6	Building Profile – North and South Elevations.....	3-22
Figure 3-7	Access Points.....	3-23
Figure 3-8	Site Plan: Project Variant B	3-25
Figure 3-9	Landscaping Plan: Project Variant A	3-27
Figure 3-10	Landscaping Plan: Project Variant B	3-29
Figure 3-11	Lighting Plan.....	3-31
Figure 3-12	Stormwater Control Plan	3-33
Figure 3-13	Bio Filtration/Percolation Systems	3-35
Figure 3-14	Truck Haul Route.....	3-36
Figure 4.1-1	Viewpoint Locations.....	4.1-3
Figure 4.1-2	Viewpoint 1: Existing View.....	4.1-4
Figure 4.1-3	Viewpoint 2: Existing View.....	4.1-5
Figure 4.1-4	Viewpoint 3:Existing View.....	4.1-6
Figure 4.1-5	Viewpoint 1: Existing and Simulated View.....	4.1-11
Figure 4.1-6a	Viewpoint 2: Project Variant A Existing and Simulated View	4.1-12
Figure 4.1-6b	Viewpoint 2: Project Variant B Existing and Simulated View	4.1-13
Figure 4.1-6c	Viewpoint 2: Project Variant B Existing and Simulated View; No Trees in Public Right-of-Way Area	4.1-14
Figure 4.1-7	Viewpoint 3: Existing and Simulated View.....	4.1-15
Figure 4.3-1	Existing Tree Locations.....	4.3-4
Figure 4.4-1	Existing Buildings.....	4.4-3
Figure 4.8-1	Drainage Areas	4.8-3
Figure 4.10-1	Noise Measurement Locations	4.10-3
Figure 4.10-2	Noise Measurement Results at Location A	4.10-4
Figure 4.10-3	Land Use Compatibility for Community Noise Environments	4.10-7
Figure 4.13-1	Existing Crosswalks and Sidewalks.....	4.13-8
Figure 5-1	No Project-Existing General Plan and Zoning Alternative.....	5-5
Figure 5-2	Modified Right-of-Way Plan.....	5-8

LIST OF TABLES

Table 2-1	Summary of Impacts and Mitigation Measures.....	2-4
Table 3-1	Program of Activities.....	3-6
Table 3-2	Project Variants: Key Differences.....	3-9
Table 3-3	Agency Permits and Approvals	3-15
Table 4.2-1	Major Criteria Pollutants.....	4.2-3
Table 4.2-2	Toxic Air Contaminants in the Project Area	4.2-4
Table 4.2-3	California and National Ambient Air Quality Standards	4.2-7
Table 4.2-4	Annual Number of Days Exceeding Ambient Air Quality Standards.....	4.2-9
Table 4.2-5	BAAQMD CEQA Guidelines: Air Pollutant Impact Thresholds	4.2-11
Table 4.2-6	Estimated Construction Emissions – With Best Management Practices	4.2-17
Table 4.2-7	Estimated Construction Emissions, With Mitigation	4.2-18
Table 4.3-1	Special-Status Wildlife Species Known to Occur in the Project Vicinity	4.3-6
Table 4.5-1	Active Faults in the Vicinity of the Project	4.5-2
Table 4.5-2	Modified Mercalli Intensity (MMI) Scale	4.5-4
Table 4.5-3	CBC Seismic Site Categorization and Design Coefficients.....	4.5-11
Table 4.6-1	Consistency with Applicable California Climate Change Emission Reduction Strategies	4.6-7
Table 4.8-1	Impervious Surface Area Coverage Calculations	4.8-12
Table 4.8-2	Runoff Rates by Drainage Area in Cubic Feet Per Second	4.8-12
Table 4.9-1	Consistency with Pertinent General Plan Land Use Policies	4.9-3
Table 4.9-2	Project Consistency with R-10 Zoning District	4.9-4
Table 4.10-1	Noise Measurement Results (August 12, 2009).....	4.10-5
Table 4.10-2	Typical Levels of Vibration for Construction Equipment	4.10-14
Table 4.11-1	Changes in Population and Households.....	4.11-2
Table 4.11-2	Changes in Housing Stock, Saranap — 1990 to 2000	4.11-3
Table 4.13-1	Level of Service (LOS) Criteria	4.13-4
Table 4.13-2	Existing Conditions at Project Area Intersections	4.13-5
Table 4.13-3	Existing Roadway Level of Service	4.13-7
Table 4.13-4	Existing Sanctuary Trip Generation.....	4.13-12
Table 4.13-5	Near-Term Conditions: Intersection Levels-of-Service	4.13-19
Table 4.13-6	Near-Term Conditions: Roadway Segment LOS.....	4.13-19
Table 4.13-7	Trip Generation	4.13-20
Table 4.13-8	Near-Term Plus Project Variant Traffic Intersection Operations, Peak Hour	4.13-21
Table 4.13-9	Near-Term Plus Project Variant Traffic Roadway Operations, Peak Hour	4.13-22
Table 5-1	Comparison of Impacts of the Alternatives to the Project Variants.....	5-23

Table 6-1	Operational Annual CO ₂ e Emissions	6-6
Table 6-2	Year 2030 Cumulative Conditions.....	6-12
Table 9-1	List of Preparers of the Draft EIR	9-1

APPENDICES

Appendix A	Comments on NOP and Scoping Meeting
Appendix B	An Analysis: Why Additional Space Is Needed
Appendix C	Contra Costa County Fire Protection District Comment Letter
Appendix D	County Public Works Comment Letter (May 4, 2010)
Appendix E	Reflected Solar Glare Studys
Appendix F	Air Quality Emissions Calculations
Appendix G	Biological Resources Assessment and Arborist Reports
Appendix H	Cultural and Historical Resources Study
Appendix I	Geotech
Appendix J	Greenhouse Gas Emmissions Calculations
Appendix K	Phase I Environemtnal Site Assessment
Appendix L	Drainage Report
Appendix M	Stormwater Control Plan
Appendix N	Equipment Noise Analysis
Appendic O	Traffic Stuidies and Correspondence

ABBREVIATIONS AND ACRONYMS

2010 CAP	Bay Area 2010 Clean Air Plan
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACOE	U.S. Army Corp of Engineers
ADA	Americans with Disabilities Act
ADT	average daily traffic
Air Basin	San Francisco Bay Area Air Basin
ARB	California Air Resources Board
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AUHSD	Acalanes Union High School District
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CalRecycle	Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CBC	California Building Code
CBD	central business district
CCCSPD	Contra Costa County Fire Protection District
CCCSD	Central Contra Costa Sanitary District
CCCSWA	Central Contra Costa Solid Waste Authority
CCCWP	Contra Costa Clean Water Program
CCTA	Contra Costa Transportation Agency
CDFG	California Department of Fish and Game
CEC	California Energy Commission
Central County	Central Contra Costa County
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH ₄	methane
chloroethene	Vinyl Chloride

CHLs	California Historical Landmarks
CIP	Capital Improvement Program
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
Commission	Contra Costa County Planning Commission
County	Contra Costa County
County PWD	County Public Works Department
CRHR	California Register of Historic Resources
CWA	Clean Water Act
dB	decibel
DCD	County Department of Conservation and Development
DHS	Department of Health Services
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
ESA	Endangered Species Act (see Section 4.3, Biological Resources)
ESA	Environmental Site Assessment (see Section 4.7, Hazards and Hazardous Materials)
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
g	gravity
General Plan	Contra Costa County General Plan
GHG	greenhouse gases
GMP	Growth Management Program
gpd	gallons per day
HCP	Habitat Conservation Plan
HMP	Hydrograph Modification Management Plan
HTP	Heritage Tree Preservation
HVAC	heating, ventilation, and air conditioning
I-680	Interstate 680
ips	inches per second
kWh	kilowatt hour
LBP	lead based paint

l_{dn}	Day/Night average sound level
LOS	Level of Service
LUST	leaking underground storage tank
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
mcy	million cubic yards
mi	miles
MMI	Mercalli Intensity Scale
mpg	miles per gallon
mph	miles per hour
MTBE	methyl tert butyl ether
MTC	Metropolitan Transportation Commission
MWELO	Model Water Efficient Landscape Ordinance
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
ng/m^3	nanograms per cubic meter
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NPS	nonpoint source
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	ozone
OHP	California Office of Historic Preservation
PG&E	Pacific Gas & Electric Company
PM	Particulate matter
ppb	parts per billion
PPE	personal protective equipment
PPV	Peak Particle Velocity
PRC	Public Resources Code
project	Sufism Reoriented project
R-10	Single Family Residential zoning district
RCRA	Resource Conservation and Recovery Act of 1976

RNP	Roadway Network Plan
ROG	Reactive Organic Gas
ROW	Right-of-Way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SDC	seismic design category
SH	Single-Family Residential – High Density land use designation
SHPO	State Office of Historic Preservation
SHRC	State Historical Resources Commission
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SR 24	State Route 24
SWCP	Storm Water Control Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCM	Transportation Control Measure
TDM	Transportation Demand Management
U.S. EPA	U. S. Environmental Protection Agency
UCMP	University of California Museum of Paleontology
ULL	urban limit line
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
v/c	volume/capacity
VMT	vehicle miles traveled
VOC	volatile organic compound
WCSD	Walnut Creek School District
WCWTP	Walnut Creek Water Treatment Plant
WSA	water supply assessment
Zoning Code	Contra Costa County Code

1.0 INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) evaluates the potential impacts of a proposed New Sanctuary for Sufism Reoriented. The proposal contemplates construction and operation of an approximately 66,000-square-foot religious facility in the Saranap neighborhood of unincorporated Walnut Creek/Contra Costa County (County).

The County (County) is the Lead Agency for the environmental review. The County has prepared this Draft EIR in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.); and *the Guidelines for Implementation of the California Environmental Quality Act* (CEQA Guidelines; California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.).

As further described in **Chapter 3, Project Description**, the County has developed this EIR to equally evaluate two Project Variants – Project Variant A and B. These variants differ mainly in terms of the extent of improvements within an adjacent public right-of-way area along Boulevard Way.

1.1 PURPOSE OF THE DRAFT EIR

The purpose of an environmental impact report (EIR) is “to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.” (Public Resources Code Section 21002.1[a]). It is not the purpose of an EIR to recommend approval or denial of any particular project.

CEQA requires that all state and local government agencies consider the consequences to the natural and human environment before carrying out or approving any project. To that end, this Draft EIR informs County decision makers, other responsible agencies, and the public of the environmental consequences that could occur if either of the Project Variants were implemented, and identifies the following:

1. mitigation measures to reduce significant impacts;
2. significant impacts that cannot be avoided;
3. growth-inducing impacts;
4. effects found not to be significant;

5. cumulative impacts of the project in combination with past, present, and reasonably foreseeable future projects; and
6. alternatives to the proposed Project Variants.

The County will accept comments on the adequacy of this Draft EIR, and will prepare a Final EIR that will include responses to these comments, as well as any revisions to the Draft EIR.

The Draft and Final EIR documents together complete the EIR. In accordance with CEQA Section 15090, the County must certify the Final EIR before taking any action to approve or deny the proposal – in this case, either Project Variant.

1.2 SCOPE OF THIS DRAFT EIR

The focus of this Draft EIR is to evaluate the environmental consequences of each Project Variant. The Draft EIR covers following environmental topics in depth:

- | | |
|------------------------------------|-----------------------------------|
| 1. Aesthetics | 8. Hydrology and Water Quality |
| 2. Air Quality | 9. Land Use and Planning |
| 3. Biological Resources | 10. Noise |
| 4. Cultural Resources | 11. Population and Housing |
| 5. Geology and Soils | 12. Public Services |
| 6. Greenhouse Gas Emissions | 13. Traffic and Circulation |
| 7. Hazards and Hazardous Materials | 14. Utilities and Service Systems |

Chapter 7, CEQA Required Discussions, includes analysis of environmental effects found to be not significant, i.e., the areas of Agricultural and Forest Resources, Mineral Resources, and Recreation.

1.3 REPORT ORGANIZATION

The Draft EIR is organized into the following chapters:

Chapter 1: Introduction provides an introduction and overview describing the focus of the Draft EIR and the environmental review process.

Chapter 2: Executive Summary summarizes the proposal, the Project Variants, the environmental consequences that would result from the Project Variants, provides a summary table of significant environmental impacts, identifies mitigation measures, and indicates the levels of significance of impacts after mitigation.

Chapter 3: Project Description describes the Project Variants, providing detail on location, objectives, and required approvals.

Chapter 4: Setting, Impacts, and Mitigation Measures describes the environmental setting and provides an analysis of the environmental impacts of the Project Variants, identifying mitigation measures for any significant environmental impacts.

Chapter 5: Alternatives provides an evaluation of the three alternatives to the Project Variants.

Chapter 6: Cumulative Impacts describes the environmental impacts that could occur with implementation of either of the Project Variants in combination with other approved, planned, or on-going projects in the vicinity. When cumulative impacts are identified, the analysis determines whether contribution of the Project Variants to these impacts is cumulatively considerable.

Chapter 7: CEQA Required Conclusions provides a discussion of impacts found to be not significant (including effects to agricultural and forestry resources, mineral resources, and recreation facilities) and a summary of any significant environmental impacts, including unavoidable and growth-inducing impacts and cumulative impacts.

Chapter 8: References provides a list of the references for each environmental section and list of the people and agencies contacted.

Chapter 9: List of Preparers identifies the Lead Agency and consultants involved in the preparation of this Draft EIR.

1.4 ENVIRONMENTAL REVIEW PROCESS FOR THE DRAFT EIR

Scoping

Prior to the preparation of a Draft EIR, the lead agency prepares and circulates for public comment a Notice of Preparation (NOP). The purpose of the NOP is to determine the scope of the EIR through consultation with responsible agencies and other interested parties.

The County issued a Notice of Preparation (NOP) related to the New Sanctuary for Sufism Reoriented project on March 9, 2010. The NOP solicited comments on the scope

and content of the EIR and also announced a public scoping meeting, which the County convened during a regularly scheduled meeting of the County Zoning Administrator on March 22, 2010.

During the 30-day comment period (ending April 8, 2010), the County received 22 comment letters and one petition regarding the scope and content of the Draft EIR. Twenty-four people signed the petition, and eight members of the public testified at the public scoping meeting. All written and oral comments received during the comment period and scoping session were considered in the preparation of the Draft EIR.

Appendix A contains a copy of the NOP and the comments received in response to the NOP.

Public Review Period

CEQA requires a 45-day public review and comment period on the Draft EIR. Written comments on the Draft EIR may be submitted to the following address:

ATTN: Lashun Cross, Senior Planner
Contra Costa County
Department of Conservation & Development
Community Development Division
651 Pine Street
4th Floor, North Wing
Martinez, CA 94553

While reviewing the Draft EIR, reviewers should focus on the document's adequacy in identifying and analyzing effects on the environment and on the ways in which the significant effects might be avoided or mitigated. CEQA Guidelines Section 15204(c) states that reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts.

Final EIR

Following the close of the public comment period, responses to public input will be prepared and published as a separate document. The Draft EIR text and appendices, together with the response to comments document, will constitute the Final EIR.

The Final EIR will be available to the public before the County considers certifying the document. At a public hearing, the County will consider certification of the Final EIR. If the Final EIR is certified, the County will then take action to approve or deny the project application. If the project is approved, then the project applicant may move forward and seek other necessary County approvals, such as grading permits, building permits,

encroachment permits, haul route approval, etc. See **Table 3-3** for a list of all permits and approvals associated with the proposal.

1.5 INCORPORATING BY REFERENCE

The documents and other sources that have been used in the preparation of this Draft EIR are identified in **Chapter 8, References**. The CEQA Guidelines set forth three methods that may be used to incorporate data from other sources:

Use of an EIR appendix (CEQA Guidelines, Section 15148)

To achieve a balance between the highly technical analysis referenced in an EIR and an EIR's public information function, the CEQA Guidelines allow technical analyses as appendices to the main body of the EIR. Information in an EIR appendix may include summarized technical data, maps, plot plans, diagrams, and similar information in sufficient detail to permit the public and reviewing agencies to make full assessment of the project's significant environmental effects. The appendices are presented on a CD-ROM as Volume II to this Draft EIR.

Incorporation by reference (CEQA Guidelines, Section 15150)

Information incorporated by reference has been summarized in the appropriate section(s) of this Draft EIR, as permitted in Section 15150 of the CEQA Guidelines.

Citation to technical information (CEQA Guidelines, Section 15148)

Source documents that are not project-specific have been cited where appropriate in the Draft EIR.

All documents referenced in the Draft EIR are available at the Contra Costa County Department of Conservation and Development, Community Development Division.

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2.0 EXECUTIVE SUMMARY

This Draft Environmental Impact Report (Draft EIR) has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) to evaluate the potential impacts of the proposed New Sanctuary for Sufism Reoriented. This chapter presents an overview of the environmental analysis. Section 15123 of the CEQA Guidelines requires that an EIR summary identify the following:

1. each significant impact with proposed mitigation measures and alternatives that would reduce or avoid that impact;
2. areas of controversy known to the lead agency, including issues raised by agencies and the public; and
3. issues to be resolved, including a choice among alternatives and whether or how to mitigate the significant impacts.

2.1 PROJECT UNDER REVIEW

The applicant has proposed to develop a religious facility (sanctuary building) on an approximate 3 acre site in the Saranap neighborhood of unincorporated Walnut Creek/Contra Costa County (County). The applicant is Sufism Reoriented, a non-profit California religious corporation recognized by the State of California and the Federal government as a church.

The proposed 66,074-square-foot sanctuary building includes a prayer hall, administrative offices, a library/bookstore, classroom and art program space, and related ancillary features. Approximately 46,000 square feet of the building would be located below ground, including the administrative offices, a library/bookstore, classroom and art program space.

The project site would be further developed with a plaza, parking area, and landscaping. See **Section 3.4** for a detailed description of project components.

Sufism Reoriented's current sanctuary is located at 1300 Boulevard Way. If this project is approved and the new sanctuary building is constructed, Sufism Reoriented would cease its use of 1300 Boulevard Way, selling or leasing that property to another (thus far unknown) user.

An environmental impact report (EIR) will typically analyze a “project” in-depth, while analyzing a number of project “alternatives” at a more cursory level of detail. This draft EIR evaluates two Project Variants (A and B), which differ mainly in terms of improvements to the Boulevard Way right-of-way frontage. The Project Variants are explained in detail in **Chapter 3, Project Description**.

2.2 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The following section provides an overview of the analysis contained within **Chapter 7, CEQA-Required Conclusions**. The California Environmental Quality Act (CEQA) requires the summary to include a discussion of: 1) potential areas of controversy; 2) significant impacts; 3) significant unavoidable impacts; and 4) Alternatives to the Project. **Table 2-1** at the end of this Chapter summarizes the significant impacts and mitigation measures.

2.3 POTENTIAL AREAS OF CONTROVERSY

Pursuant to CEQA Guidelines Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A Notice of Preparation (NOP) was issued on March 9, 2010. The NOP describing the original concept and issues to be addressed in the EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period extending to April 8, 2010. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Air Quality
- Geology and Soils
- Noise
- Traffic and Circulation
- Cumulative Impacts

2.4 SIGNIFICANT UNAVOIDABLE IMPACTS

There are no significant unavoidable impacts related to either Project Variant.

2.5 ALTERNATIVES

Alternative 1: No Project - No Build

Under Alternative 1, no new religious facility would be constructed on the project site; no further development of any type would occur within the project area. The existing residential units on site would be rehabilitated and rented or sold for occupancy.

Alternative 2: No Project - Existing General Plan and Zoning

Under Alternative 2, the project site would be developed with uses allowed under the existing General Plan Land Use and Zoning Ordinance designations. Project site parcels are currently designated by the General Plan as Single-Family Residential – High Density (SH) and zoned as Single Family Residential District (R-10). Under these land use and zoning designations, the site would be developed with 15 new residential units, including 5 single-family homes and 10 “duet” units.

Alternative 3: Modified Right-of-Way

Under Alternative 3, the project site would be developed with the religious facility, however with improved safety conditions for drivers exiting the project site onto Boulevard Way. This Modified Right-of-Way Alternative would allow potentially significant impacts related to traffic safety to be avoided.

2.6 SUMMARY OF IMPACTS

Table 2-1 summarizes the significant environmental impacts and mitigations measures to reduce significant impacts. The table is arranged in four columns: 1) significant impacts; 2) level of significance without mitigation; 3) mitigation measures; and 4) level of significance after mitigation. Levels of significance are categorized as follows: S = Significant; LTS = Less Than Significant. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific sections within **Chapter 4**.

Table 2-1 Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Aesthetics			
Impact 4.1-1: Either Project Variant would result in the potential for substantial nighttime lighting which could adversely affect nighttime views.	S	Mitigation Measure 4.1-1: The applicant shall submit a lighting plan and a photometric study which shall demonstrate, to the satisfaction of the Department of Conservation and Development, that no bare bulbs will be visible from offsite. The plan shall also demonstrate that no lighting will be directed across property lines, and all lighting visible from offsite – including spillover onto adjacent properties – will be compatible with offsite private and public right-of-way lighting in the vicinity. The plans shall reflect the effect of lighting both before and after proposed site landscaping achieves maturity.	LTS
Air Quality			
Impact 4.2-1: Construction would result in emissions of fugitive dust.	S	Mitigation Measure 4.2-1: Prior to the approval of a grading plan, County DCD shall ensure that grading and demolition plans include the following measures for all phases of construction as recommended by BAAQMD to reduce the air quality impacts of particulate matter (PM ₁₀ and PM _{2.5}) associated with grading and new construction: <ul style="list-style-type: none"> ■ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered a minimum of two times per day; ■ All haul trucks transporting soil, sand, or other loose material off-site shall be covered; ■ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. No dry power sweeping shall be performed (i.e., prohibited); 	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Air Quality (continued)			
<i>Impact 4.2-1 continued</i>		<ul style="list-style-type: none"> ■ All vehicle speeds on unpaved roads shall be limited to 15 mph; ■ All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used; ■ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points; ■ All construction equipment and haul trucks shall be maintained and properly tuned in accordance with manufacturer’s specifications. All construction equipment and haul trucks shall be checked by a certified mechanic and determined to be running in proper condition prior to operation; and ■ A publicly visible sign shall be posted with the telephone number of the Construction Manager and BAAQMD to report dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD complaint line telephone number shall also be visible to ensure compliance with applicable regulations. 	
Impact 4.2-2: Emissions of diesel exhaust during construction would exceed BAAQMD thresholds for NO _x .	S	<p>Mitigation Measure 4.2-2: Emissions of NO_x from construction activities shall be limited to less than 54 pounds per day. This performance standard would be achieved by limiting vehicle miles travelled (VMT) for standard hauling trucks to 1,764 VMT per day.</p> <p>Assuming 13 cubic-yard-trucks and delivery to the Acme landfill, this would mean that soil hauling would be capped at 74 round trips per day, which would extend the excavation schedule from an earlier projection by the applicant of 35 working days to 45 working days. If other sites were identified to accept the fill, the schedule could be revised accordingly to fit within the same VMT limitation.</p>	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Air Quality (continued)			
Impact 4.2-3: The Project Variant ultimately selected could create objectionable odors affecting a substantial number of people during construction.	S	Mitigation Measure 4.2-3: Prior to the approval of a grading permit, County DCD shall verify that grading plans include a requirement that limits the allowable idling time of diesel-powered construction equipment to two minutes or less	LTS
Biological Resources			
Impact 4.3-1: Potential future purchase of the adjacent Odell property would trigger a County Fire Protection District requirement to widen the existing secondary road providing access to the project site from Warren Road. This would result in the removal of and/or damage to several existing trees.	S	Mitigation Measure 4.3-1: If the applicant purchases the Odell property, compliance with the CCCFPD condition to widen the secondary access drive to Warren Road shall be required. In compliance with Chapter 816-6.8002 of the Tree Protection and Preservation Ordinance, a permit shall be obtained for the removal of all protected trees. If the applicant purchases the Odell property after August 2012, a qualified arborist shall examine the property and the recommendations of the arborist reports dated June 22, 2009 and August 4, 2009, included as Appendix G to this EIR, to confirm and/or append to the conditions included in the earlier reports.	LTS
Impact 4.3-2: Demolition and tree removal activities could have an adverse effect on special-status species including roosting bats that are potentially nesting in trees and/or abandoned buildings found on the project site, as well as migratory birds and raptors that may nest in mature trees. .	S	Mitigation Measure 4.3-2a: Given the potential for occurrence of roosting bats on the project site, the Contra Costa County Department of Conservation and Development (DCD) shall require a qualified biologist to conduct pre-construction surveys for roosting bats prior to issuance of demolition permits. If roosting bats are detected, DCD shall require that a qualified biologist, in consultation with the California Department of Fish and Game (CDFG), shall exclude/evict the bats prior to removal of the occupied structure or tree. Abandoned structures or trees that are proposed for removal shall be removed before ground-disturbing activities begin to avoid conflicts	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Biological Resources (continued)			
<i>Impact 4.3-2 continued</i>		<p>with potential nesting periods. Immediately prior to construction, DCD shall require another pre-construction survey to be conducted to detect presence and confirm absence of active nesting in the trees that will remain.</p> <p>During the pre-construction survey, the qualified biologist may enact other measures to protect roosting bats on the project site. These measures must be followed throughout the pre-construction and construction period.</p> <p>Mitigation Measure 4.3-2b: Given the potential for occurrence of special-status bird species on the project site and the possibility for overlap of demolition and tree removal with the nesting season, DCD shall require a qualified biologist to conduct pre-construction surveys for nesting birds prior to issuance of demolition permits and no more than one week prior to tree removal.</p> <p>If an occupied bird’s nest is detected, a buffer zone of 50 to 300 feet shall be implemented to protect adults and nestlings from construction disturbances. If occupied nests are detected, exclusion areas are required until young birds have fledged.</p> <p>During the pre-construction survey, the qualified biologist may enact other measures to protect raptors and birds on the project site. These measures must be followed throughout the pre-construction and construction period. Destruction of occupied nests would be in violation of the Migratory Bird Treaty Act (MBTA) and the CDFG Code.</p>	
Impact 4.3-3: Construction activities could disturb potential nesting habitat in trees that are not proposed for removal.	S	Implement Mitigation Measures 4.3-2a and 4.3-2b.	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Cultural Resources			
Impact 4.4-1: Demolition of existing structures and construction activities could inadvertently damage previously unidentified historical, archaeological, and paleontological resources on the project site.	S	Mitigation Measure 4.4-1: In the event that buried cultural (historical, archeological, and/or paleontological) resources are encountered, the Contra Costa County Department of Conservation and Development (DCD) shall ensure that construction, excavation, and/or grading activities within 100 feet of the find are temporarily halted until a qualified archaeologist or paleontologist, hired by the applicant, can assess the significance of the find and provide proper management recommendations to be incorporated in to the Project Variant ultimately selected. Prehistoric cultural materials include, but is not limited to, shell midden deposits, hearth remains, stone and/or shell artifacts, and/or burials. Historic materials, including but not limited to, whole or fragmentary ceramic, glass or metal objects, wood, nails, brick, or other materials may occur on the project site in deposits such as old privies or dumps. If the site is found to contain significant cultural or paleontological resources (as determined by the CEQA Guidelines) by a qualified archaeologist or paleontologist, funding shall be provided by the applicant to identify, record, report, evaluate, and recover the resources as necessary. Construction within the area of the find shall not recommence until impacts to the cultural or paleontological resource are mitigated. Additionally, as required by Public Resources Code Section 5097.993, the applicant must inform project personnel that collection of any Native American artifact is prohibited by law.	LTS
Impact 4.4-2: Construction activities could inadvertently uncover human remains.	S	Mitigation Measure 4.4-2: In accordance with Public Resource Code Section 5097.98, should human remains be found on the site at any time during pre-construction or construction activities, the Contra Costa County Department of Conservation and Development (DCD) shall	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
<i>Cultural Resources (continued)</i>			
<i>Impact 4.4-2 continued</i>		<p>ensure that no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall be disturbed until:</p> <ul style="list-style-type: none"> ■ The County Coroner in which the remains are discovered is contacted and determines that no investigation of the cause of death is required; and ■ If the County Coroner determines the remains to be Native American then: <ol style="list-style-type: none"> (1) The coroner shall contact the Native American Heritage Commission within 24 hours; (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased native American; and (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98. <p>The landowners or their 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 subsurface disturbance if the following conditions occur:</p> <ul style="list-style-type: none"> ■ The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission; ■ The descendent identified fails to make a recommendation; or 	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation														
Cultural Resources (continued)																	
<i>Impact 4.4-2 continued</i>		<ul style="list-style-type: none"> The landowners or their authorized representative reject the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner. 															
Geology and Soils																	
Impact 4.5-1: Either Project Variant could expose people and structures to potential adverse effects from strong seismic ground shaking.	S	Mitigation Measure 4.5-1: Prior to the issuance of a building permit, the County Building Official shall verify that plans incorporate the following CBC seismic site categorization and design coefficients, in conformance with the most recent version of the California Building Code:	LTS														
		<table border="1"> <thead> <tr> <th>Categorization/Coefficient</th> <th>Design Value</th> </tr> </thead> <tbody> <tr> <td>Site Class (Table 1613.5.2)</td> <td>C</td> </tr> <tr> <td>0.2 Second Spectral Response Acceleration, S_s (Figure 1613.5(3))</td> <td>1.5g</td> </tr> <tr> <td>1.0 Second Spectral Response Acceleration, S_1 (Figure 1613.5(4))</td> <td>1.6g</td> </tr> <tr> <td>Seismic Site Coefficient, F_a (Table 1613.5.3(1))</td> <td>1.0</td> </tr> <tr> <td>Seismic Site Coefficient, F_v (Table 1613.5.3(2))</td> <td>1.3</td> </tr> <tr> <td>Long-period Transition Period, T_1 (Figure 22-6)¹</td> <td>1.0</td> </tr> </tbody> </table>	Categorization/Coefficient	Design Value	Site Class (Table 1613.5.2)	C	0.2 Second Spectral Response Acceleration, S_s (Figure 1613.5(3))	1.5g	1.0 Second Spectral Response Acceleration, S_1 (Figure 1613.5(4))	1.6g	Seismic Site Coefficient, F_a (Table 1613.5.3(1))	1.0	Seismic Site Coefficient, F_v (Table 1613.5.3(2))	1.3	Long-period Transition Period, T_1 (Figure 22-6) ¹	1.0	
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Long-period Transition Period, T_1 (Figure 22-6) ¹	1.0																
		¹ From ASCE/SEI 7-05 (2006) Source: DCM Engineering, October 2008.															
		The County Building Official shall certify that a qualified geotechnical engineer has reviewed final plans and specifications for consistency with CBC and UBC design standards. The County Building Official shall verify that all pertinent recommendations of the geotechnical engineer are incorporated into final building plans.															

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
<i>Geology and Soils (continued)</i>			
Impact 4.5-2: The project site is located on soil that could become unstable as a result of construction activities, and potentially result in instability on neighboring sites.	S	<p>Mitigation Measure 4.5-2a: Prior to the issuance of a grading permit, the County Building Official shall direct the applicant or their contractor to complete the following actions:</p> <ul style="list-style-type: none"> ■ inspect existing structures/utilities to document any evidence of existing damage, cracking, distortion, weaknesses in structural elements, deterioration, corrosion, excessive stress, overloading, or use of the structure in a manner which may not have been intended by its design prior to issuance of any construction permits. The inspection shall include an assessment of the condition of the following structures and facilities: <ul style="list-style-type: none"> • the parsonage • structures on neighboring properties to the south along Warren Road • Boulevard Way • potentially affected utilities within the project site, as determined by a qualified engineer <p>All inspections and notations of pre-existing damages shall be thoroughly documented prior to the issuance of a demolition or grading permit by photographs and mapping, and reference markings or measurement points shall be established on critical or previously damaged structures/utilities to assist in determining whether any damage or movement has occurred as a result of construction.</p> <p>Where existing structures are in close proximity to the excavation, additional measures beyond pre-construction inspection, such as building underpinning, shall be required as determined by the geotechnical consultant.</p>	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
<i>Geology and Soils (continued)</i>			
<i>Impact 4.5-2 continued.</i>		<p>Mitigation Measure 4.5-2b: Prior to the issuance of a grading permit, the County Geologist shall review the final plans to ensure that proposed excavation shoring and dewatering systems meet minimum performance requirements. These minimum performance requirements include:</p> <ol style="list-style-type: none"> a. Protect personnel that enter excavations; b. Protect adjacent existing utilities, pavements, and structures; c. Installation should not cause settlement or heave of the ground surface nor produce construction vibrations that could damage adjacent utilities or structures; d. Prevent caving or lateral movement of excavation walls and associated loss of adjacent ground and adjacent ground surface settlement, even when subjected to construction vibration; e. Prevent heave and or piping (boiling) of the excavation bottom; and f. Where applicable, resist hydrostatic pressures and lateral loads for adjacent structural foundations, vehicular traffic, construction equipment and spoils. <p>Mitigation Measure 4.5-2c: Prior to the issuance of a grading permit, the County Building Official shall ensure that grading plans show a requirement that a qualified geotechnical engineer monitor and document soil and groundwater conditions on an ongoing basis during excavation, grading, and construction. The geotechnical engineer shall anticipate changes and modifications to shoring systems and sloping (on the west side) in response to changes in soil and groundwater conditions. All sheeting and shoring shall be evaluated for stability by the geotechnical consultant prior to entry by personnel. The County</p>	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Geology and Soils (continued)			
<i>Impact 4.5-2 continued.</i>		Building Official and County Geologist shall review and consider the recommendations of the geotechnical engineer and incorporate any or all recommendations into final grading plans.	
Impact 4.5-3: Either Project Variant would result in substantial soil erosion.	S	Incorporate Mitigation Measure 4.8-2.	LTS
Impact 4.5-4: Either Project Variant would be located on expansive soils that could create a risk to life and property.	S	<p>Mitigation Measure 4.5-4a: Prior to the issuance of a grading permit, the County Building Official shall ensure that plans for building foundations have been reviewed by a qualified geotechnical engineer to ensure measures are included to reduce potential future structural damage to the religious facility from expansive soils. Such measures shall include but are not limited to minimum requirements for the expansion potential of fill material, soil compaction, and soil moisture content. The County Building Official and County Geologist review and approval shall ensure that all pertinent recommendations of the geotechnical engineer are incorporated into final grading plans.</p> <p>Mitigation Measure 4.5-4b: Prior to the issuance of a building permit, the County Building Official shall ensure that plans are revised as necessary to show that foundations for the new facility consist of a reinforced concrete floor slab or a mat slab, consistent with recommendations of the County Geologist.</p>	LTS
Greenhouse Gas Emissions			
There would be no significant impacts to greenhouse gas emissions.			

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Hazards and Hazardous Materials			
Impact 4.7-1: Demolition of existing structures on the site could result in the release of lead, asbestos, and other contaminants.	S	<p>Mitigation Measure 4.7-1a: At least fifteen days prior to issuance of a demolition permit, a state certified contractor shall complete an asbestos and lead-based paint survey for all structures proposed for demolition that were constructed prior to 1980. The survey shall be submitted to the Department of Conservation and Development, Community Development Division for review and approval.</p> <p>If LBP or asbestos-containing materials are identified in the survey, they shall be removed from the site and properly disposed of in accordance with CAL/ OSHA requirements:</p> <ul style="list-style-type: none"> ■ Known or suspected asbestos-containing materials shall be abated by a certified asbestos abatement contractor in accordance with BAAQMD regulations and notification requirements. ■ Intact lead-based paint found to be secure (not flaking, peeling or cracked) may be discarded along with demolition debris during the demolition of the structure. ■ Loose and peeling paint shall be disposed of as state and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. ■ Hazardous wastes shall be appropriately managed, labeled, transported, and disposed of by trained workers in accordance with local requirements. ■ The demolition and removal of materials potentially containing lead-based paint would be required to follow the CAL/OSHA Lead in Construction Standard, Title 8, California Code of Regulations (CCR). 	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Hazards and Hazardous Materials (continued)			
<i>Impact 4.7-1 continued</i>		<ul style="list-style-type: none"> <li>■ Other hazardous materials associated with buildings, such as fluorescent lights and electrical switches, shall be disposed of in accordance with DTSC hazardous waste regulations. <p>Mitigation Measure 4.7-1b: Prior to the issuance of grading or demolition permit, the County Building Official and Community Development Division shall review a Risk Management Plan prepared for the Project Variant ultimately selected by a qualified professional. The plan shall include, but is not limited to the following conditions:</p> <ul style="list-style-type: none"> <li>■ Should tanks, drums, free product, or other potential chemical hazards be encountered during excavation, the County, environmental consultant and the owner shall be consulted prior to proceeding. Excavated material shall be segregated and stockpiled in a designated area and covered in plastic. Stockpiles shall be maintained for profiling and disposal. A qualified environmental consultant shall take samples of each stockpile for analysis. Stockpiles and other hazardous wastes shall be appropriately managed, labeled, transported, and disposed of by trained workers in accordance with all applicable laws and regulations. <li>■ The contractor shall include specific information related to chemical hazards that could be present during the excavation. This information shall include, but shall not be limited to, the proper use of personal protective equipment (PPE), worker air monitoring, and action levels for use of PPE and stop work. Workers engaged in the excavation of petroleum-affected soil shall be trained per OSHA standards for hazardous waste operations and emergency response. 	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Hydrology and Water Quality			
<p>Impact 4.8-1: Improvements, primarily the introduction of a parking area for 74 cars, could affect the quality of stormwater flowing from the project site.</p>	<p>S</p>	<p>Mitigation Measure 4.8-1a: : Prior to the approval of a building permit, the County Department of Conservation and Development shall ascertain that final landscaping plans for the Project Variant ultimately selected shall:</p> <ul style="list-style-type: none"> ■ Be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides that can contribute to stormwater pollution. ■ Specify plantings within planters and swales that are tolerant of the sandy loam soils and periodic inundation. ■ Include pest-resistant plants. ■ Include plantings appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions. ■ Note that all on-site storm drain inlets shall be marked with the words “No Dumping! Drains to Creek” or similar language. <p>Mitigation Measure 4.8-1b: Prior to the approval of a building permit, the applicant shall submit a Final Storm Water Control Plan to the Public Works Department in general conformance with the Preliminary Drainage Report for review and approval. The Final Drainage Report and Storm Water Control Plan shall demonstrate use of GrassPave2 and pervious pavers or pervious concrete with comparable or better infiltration and storage capacity.</p> <p>Mitigation Measure 4.8-1c: Prior to the approval of a building permit, the applicant shall submit a Maintenance Program to the Public</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Hydrology and Water Quality (continued)			
<i>Impact 4.8-1 continued</i>		<p>Works Department. The Maintenance Program shall include procedures for maintaining the pervious surfaces employed within the project site in the Operation and Maintenance Plan of the SWCP. The Maintenance Program shall include the following measures:</p> <ul style="list-style-type: none"> ■ Landscaping grades shall follow a post-project Sediment Control Plan. Landscape areas shall be designed to drain away from pervious surfaces in the parking lot area wherever possible in order to curtail run-off from carrying silt onto the pervious pavements. The Sediment Control Plan would be included in the Storm Water Control Plan and grades directing water away from the parking lot area shall be shown on the Grading plan. ■ The applicant shall engage an outside contractor experienced in maintenance of pervious pavers. The contractor will follow the procedures listed in the Operation and Maintenance Plan of the Storm Water Control Plan. ■ Permeable paver surfaces will be kept clean of organic materials. Leaves and other organic material shall be swept and removed from the paver surfaces periodically when debris accumulates and weekly during the rainy season (October 15 to April 15), or as otherwise directed by the Public Works Department for any other wet times of the year. ■ Periodic vacuuming should be used to clear out voids with conventional street sweepers or like equipment with vacuums and brushes, a minimum of two (2) times a year, but the actual required frequency will shall be determined by conditions of the site. With an interlocking paver system, additional aggregate fill material will be added after cleaning, if needed to return aggregate fill material to its initial installation levels. 	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Hydrology and Water Quality (continued)			
<i>Impact 4.8-1 continued</i>		<ul style="list-style-type: none"> ■ The landowner shall be obligated to comply with the Operation and Maintenance Plan and Agreement. The landowner’s maintenance obligations shall be reflected in such recorded documents as the County lawfully and routinely requires. 	
Impact 4.8-2: During construction, excavated materials could contribute sediment to Las Trampas Creek that could adversely affect water quality.	S	Mitigation Measure 4.8-2: Prior to the issuance of a grading permit, the County Building Official shall approve a Storm Water Pollution Prevention Plan a (SWPPP) prepared by the applicant. The SWPPP shall comply with current San Francisco Bay Regional Water Quality Control Board guidelines and shall adopt acceptable best management practices (BMPs) for control of sediment and stabilization of erosion in the project area. The SWPPP shall include acceptable BMPs for the protection of water quality.	LTS
Land Use and Planning			
There would be no significant impacts to land use and planning.			
Noise			
Impact 4.10-1: Construction activities could generate a temporary increase in noise in the project vicinity.	S	<p>Mitigation Measure 4.10-1: The DCD shall ensure that applicant adheres to the following mitigation measures in order to generate the least noise impacts during construction:</p> <ul style="list-style-type: none"> ■ All construction activities shall be limited to the hours of 8:00 AM to 5:00 PM, Monday through Friday, and shall be prohibited on state and federal holidays; ■ The applicant shall hold a pre-construction meeting with the job inspectors and the general contractor/onsite manager to 	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Noise (continued)			
<i>Impact 4.10-1 continued</i>		<p>confirm that all noise mitigation measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed prior to beginning construction;</p> <ul style="list-style-type: none"> ■ The applicant shall notify neighbors within 300 feet of the construction area, at least 30 days in advance of extreme noise-generating activities, about the estimated duration of the activity; ■ The applicant shall designate a construction noise coordinator who will be responsible for implementing the noise control measures and responding to complaints. This person’s name and contact information shall be posted clearly around the project site and shall also be distributed to properties within 200 feet of the site boundaries. The construction noise coordinator shall be available during all times during construction activities and shall maintain a log of complaints. A copy of the log shall be provided to the DCD monthly on the 30th day of each month; ■ The applicant shall require construction contractors to limit noise generating construction activities as required by the DCD. No construction activities shall be allowed on weekends without prior authorization of the Zoning Administrator, and no extreme noise generating activities shall be allowed on weekends and holidays; ■ The applicant shall require construction contractors to implement the following measures to reduce daytime noise due to construction activities: 	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Noise (continued)			
<i>Impact 4.10-1 continued</i>		<ul style="list-style-type: none"> • Equipment and trucks used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible). • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible. • Stationary noise sources shall be located as far from adjacent receptors as possible, and shall be muffled and enclosed within temporary sheds, insulation barriers, or other measures to the extent feasible. ■ Prior to the start of construction, the applicant shall construct a temporary sound barrier along the northern and southern property lines to provide the maximum protection for the residential uses to the north and south. The barriers can be constructed out of wood or other materials as long as they have a minimum surface weight of approximately 2.5 pounds per square foot. Possible materials include 1-1/8-inch-thick plywood or fully overlapping 1x redwood boards (1-1/2-inch- 	

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Noise (continued)			
<i>Impact 4.10-1 continued</i>		thick total). The barriers would likely be 6 to 8 feet tall but this would be refined and approved by a qualified acoustician prior to the issuance of grading permits. Issues to consider when determining the ultimate height, length, and location of the barriers are the actual construction practices, including equipment to be used and the location and duration of noisier activities. The topography will also need to be considered in the final determination of barrier heights and effectiveness.	
Impact 4.10-2: Construction and operational activities could temporarily expose persons or structures to excessive groundborne vibration.	S	Mitigation Measure 4.10-2: The DCD shall ensure that the applicant isolates the equipment in the mechanical well per the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guidelines. ASHRAE is considered the industry standard for mechanical system design standards.	LTS
Population and Housing			
There would be no significant impacts to population and housing.			
Public Services			
There would be no significant impacts to public services.			
Traffic and Circulation			
Impact 4.13-1: The proposed reliance on a TDM program would increase the number of pedestrians and bicyclists along the Boulevard Way frontage of the project site, thereby necessitating a sidewalk along this frontage.	S	Mitigation Measure 4.13-1: If Project Variant A is ultimately selected and approved, the County Department of Conservation and Development and County Public Works Department shall verify that final plans incorporate a sidewalk on the Boulevard Way frontage similar to that incorporated in Project Variant B. Plans shall show the sidewalk	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Traffic and Circulation (continued)			
<i>Impact 4.13-1 continued</i>		<p>along all project frontage and extending to Warren Road. Sidewalk plans shall conform to prevailing County standards.</p> <p>In addition, if Project Variant A is approved, prior to the approval of any building or grading permit, the County Department of Conservation and Development and County Public Works Department shall verify that final plans for the public right-of-way area show a north-south crosswalk at a location mutually acceptable to the aforementioned County departments and the applicant. The crosswalk shall conform to any pertinent state or County regulations regarding crosswalk location and safety. As appropriate, final plans for the crosswalk shall incorporate features to help reduce conflicts between vehicles and pedestrians. Such features may include but are not limited to signage advising motorists of the crosswalk, lighting at the crosswalk, and the use of contrasting color and/or reflective paint to improve nighttime visibility of the crosswalk area.</p>	
Impact 4.13-2: Project Variant A would not allow for adequate stopping sight distance, thus creating a potential safety concern.	S	Mitigation Measure 4.13-2: If Project Variant A is ultimately selected and approved, the County Department of Conservation and Development and County Public Works Department shall verify that final plans reflect the inclusion of adequate sight distance to the west of the project driveway. This can be achieved by relocating the proposed perimeter wall from its current location to the same location as shown in the plan for Project Variant B (Figure 3-8) and keeping the area north of the wall free of potential visual obstructions (trees or other tall vegetation).	LTS

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measure	Level of Significance with Mitigation
Utilities and Service Systems			
Impact 4.14-1: The proposed sanctuary building would generate an increase in demand for water supply over existing uses on the project site.	S	Mitigation Measure 4.14-1: In the event of multiple drought years, the applicant shall comply with EMBUD’s Drought Management Program and reduce water usage by 20 percent. In the event of critical shortages (shortages of 25 percent or more), the applicant shall comply with reduction goals based on customer categories set by EBMUD.	LTS
Cumulative Impacts			
There would be no considerable contributions to cumulative impacts.			

Notes: LTS = Less Than Significant
 S = Significant

Source: Circlepoint, 2011.

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3.0 PROJECT DESCRIPTION

The New Sanctuary for Sufism Reoriented would develop a religious facility (sanctuary building) on an approximate 3-acre site in the Saranap neighborhood of unincorporated Walnut Creek/Contra Costa County (County). The applicant is Sufism Reoriented, a non-profit California religious corporation recognized by the State of California and the Federal government as a church.

The proposed 66,074-square-foot sanctuary building includes a prayer hall, administrative offices, a library/bookstore, classroom and art program space, and related ancillary features. Approximately 46,000 square feet of the building would be located below ground, including the administrative offices, library/bookstore, classroom, and art program space. The project site would be further developed with a plaza, parking area, and landscaping. See **subsection 3.4** for a detailed description of project components.

Sufism Reoriented currently operates from a building located at 1300 Boulevard Way, about 0.25 miles east of the project site. If the County approves the project and the applicant constructs the new sanctuary building, the applicant would cease its uses at 1300 Boulevard Way, and would sell or lease that property to another (thus far unknown) user.¹

The project would require approval of a conditional land use permit to allow the sanctuary to operate in a residential zone district, and would also require a minor subdivision to merge seven parcels that comprise the property into one lot.

An environmental impact report (EIR) will typically analyze a “project” in-depth, while analyzing a number of project “alternatives” at a more cursory level of detail. This draft EIR evaluates two Project Variants (A and B), which differ mainly in terms of improvements to the Boulevard Way right-of-way frontage. Where applicable, information is called out separately to evaluate differences between the Project Variants.

¹ The future use of 1300 Boulevard Way by any new user would be subject to the County’s normal procedures. Certain types of uses and/or any substantial change in use may be subject to further, separate environmental review at such time as any new use is proposed. For the purposes of this environmental review, it is assumed that the 1300 Boulevard Way building would be leased or sold to another spiritual organization and thus have operating characteristics generally similar to those of Sufism Reoriented.

3.1 LOCATION

Figure 3-1 shows the location of the project site, on the southeast corner of the intersection of Boulevard Way, Kinney Drive, and Garden Court.

The site is surrounded by single-family and multi-family development. A 36-unit multifamily building (known as “Le Boulevard”) is adjacent to the northeast of the project site. Single family residences border the eastern and southern project boundaries, while a mix of multiple and single-family uses are located across Boulevard Way to the west and north. The Boulevard Way corridor becomes increasingly commercial to the east as it approaches the City of Walnut Creek; and increasingly residential to the south towards Olympic Valley Road.

Figure 3-2 shows the seven separate lots that comprise the project site, corresponding to four street addresses:

- 1364, 1366, and 1384 Boulevard Way
- 11 White Horse Court (this address comprises four assessor parcels)

Together, the seven parcels comprise an irregularly shaped lot with frontage along Boulevard Way. Sufism Reoriented owns all seven parcels, and the project includes a request to merge these seven parcels into a single lot.

3.2 BACKGROUND

The applicant, Sufism Reoriented, is an American school of spiritual training established in 1952.² Sufism Reoriented is a nonprofit California religious corporation and is recognized by both the State of California and the government of the United States as a church.³ Sufism Reoriented formed when the leader of the Sufi Order in the western world, Murshida Rabia Martin, put her Sufi group under the direct spiritual guidance of Meher Baba. This shift in allegiance to Meher Baba caused a split in the American Sufi movement. The group that transferred their allegiance to Meher Baba was renamed “Sufism Reoriented” by Meher Baba in 1952.

At present, Sufism Reoriented has a total of two existing sanctuaries in the United States:

1. At 1300 Boulevard Way, approximately ¼ mile east of the project site, and

² Beloved Archives, Inc., Glow International. “Sufism Reoriented – Fifty Years Later” http://www.belovedarchives.org/glow_art0008_pf.html (March 26, 2009)

³ Documentation submitted by applicant and on file with the Department of Conservation and Development.

2. A center in the Washington, D.C. area.

According to Sufism Reoriented, the organization as a whole comprises approximately 500 members, all of whom reside in the United States. Approximately 350 of these members are affiliated with the Boulevard Way facility.

Sufism Reoriented states that new members join as adults, through a process of independent inquiry. Sufism Reoriented states that the organization does not proselytize (i.e., actively seek or encourage new membership). Sufism Reoriented reports that its local membership has been relatively stable since the mid-1980s, rarely deviating significantly above or below the current membership of about 350 people. Sufism Reoriented states that the overwhelming majority of its total area membership currently resides within a 2-mile radius of the proposed project site, with a vast majority of this membership residing within 0.5 miles.

Sufism Reoriented has occupied its 1300 Boulevard Way location for approximately 35 years. The current facility includes a meeting room capable of accommodating the full complement of Sufism Reoriented's local membership (i.e., about 350 people). The existing facility is currently used for multiple purposes, including a hall for prayer and worship, plus numerous supporting activities related to the organization's spiritual mission, including art, music, and video production, among other activities. At present, Sufism Reoriented conducts its worship services as well as many of these supporting activities in the same room. Some activities are performed off-site in private homes or have been postponed indefinitely due to the lack of space.

Sufism Reoriented has submitted a detailed assessment of the use of its current space and its goals and objectives for the proposed new sanctuary space. **Appendix B** contains this assessment. In this assessment, Sufism Reoriented states that the project is intended to consolidate its activities in disparate spaces within a single location in close proximity to the homes of its membership, in a sanctuary building whose aesthetic design is tied to the organization's spiritual mission.

Sufism Reoriented founded two schools that have been operating in the vicinity of the site for over 30 years, and which are now operated by an affiliated non-profit corporation. The schools, known as The Meher Schools (pre-school and K-5th grade), are non-sectarian and accredited by the Western Association of Schools and Colleges.⁴ According to the applicant, 93 percent of current students come from families who have no affiliation with Sufism Reoriented.

⁴ The Western Association of Schools and Colleges (WASC), a 501(c)(3) organization, is recognized as one of six regional associations that accredit public and private schools, colleges, and universities in the United States.

At present, Sufism Reoriented operates a spiritual literature bookstore in a space at The Meher Schools. Sufism Reoriented proposes to include a space for this bookstore on the lower level of its proposed new sanctuary building. No other activities associated with the schools would be transferred to the new sanctuary building.

3.3 SITE CHARACTERISTICS

The seven parcels comprising the project site include three single-family residences, accessory buildings, and the property on 11 White Horse Court known as the parsonage. Of the three single-family residences, two are renter-occupied, and one has been vacant for more than a year.

The project site is relatively flat, with a slight (2.5 percent) grade that generally descends to the east or north toward Boulevard Way.

The single family properties each have direct, independent access to Boulevard Way. The parsonage accesses Boulevard Way via White Horse Court, a private street. The parsonage also has a private driveway from Warren Road that utilizes an access easement through a neighboring private property (the Odell property).

The site includes 36 mature trees⁵, including native species such as coast live oak (*quercus agrifolia*) and valley oak (*quercus lobata*). An additional seven trees are located in the County public right-of-way along Boulevard Way. All 43 trees are proposed for removal.

An additional 11 trees are located on neighboring properties and have canopies that overhang onto the project site. None of these 11 trees would be removed, but the overhanging portions would be trimmed as part of project implementation.

Several trees are located along the private driveway providing access from Warren Road, through the Odell property. No improvements to this driveway are required as part of the project, but if Sufism Reoriented were to purchase the Odell property in the future, the County Fire Protection District would at that time require widening of this private driveway to 20 feet, which would likely result in removal of seven of these trees and possible damage to others. **Section 4.3 Biology** provides a complete discussion of this issue.

⁵ "mature" means a diameter at breast height measuring 6.5 inches or greater, or a circumference 20 inches or larger.

Land Use and Zoning Designations

The Contra Costa County General Plan (General Plan) designates the entire project site as Single-Family Residential – High Density (SH). All County General Plan residential land use designations (including all four available single-family designations) allow churches and other places of worship as secondary uses, as the County finds them “generally considered to be compatible” with residential development.

The Contra Costa County Zoning Map designates the entire site as Single-Family Residential (R-10). The Contra Costa County Zoning Code (Title 8, Contra Costa County Ordinance Code) states that religious uses are allowable in the R-10 zoning district (as well as all nine other single-family zoning districts) with the issuance of a land use permit.

3.4 PROJECT COMPONENTS

The project entails the construction of a 66,074-square-foot sanctuary building with associated uses detailed below.

Figure 3-3 shows the proposed site plan. About one-third of the sanctuary building’s area would be above grade, including the prayer hall, which would have seating for about 400 people. The remaining two-thirds of the sanctuary building’s area would be located underground, including a plaza and rotunda area, administrative offices, classroom, office, library, bookstore, kitchen, studios for art, music, and videos; and various other storage and ancillary/utility spaces.

Figure 3-4 shows several section drawings through the building from various perspectives, showing both above-ground and below-ground areas.

Figures 3-5 and **3-6** depict elevation views of the proposed facility. The proposed design includes thirteen domes arranged in a circular pattern, with heights ranging from 20 to 35 feet from existing grade. The plan includes at-grade skylights to provide natural light. The color scheme of the proposed building will feature a light color palette. The main entrance will be framed by a marble plaza with a reflecting pool. Sidewalks made of permeable pavers would circle the sanctuary building.

Program of Activities

The program of activities provides a basis for determining project-related impacts, including traffic. Table 3-1 below identifies the types of activities proposed. As the table indicates, many of Sufism Reoriented’s activities are seasonal, i.e., they are suspended during summer months. Further, many of the activities that attract substantial numbers of people are held on evenings and weekends. The largest single

event is the Annual Celebration, held over a 4-day weekend in March, when as many as 400 people (comprising members and invited guests) attend evening and weekend afternoon events.

Table 3-1 Program of Activities

Use/Activity	Time of Year	Day(s)	Time	Participants (Estimate)
Night Classes	October – June	Friday	8:00 PM to 9:30 PM	357
Annual Celebration	4 days total in the month of March	Friday - Monday	Fri: 8:00 PM to 10:00 PM Sat: 8:00 PM to 10:30 PM Sun: 2:00 PM to 5:00 PM Mon: 8:00 PM to 9:00 PM	200-400
Rehearsals for Annual Celebration	February and March	Every day	Weekdays: 8:00 PM to 10:00 PM Weekends: 9:00 AM to 5:00 PM	100
Devotional Gatherings	October – June	Sunday	8:00 PM to 9:00 PM	200-250
Taverns ^a	5 days total between October and June	Thursday - Monday	6:30 PM to 10:00 PM	175
Ancillary Activities: Administration, cleaning, landscaping, day classes, bookstore	Year-round	Every day	9:00 AM to 6:00 PM	25
Review Classes	October-June	Thursday	8:00 PM to 9:00 PM	30-50
Chorus Rehearsals	October-June	Wednesday	8:00 PM to 9:00 PM	70

^a “Taverns” is a cabaret style dinner and musical drama performance for members. Taverns are not concurrent with any other use. Friday Night Classes and Sunday Devotional Gatherings are suspended when Taverns take place.

Source: Sufism Reoriented, 2009.

Circulation

Figure 3-7 shows the three proposed access routes into the project site:

- **Primary Entry:** Boulevard Way, access to the main parking area.
- **Secondary Driveway:** Boulevard Way for emergency access.
- **Private Driveway:** connecting the parsonage to Warren Road, and also providing secondary access and emergency access.

The treatment of the public right-of-way along Boulevard Way was the subject of much discussion between the County and the applicant. As a result of these discussions, the

County Department of Community Development (DCD), the lead agency under CEQA, analyzed two Project Variants, which differ mainly in terms of improvements to the Boulevard Way right-of-way frontage:

- **Project Variant A** represents the project as proposed by the Applicant (**Figure 3-3**).
- **Project Variant B** represents the project with the inclusion of numerous right-of-way improvements (**Figure 3-8**).

Sections 4.1 – 4.14 of this EIR examine these two variants in-depth. Other than the treatment of the frontage along Boulevard Way, the Project Variants are identical or virtually identical in all other areas, including but not limited to the following:

- Project location and site
- Sanctuary building (building size, architectural design)
- Program of activities
- Transportation demand management (TDM) plan
- Parking area (number of spaces)
- Number and location of project driveways/access points
- Project objectives

Conceptualization of Project Variants

Contra Costa County Public Works Department (County PWD) reviewed the applicant's site plans for consistency with County standards and practices, particularly with regard to public right-of-way improvements. The County DCD, County PWD, and the applicant participated in an ongoing dialogue regarding proposed improvements to Boulevard Way immediately adjacent to the project site.

County PWD provided comments to the project applicant in a May 4, 2010 letter, attached as **Appendix D**. Project Variant B was developed in response to the following County PWD recommended conditions of approval:

- Expanding the north/east bound lane of Boulevard Way to 17 feet of total width, including a 12 foot travel lane and a 5 foot shoulder. (Project Variant A plans assume maintenance of the existing width.)
- Maintaining existing traffic controls at the intersection of Boulevard Way/Garden Court/Kinney Drive:
 - Boulevard Way: no controls
 - Garden Court: stop sign at Boulevard Way intersection

- Kinney Drive: stop sign for traffic moving eastbound at the Boulevard Way intersection.
- Construction of pedestrian improvements, including:
 - A 5-foot-wide sidewalk from the main driveway to Warren Road.⁶
 - Two crosswalks:
 - Across Garden Court, at its intersection with Boulevard Way and Kinney Drive
 - Across Boulevard Way, in a to-be-determined location between Garden Court and Molly Way.
- Addition of a bus pull-out area east of the main driveway
- Redesign of the Boulevard Way frontage to allow for adequate sight distance for vehicles exiting from the main driveway, assuming oncoming traffic is moving at a speed of 35 miles per hour (also known as a “design speed” or “sight distance” of 35 mph).⁷
 - To achieve a 35-mph sight distance, the proposed perimeter wall and landscaping need to be relocated about 30 feet further away from the Boulevard Way right-of-way.

The right-of-way improvements associated with Project Variant B have the potential to result in new physical environmental effects when compared to Project Variant A. These effects include impacts to the visual quality of the site and surrounding area, impacts to the stormwater drainage system, and differing effects on roadways and pedestrian facilities adjacent to the site.

Relevant technical sections of this EIR include parallel analyses of Project Variants A and B. **Table 3-2** summarizes key differences between the Project Variants A and B.

⁶ The project site does not extend to Warren Road. This recommended condition requires construction of a standard curb ramp and sidewalk within the public right-of-way of a neighboring parcel along Boulevard Way, requiring an encroachment permit from County PWD.

⁷ The posted speed limit on this portion of Boulevard Way is 25 miles per hour.

Table 3-2 Project Variants: Key Differences

	Existing Conditions	Project Variant A	Project Variant B
Width of Boulevard Way eastbound lane	12 feet	12 feet	17 feet (12 feet plus 5 foot shoulder)
Traffic Control at Blvd./Kinney/Garden	Stop sign at Kinney Road and Garden Court	No change	No change
Cross walks for pedestrians	None	None	New crosswalk across Boulevard Way, somewhere between Garden Court and Molly Way (location TBD)
Sidewalk Pedestrian Improvements	None	None proposed – but required along Boulevard Way frontage per Mitigation Measure 4.13-1.	Yes –along Boulevard Way frontage
Utility undergrounding and street lighting	Utilities above ground, no street lights along project frontage	None proposed	Utilities undergrounded, new streetlights installed per County standards.
Sight-distance setback	None	None proposed, but required per Mitigation Measure 4.13-2.	Yes
Bus Pullout	None	None	Yes

Source: Circlepoint, 2011.

Parking

Both Project Variants includes 71 automobile parking spaces in the main parking lot, and a 3-car garage at the parsonage, for a total of 74 parking spaces. The Contra Costa County Zoning Code (Zoning Code) establishes parking requirements for all land uses, and would typically require a total of 125 spaces for a facility of this type and size.

Section 82-32.008 of the Zoning Code states that any project may qualify for a smaller than required number of parking spaces, pursuant to County review, acceptance, and implementation of a Transportation Demand Management (TDM) program. Section 82-32.008(b) states that the conceptual TDM program submitted with a development application should identify the “measures that can be demonstrated to attain the trip reductions necessary to qualify for the requested parking reductions.”

Accordingly, Sufism Reoriented’s application includes a TDM program consistent with the aforementioned provisions of the Zoning Code. Given that the project site is in close proximity to Sufism Reoriented’s existing facility, the TDM program was based on actual field observations and takes into account the existing transportation network, the current addresses of the membership, and the travel choices utilized by the membership.

According to a map provided within its TDM plan, more than 220 Sufism Reoriented members reside within 0.5-mile of the proposed sanctuary building site, with the vast majority of these members residing less than 0.25-mile away. Owing to these relatively short travel distances, Sufism Reoriented’s TDM program emphasizes walking, biking, and carpooling. The TDM program includes a signed pledge from 167 members who reside within 0.5-mile of the proposed sanctuary building site to walk when they travel to the new site. In addition, the project also includes racks for 14 bicycles.

Sufism Reoriented provides additional “spillover” parking at the Meher Schools. During events that attract a significant component of the membership, Sufism Reoriented would operate a shuttle service between the Meher Schools and the new sanctuary building.

The TDM program would designate reserved parking spaces for carpools, and would require monitors during periods of substantial attendance to ensure on-site parking is limited to approved carpools. The program also includes provisions for ongoing reporting to DCD to ensure adherence to the TDM program for the duration of the proposed use.

Landscaping

Figure 3-9 shows the type and location of the proposed landscaping elements for Project Variant A. Project Variant A includes the removal of 43 existing mature trees (36 on-site trees and 7 trees off-site within the Boulevard Way right-of-way). Project Variant A proposes the planting of 165 new trees, each of which would be a minimum 24-inch box size, with a substantial number of trees at a 36-inch box size.⁸

⁸ A 24-inch box tree will typically range from 8 to 15 feet in height depending on tree species. A 36-inch box tree will have a slightly larger range of heights.

Project Variant B would be largely similar to Project Variant A in terms of the removal of trees from the project site. **Figure 3-10** depicts the landscaping plan for Project Variant B.⁹

The landscaping plans for both Project Variants would result in many trees being planted at the perimeter of the property. **Figures 3-9** and **3-10** call out these perimeter trees as primarily evergreen trees that do not drop foliage seasonally. After 3 to 6 years of growth, such trees would provide a degree of visual screening between the project site and adjacent properties and roadways. In addition, about half of the tree species called out in the landscaping plan are drought-tolerant and would thus not require substantial summer watering.

Lighting

Figure 3-11 shows the proposed lighting plan for Project Variant A.¹⁰ At nighttime, the walls and domes of the building, selected trees, pathways, and parking areas would be externally illuminated with a variety of low voltage landscape lighting, including path lights, uplight bullets, and well lights. In addition, the reflection pool would be illuminated via underwater lighting. Other lighting proposed includes wall-mounted utility lighting at the trash enclosure.

Storm Drainage

Under existing conditions, approximately 32 percent of the site is considered impervious, meaning rain water cannot penetrate into the soil. Impervious surfaces include existing buildings and paved or hardscaped areas. Moreover, the site does not include any storm water controls or storm water treatment facilities to naturally treat runoff during storm events. Storm water drains from the project site to three distinct areas: north towards Boulevard Way, southwesterly towards the intersection of Warren Road and Boulevard Way, and southeasterly towards a drain box near the private driveway leading to Warren Road.

⁹ **Figure 3-10** shows several proposed new trees within the Boulevard Way right-of-way area. If Project Variant B is ultimately selected for approval, no new trees would be permitted in the public right-of-way under County regulations.

¹⁰ A separate lighting plan based on Project Variant B was not developed. Under Project Variant B, new streetlights would be installed along the Boulevard Way frontage of the project area per County practice. The addition of streetlights would illuminate the project frontage along Boulevard Way right-of-way area in a manner consistent with other adjacent portions of Boulevard Way. Adherence to County lighting standards would ensure that any new lighting in the right-of-way would not substantially interfere with nighttime views.

Figure 3-12 shows the planned location of pervious materials and other features designed to receive storm water, such as flow-through planters and bio-retention swales. The site plan featured in **Figure 3-12** reflects Project Variant A; however, the features shown in **Figure 3-12** are applicable to both Project Variants. Stormwater drainage was specifically calculated by a registered engineer for both Project Variants. See **Appendix L** for detailed calculations of stormwater runoff resulting from each Project Variant.

Overall, the Project Variants would reduce the amount of impervious surface on the site from 32 percent (existing) to about 28 percent, primarily through the incorporation of pervious materials. The main parking area would include space for 11 cars on pervious concrete (i.e., concrete that can allow for a substantial amount of rainwater to infiltrate into the ground). The remainder of the parking area (60 spaces) would be finished with the pervious paving system which would allow grass to grow on the surface, giving it the appearance of a grassy area and allowing for rainwater infiltration. (The brand names of the materials are “EV Paver” and “Grasspave2.”¹¹ Where appropriate, these brand names are utilized throughout this Draft EIR).

The pervious concrete and Grasspave2 areas would be underlain by layers of sand and drain rock. **Figure 3-13** shows how proposed bio-filtration and percolation systems would operate. Areas with either pervious pavement or Grasspave2 are designed to be “self-retaining,” meaning that under typical storm events, such features would be able to receive storm water without substantial runoff. Because the underlying soils have a low permeability, project plans call for subdrains to be placed two inches above the bottom of the pavement sections. The first inch of rainfall would be retained below the subdrain where it can infiltrate into underlying soils and/or evaporate. Storm water runoff from the roof of the facility and the outdoor marble plaza would be directed to a 6-foot wide grassy swale in the southeast portion of the site, or into the in-ground planter on the north side of the building near the trash enclosure. According to the drainage report¹², proposed pervious surfaces and drain rock will have an infiltration capacity exceeding historic rainfall rates. This infiltration rate would allow for winter rains to adequately percolate on site. Further detail is provided in the Storm Water Control Plan in **Appendix M**.

Section 3.8, Hydrology and Water Quality, includes a full evaluation of both Project Variants.

¹¹ Technical specifications for both of these materials/systems can be found within the appendices of **Appendix L** (Drainage Report) of this Draft EIR. Further details of the Grasspave2 system can be found here: <http://www.invisiblestructures.com/grasspave2.html>

¹² See **Appendix L**, Drainage Report.

Mechanical Equipment and Accessory Uses

Exterior mechanical equipment, including an emergency generator and exterior heating, ventilation, and air conditioning (HVAC) unit, will be clustered within a contained outdoor area near the emergency access point along Boulevard Way and the trash enclosure. Both the containment and the trash enclosure would be screened by a concrete wall 6 feet in height. The applicant proposes a highly efficient HVAC system; the applicant's engineer estimates that this system will use 50 percent of the energy of a conventional HVAC system for an equivalent-sized building.

Utilities

County PWD will recommend conditions of approval requiring all existing and new utility distribution facilities (electric, communication, cable TV, etc.) be installed underground. This condition would exclude transformers, terminal boxes, and meter cabinets, all of which County PWD recommends placing outside any sidewalk area to the maximum extent feasible. At minimum, if undergrounding is not feasible, the placement of all above-ground utility facilities shall conform with requirements of the Americans with Disabilities Act (ADA), meaning minimal intrusion upon adjacent sidewalks.

Construction

Construction would commence with site clearance, include the aforementioned tree removal and the demolition of the three homes and accessory buildings fronting Boulevard Way. The parsonage building will be retained.

Two-thirds of the proposed sanctuary building (approximately 46,000 square feet) would be located below ground level, requiring the excavation and removal of approximately 43,000 cubic yards of soil. Assuming an average dump truck capacity of 13 cubic yards, this amount of excavation would require approximately 3,310 truckloads. Sufism Reoriented estimates that this amount of excavation can be completed in approximately 6 weeks (assuming a 5-day work week).

Figure 3-14 shows the anticipated route dump trucks would utilize in removing excavated soil. Soils from the site will be transported via Boulevard Way to State Route 24 and I-680 and onward to the Acme Landfill in Martinez. Assuming the project is approved and this EIR is certified, the County PWD would review and approve a final haul route plan as a ministerial approval.

The applicant estimates that 16 to 18 months would be necessary for construction, inclusive of excavation, grading, paving, building construction, and architectural coating.

3.5 PROJECT OBJECTIVES

Section 15124(b) of the CEQA Guidelines requires that the project description within an EIR include a statement of the project objectives. The applicant has identified the following objectives for the project:

- Create a new sanctuary that is of a size that can feasibly accommodate the activities of Sufism Reoriented in a manner that allows all activities to be conducted at one facility, without requiring some activities to be terminated or constrained to provide space for other activities
- Create a new sanctuary at a location that:
 - is within walking distance of at least 167 members of Sufism Reoriented who live near the existing facility and have pledged to walk to the facility
 - is in close proximity to all members, who need frequent and easy access to the sanctuary to conduct their religious activities
 - assures the continued viability of the Meher Schools (which were founded by Sufism Reoriented, represent the church's primary service project for the community, and depend upon the volunteer efforts of members of Sufism Reoriented), by locating the new sanctuary close enough to the schools to allow volunteers to travel easily between the schools, the new sanctuary and their homes
 - is large enough to allow the Spiritual Director's home to be on the same grounds as the church; and
 - can feasibly be accessed via the use of bicycles and other alternative transportation means.
- Develop a design for the new sanctuary so that:
 - the site that reflects the spiritual values of Sufism Reoriented, placing a strong emphasis on beauty, spaciousness and a sense of openness and light
 - the building creates a sacred space for worship and embodies the central symbols of Sufism Reoriented's faith, with design elements having spiritual significance
 - the buildings and landscaped grounds promote a sense of quiet and contemplation as an expression of faith
- Create a new facility and modern building that is compliant with current codes and that does not burden future members with costs that are excessive or not routinely imposed upon development in the area.

- Allow development that implements the General Plan land use designation for the site, in a manner that also recognizes the requirements of the Religious Land Use and Institutionalized Persons Act.

3.6 INTENDED USES OF THIS EIR

The EIR is intended to provide information to County decision makers and the general public about the nature and impacts of the project, including both Project Variants. The County is the Lead Agency under CEQA and is responsible for review and certification of the EIR. The Lead Agency is required to consider the information in this EIR, along with any other relevant information, in making its decision on the proposed project.

An EIR does not recommend approval or denial of a project by any authorized entity (such as a zoning administrator, a planning commission, or a board of supervisors).

Other agencies may also use this EIR in their review and approval processes. **Table 3-3** lists required permits and approvals for the project.

The environmental review and certification process includes:

- Publication and circulation of this Draft EIR for a 45-day public review period;
- Preparation of a Final EIR that includes written responses to comments received on the Draft EIR, and any errata or revisions to the Draft EIR.

The County must certify the Final EIR before taking any action to approve or deny the project.

Table 3-3 Agency Permits and Approvals

Public Agency	Permit, Approval or Review	Purpose
Contra Costa County	Land Use Permit	Provides entitlement authority for the proposed land uses under Chapter 82-6 of the Contra Costa County Ordinance Code
	TDM Program	Reduce automobile trips to and from the religious facility and the associated need for parking under Chapter 82-32 of the Contra Costa County Ordinance Code
	Lot merger (via Minor Subdivision approval) ^a	Provides for the merging of the separate lots of record into a single property (aka “reversion to acreage” under Division 924-4 of the Contra Costa County Ordinance Code)
	Ministerial Permits (Demolition, Grading, Building, haul route plan)	Ensures proposed plans comport with all pertinent regulations and any conditions of approval

Public Agency	Permit, Approval or Review	Purpose
	Encroachment Permit	Allows for County oversight of work completed within County right-of-way
	Tree Removal Permit	Allows for the removal of County protected trees
California Water Resources Control Board	National Pollutant Discharge Elimination System (NPDES) Construction General Permit (Storm Water Pollution Prevention Plan)	Allows stormwater discharges associated with construction activities to be regulated to ensure that water bodies are protected`.

Notes:

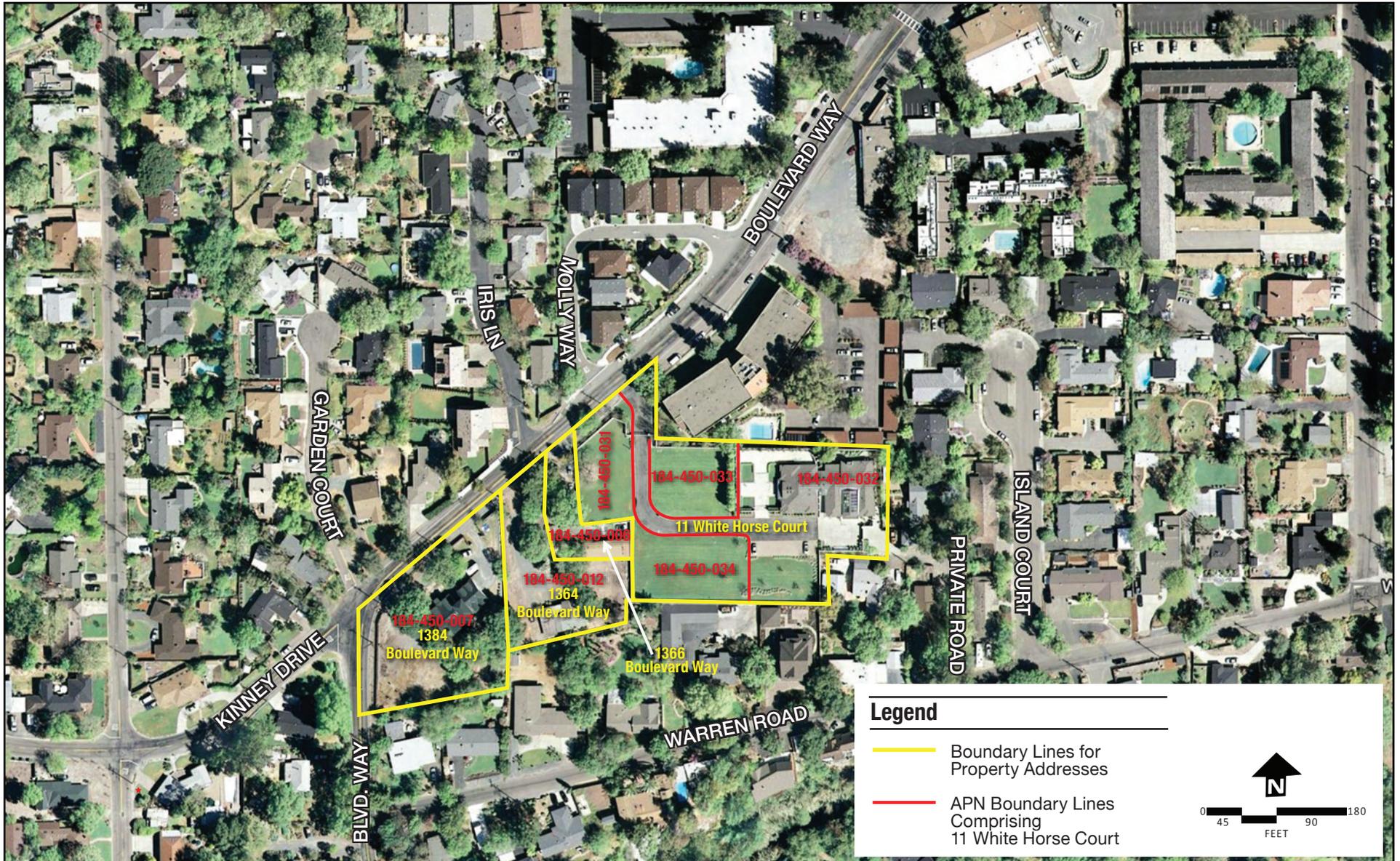
a The County considers a lot merger a "Minor Subdivision", as provisions for merging lots are provided in Title 9, Division 924 of the Contra Costa County Ordinance Code as well as in the State of California Subdivision Map Act (Government Code Section 66473 et seq.). Only a merging of lots is proposed as part of this project.

Source: Circlepoint, 2011.



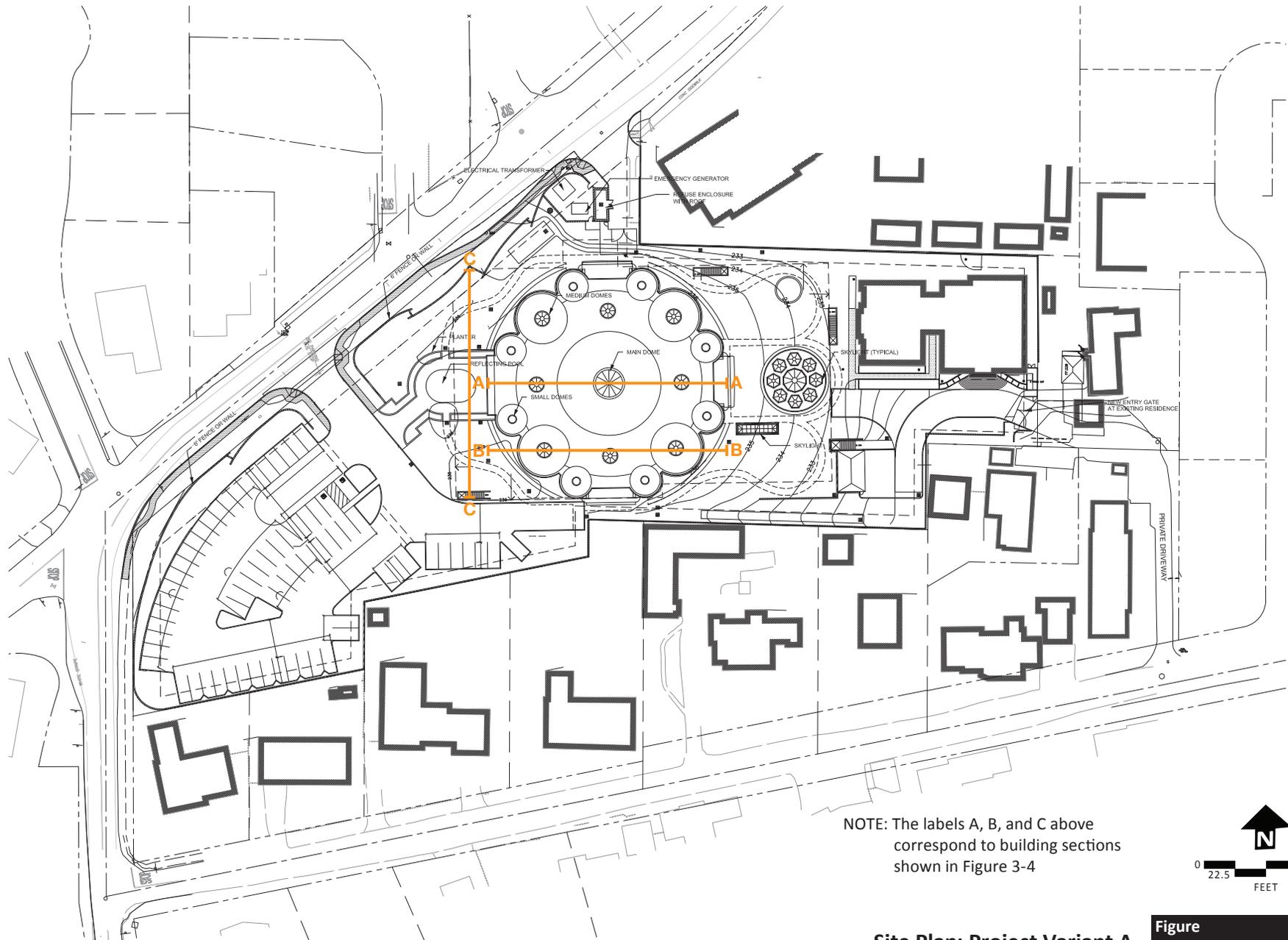
Project Location

Figure

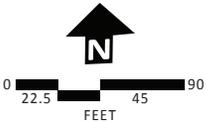


Existing Assessor's Parcel Numbers and Addresses

Figure

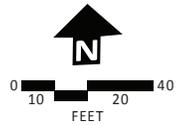
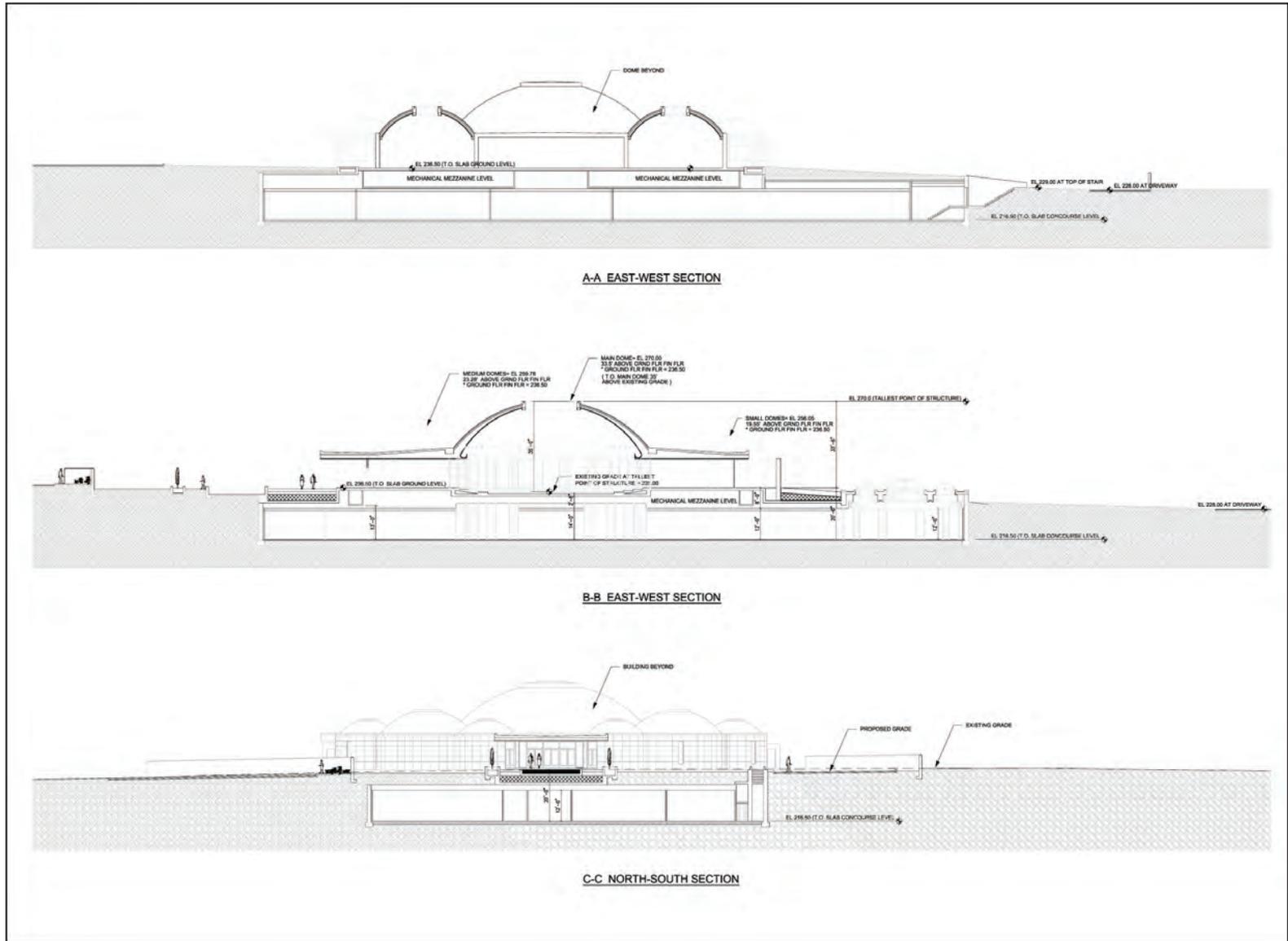


NOTE: The labels A, B, and C above correspond to building sections shown in Figure 3-4



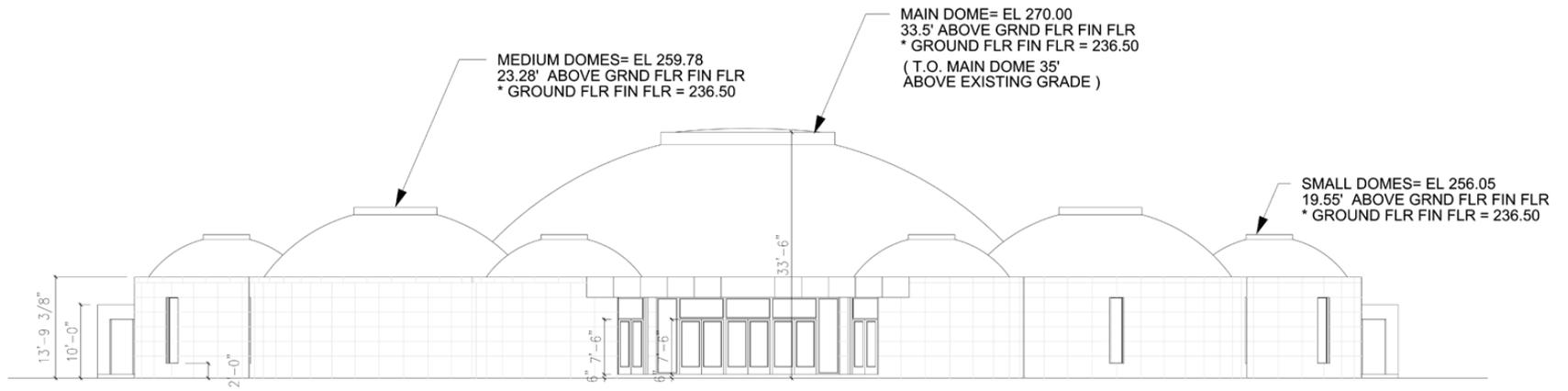
Site Plan: Project Variant A

Source: Philip Johnson/Alan Ritchie Architects, 2009.

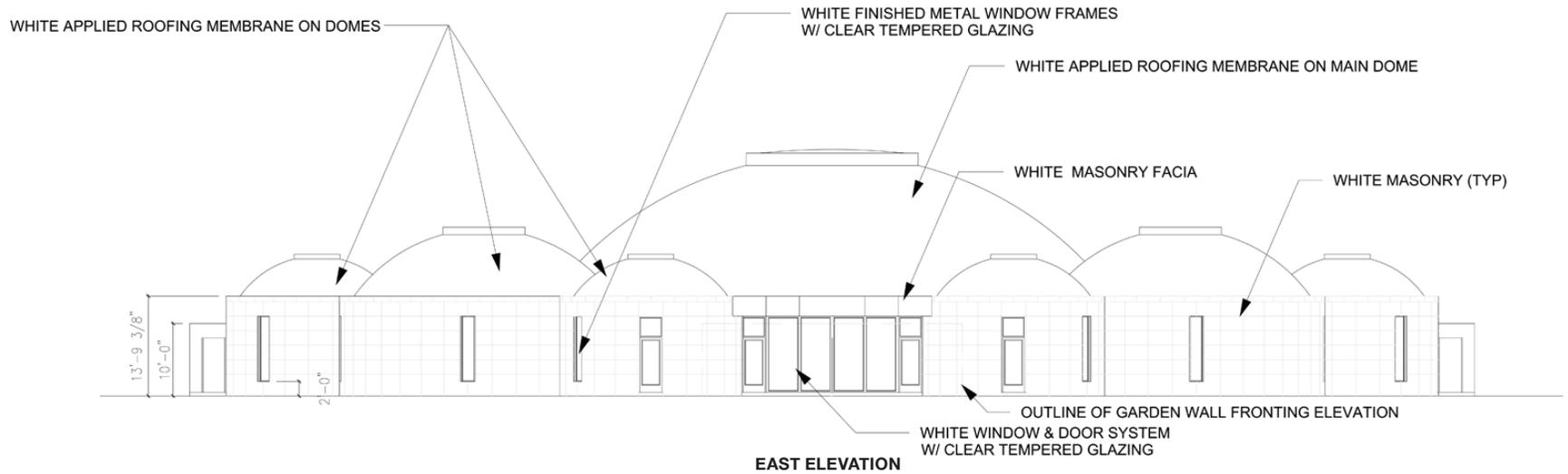


Building Sections

Figure



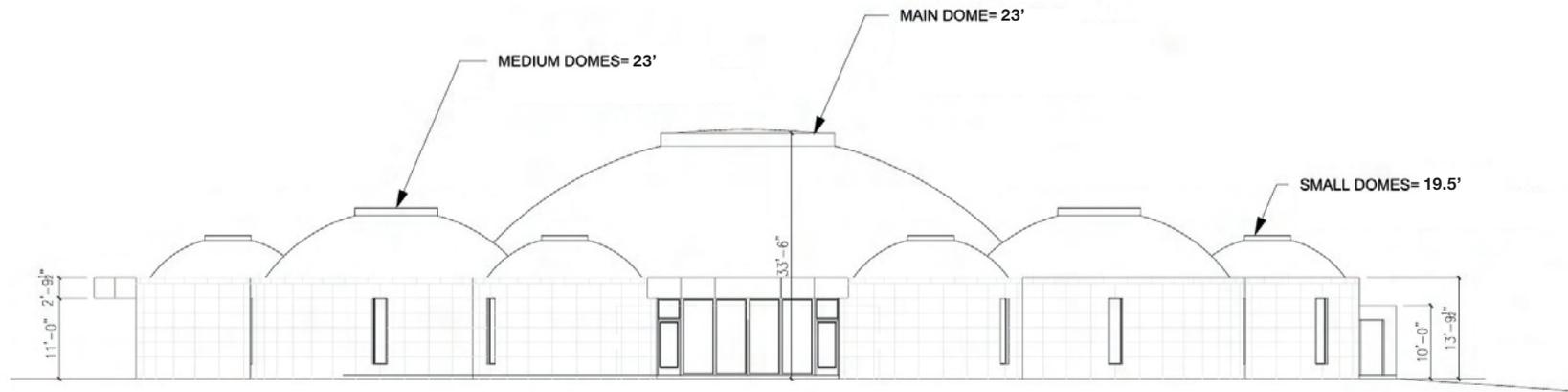
WEST ELEVATION



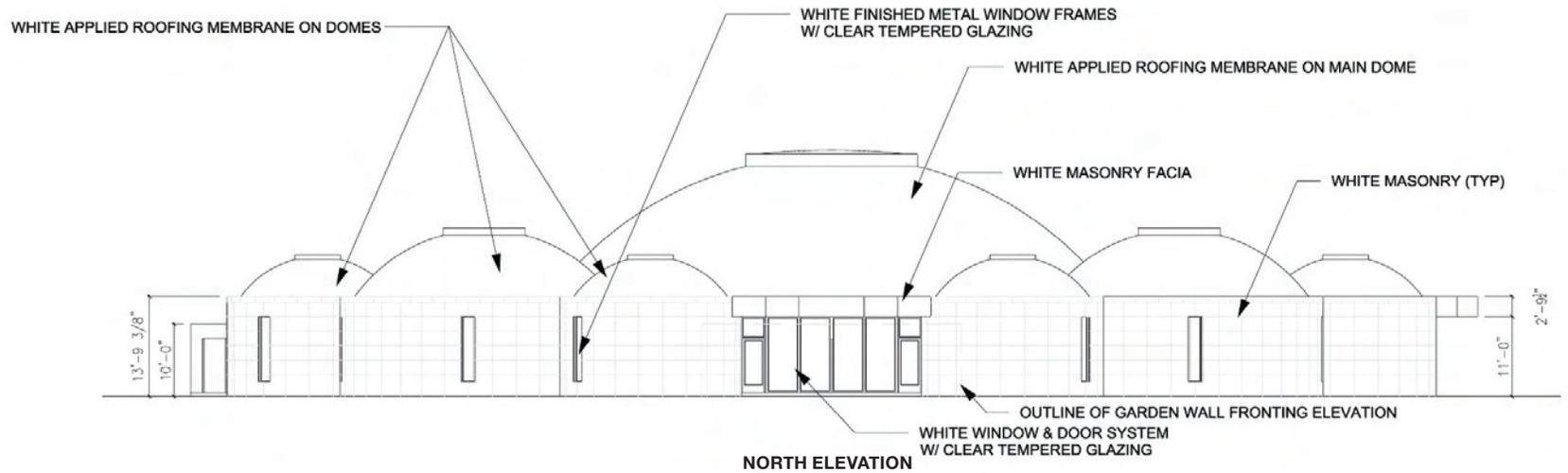
EAST ELEVATION

Building Profile - East and West Elevations

Figure



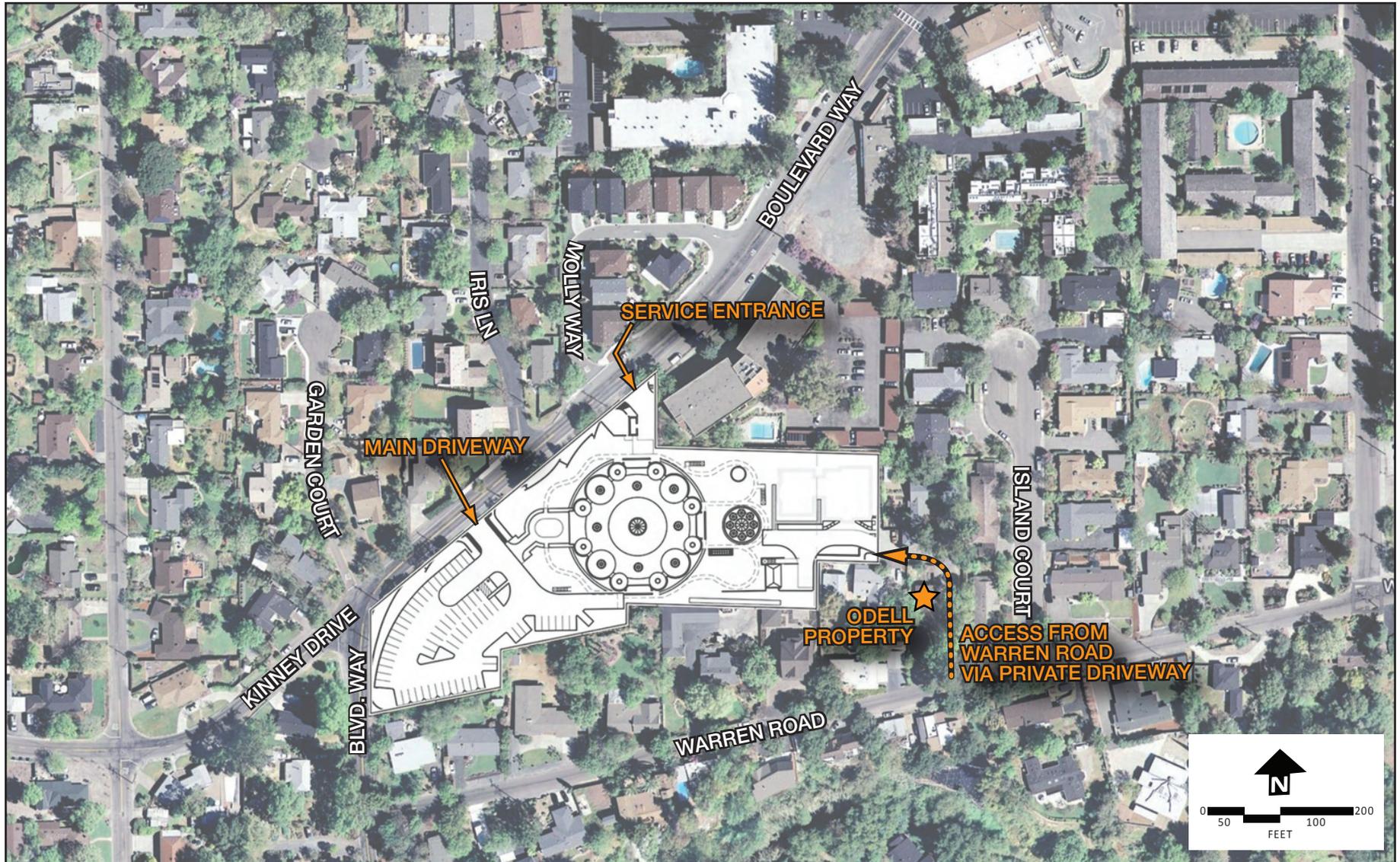
SOUTH ELEVATION



NORTH ELEVATION

Building Profile - North And South Elevations

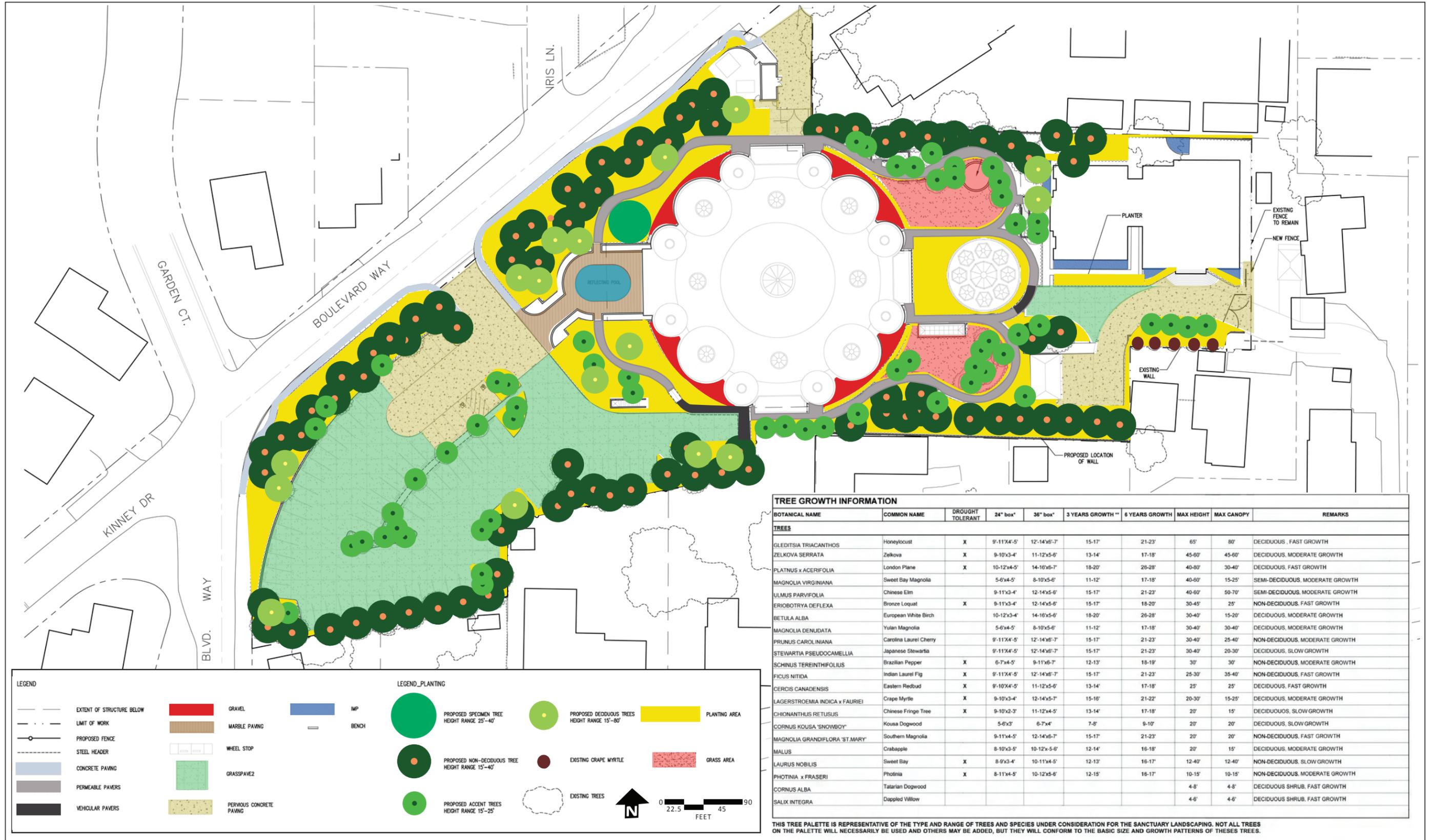
Figure



NOTE: Access points to the site are the same for Project Variant A and Project Variant B

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Figure 3-8 Site Plan: Project Variant B (back)



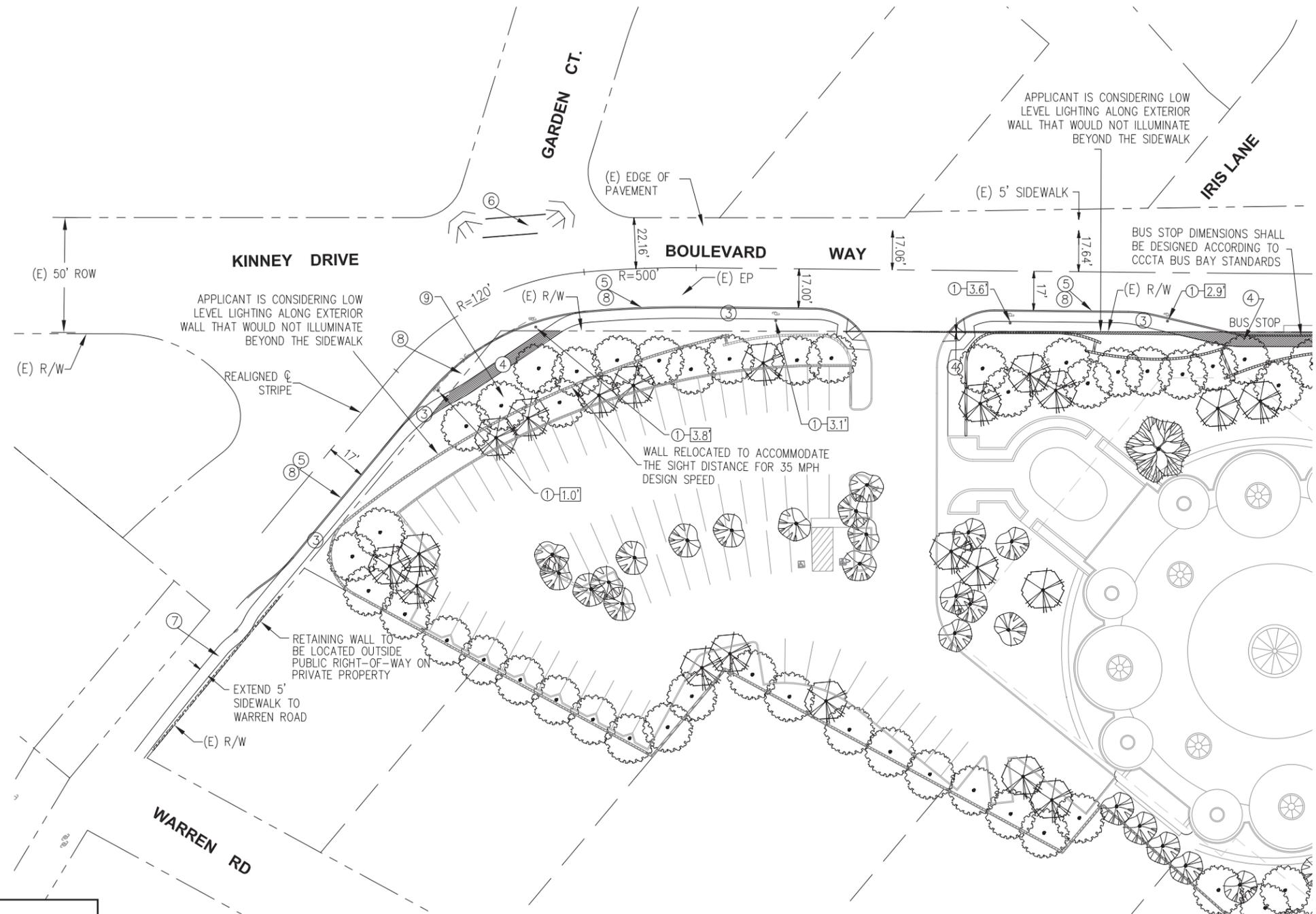
Landscape Plan: Project Variant A **Figure 3-9**

Source: Philip Johnson/Alan Ritchie Architects, 2008.

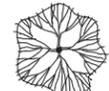
Figure 3-9 Landscaping Plan: Project Variant A (back)

NOTES:

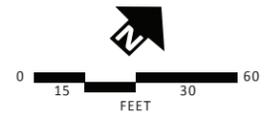
- ① POLE TO BE MOVED FOR MINIMUM 18" CLR OF F/C, DIST. POLE TO BE MOVED
- ② POLE TO REMAIN IN PLACE. CLEARS PROPOSED F/C BY MIN. 18"
- ③ PERVIOUS CONCRETE SIDEWALK
- ④ AREA TO BE DEDICATED
- ⑤ NO PARKING SIGNS W/RED CURB
- ⑥ CROSSWALK LOCATION TO BE DETERMINED BY PUBLIC WORKS DEPARTMENT
- ⑦ LOCATION OF 5' SIDEWALK SUBJECT TO DETERMINATION BY PUBLIC WORKS DEPARTMENT
- ⑧ STREET LIGHTING TO BE PROVIDED PER COUNTY STANDARD
- ⑨ TREE CANOPY HEIGHT TO MEET SIGHT DISTANCE REQUIREMENTS



Legend

- | | | | |
|---|---|---|--|
|  | Proposed Specimen Tree
Height Range 25' - 40' |  | Proposed Deciduous Trees
Height Range 15' - 80' |
|  | Proposed Non-Deciduous Tree
Height Range 15' - 40' |  | Proposed Accent Trees
Height Range 10' - 25' |

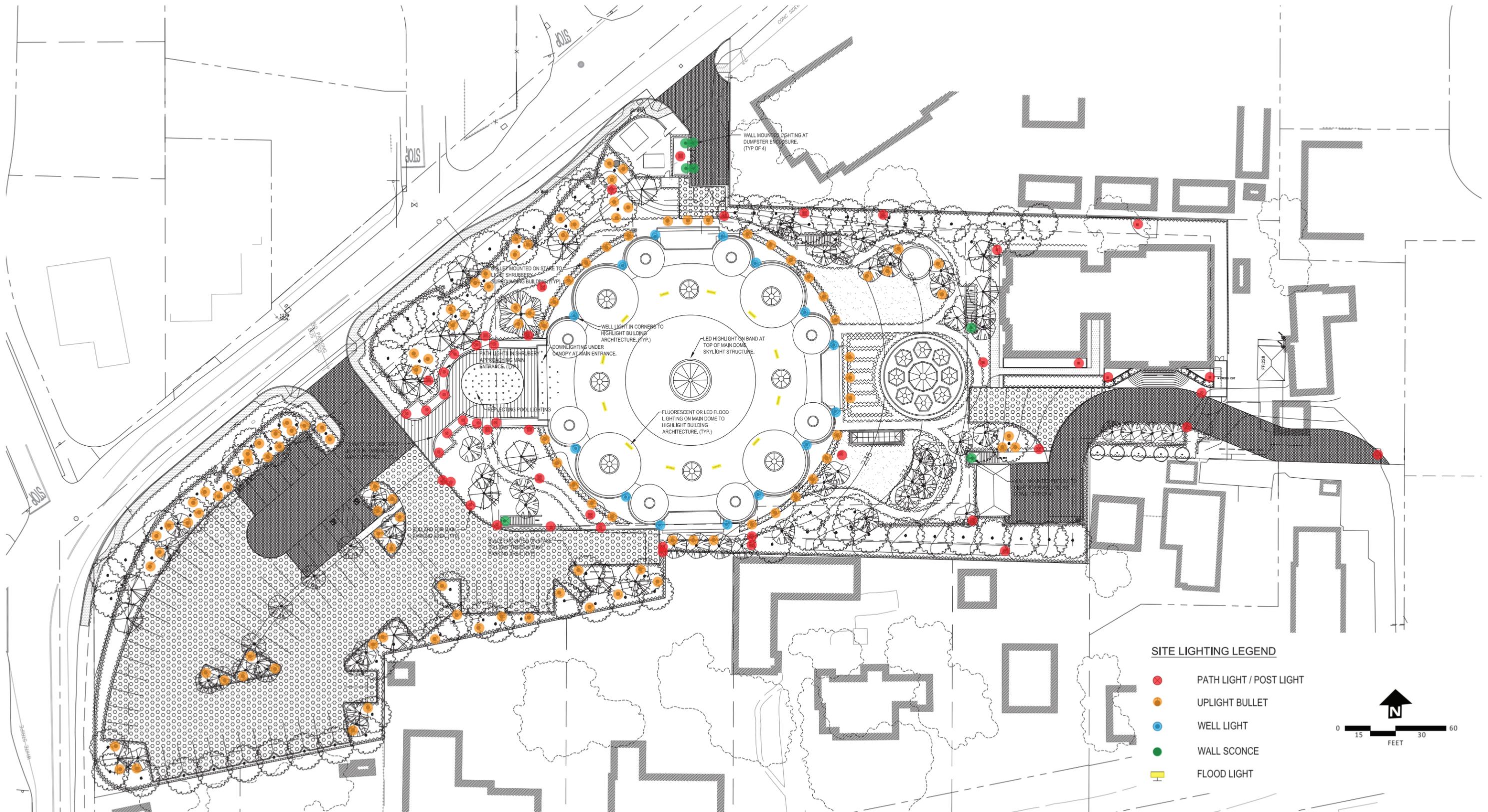
SEE FIGURE 3-9 FOR REMAINDER OF LANDSCAPING PLAN



Landscape Plan: Project Variant B

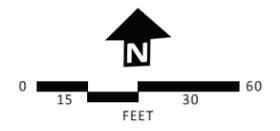
Figure

Figure 3-10 Landscaping Plan: Project Variant B (back)



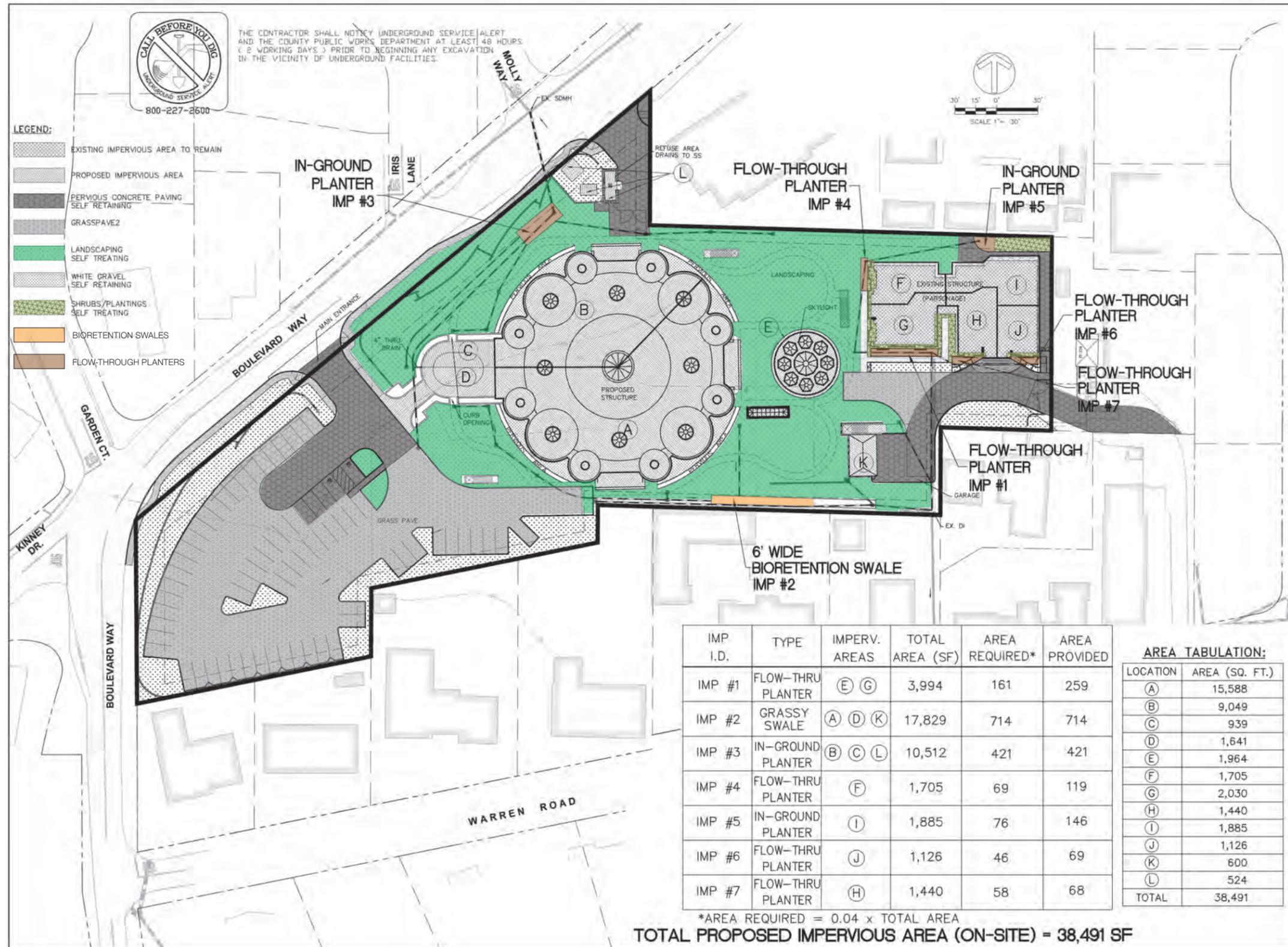
SITE LIGHTING LEGEND

- PATH LIGHT / POST LIGHT
- UPLIGHT BULLET
- WELL LIGHT
- WALL SCONCE
- ▭ FLOOD LIGHT



Lighting Plan Figure **3-11**

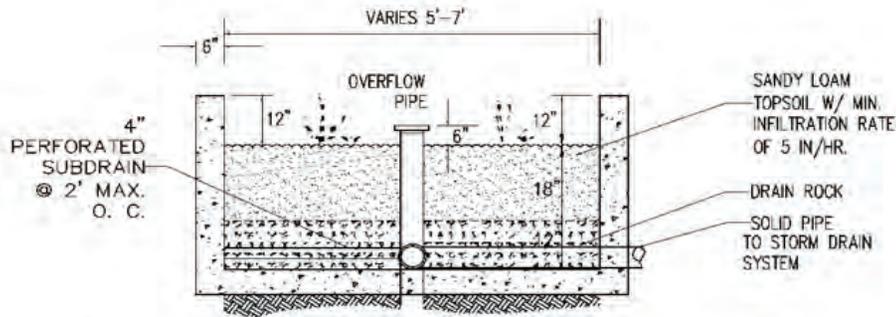
Figure 3-11 Lighting Plan (back)



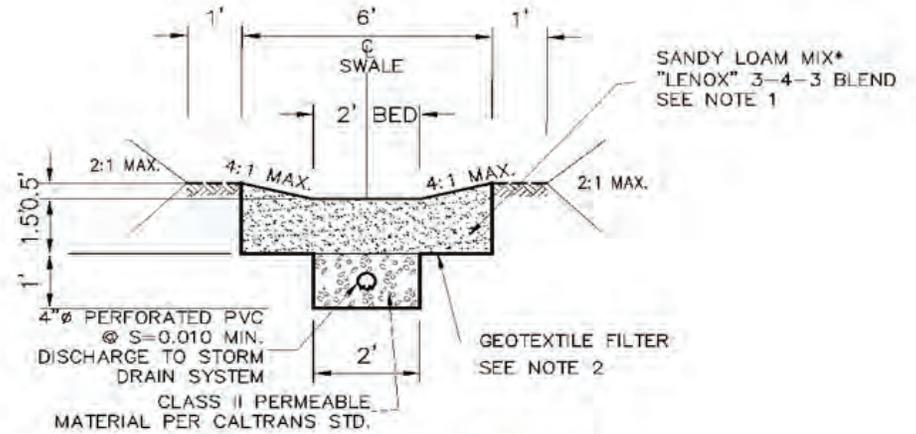
Stormwater Control Plan

Figure

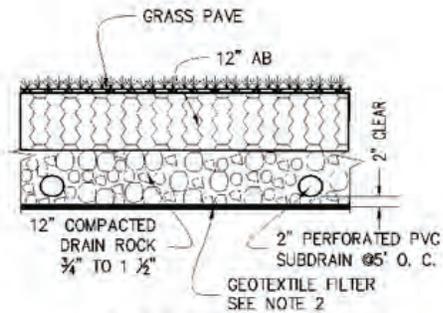
Figure 3-12 Stormwater Control Plan (back)



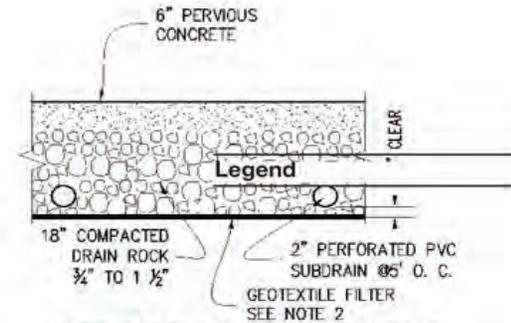
TYPICAL FLOW-THROUGH PLANTER
NOT TO SCALE



GRASSY SWALE SECTION
NOT TO SCALE



GRASSPAVE
NOT TO SCALE



PERVIOUS CONCRETE
NOT TO SCALE

4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter describes the existing conditions and evaluates the potential environmental impacts that would occur with development of the New Sanctuary for Sufism Reoriented. **Sections 4.1 through 4.14** of this chapter analyze each resource topic that could be affected by each Project Variants. Each subsection describes the environmental setting as it relates to the specific resource topic; the impacts that could result from implementation of either Project Variant; and mitigation measures that would avoid, reduce, or compensate for any significant impacts of either Project Variant.

ISSUES ADDRESSED IN THE DRAFT EIR

The following topics are addressed in this chapter:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Traffic and Circulation
- Utilities and Service Systems

Please see **Chapter 7, CEQA Required Discussions**, for summary analysis of environmental effects found to be not significant (in the areas of Agricultural and Forest Resources, Mineral Resources, and Recreation).

FORMAT OF ISSUE SECTIONS

In general, the analysis of each environmental issue consists of three subsections: Existing Conditions, Regulatory Setting, and Impacts and Mitigation Measures. An overview of the information included in these sections is provided below.

Existing Conditions

According to Section 15125(a) of the CEQA Guidelines, existing conditions are the physical environmental conditions in the vicinity of a project at the time the Notice of Preparation (NOP) is published. The NOP was published on March 9, 2010. Existing conditions include the operations of the facility at 1300 Boulevard Way. Neither Project Variant proposes any alterations to that facility, which will be sold or leased to another entity if the County approves either Project Variant.

Regulatory Setting

The regulatory setting section provides a description of the relevant regulations and guidelines that pertain to the issue area. This setting section may contain information from a variety of sources, such as the Contra Costa County General Plan, or other local, regional, state, or federal agency guidelines or regulations. A policy consistency analysis is also included, providing a brief evaluation and conformity with the applicable policies and regulations. These discussions are intended to comport with Section 15125(d) of the CEQA Guidelines, which requires EIRs to include a discussion of any inconsistencies between a proposed project and any pertinent adopted plan. Inconsistency with such policies is not necessarily a physical environmental impact.

Impacts and Mitigation Measures

The analysis of potential impacts begins with a listing of the applicable significance criteria, followed by an evaluation of impacts that would result from implementation of either Project Variant.

Significance Criteria

Under the California Environmental Quality Act (CEQA Section 21068), a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment. The CEQA guidelines direct that this determination be based on scientific and factual data. The significance criteria have been developed using Appendix G of the CEQA Guidelines as a foundation, with some refining of the criteria based on local regulations and other applicable federal, state, and local agencies' guidelines and regulations.

Evaluation of Impacts

The evaluation of impacts considers the significance criteria and the level of environmental impact, and makes a determination as to whether there is: “no impact,” a “less-than-significant impact,” or a “significant impact.” Therefore, this subsection is divided into three categories: Discussion of No Impacts, Discussion of Less-than-Significant Impacts, and Discussion of Significant Impacts.

Any identified impacts are numbered and shown in bold type. For significant impacts, mitigation measures are provided that would reduce the effects of these impacts. Following the discussion of mitigation measures, there is an evaluation of the “Significance after Mitigation.”

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4.1 AESTHETICS

This section addresses existing visual conditions in the project area, including the potential for either of the Project Variants to affect visual character and scenic views, or to introduce new sources of light and glare.

Although the applicant included numerous photo simulations of its proposal in its application to the County (many of which the applicant has featured in its communications), the County directed an independent consultant (Square One Productions) to prepare photorealistic visual simulations for this Draft EIR. These simulations are used to evaluate the Project Variants' effects on aesthetics pursuant to the CEQA Guidelines.

Appendix E contains a study the applicant submitted to the County regarding the potential for the proposed sanctuary building to result in daytime (solar) glare.

Numerous scoping comments expressed concern about the proposed visual qualities of the proposed sanctuary building. The comments inquired about effects related to night-time lighting, the potential for glare, the potential loss of views, and the overall visual character/visual quality of the neighborhood. The analysis addresses these and other aesthetic considerations in **subsection 4.1.3** below.

4.1.1 Existing Conditions

Regional Setting

The site is located between the cities of Walnut Creek and Lafayette, near the junction of State Route 24 and Interstate I-680. Prominent aesthetic features in this area include Mt. Diablo, which is located to the east and rises to an elevation 3,864 feet above mean sea level, and smaller ridgelines that are intermittently visible to the south and west.

Visual Character

Surrounding Area

The area in which the project site is located can be described as a mixed-character neighborhood. The area contains high-density residential units, single-family residential units, and commercial uses. Buildings in the project vicinity range from one to three stories in height, and represent a variety of architectural styles that reflect local building styles and trends of the past several decades. In general, surrounding development is characterized by lower-density residential to the west and south, higher-density residential to the north, and higher-density residential and commercial to the northeast

along Boulevard Way. One and two-story homes are located to the south along Warren Road. Adjacent development to the north and east includes Le Boulevard, a three-story, 36-unit wood-clad apartment building built in 1987, and newer townhomes across Boulevard Way (on Molly Way) that were built in 2002. Many properties include mature trees and landscaping.

Project Site

The parsonage property includes a well-maintained single-story building, bordered by a white masonry wall. Landscaping includes trees, pruned hedges, and an expansive green lawn.

The residence at 1364 Boulevard Way is a one-story structure that has been vacant for over one year and exhibits signs of deterioration.

The one-story home at 1366 Boulevard Way and the two-story home at 1384 Boulevard Way are both currently renter-occupied.

Mature vegetation and housing on the project site and on neighboring properties partially obscures views towards Mt. Diablo and other ridgelines to the south and west.

Figure 4.1-1 shows the location of viewpoints used in this analysis of aesthetic conditions. **Figure 4.1-2** shows the existing view from Molly Way, looking southeast towards the project site. The fence and access gate of the parsonage are visible in the foreground. Mature trees and one of the single-family residences are located in the background of this viewpoint.

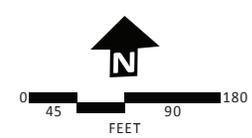
Figure 4.1-3 shows the existing view from the intersection of Boulevard Way and Kinney Drive, looking east towards the project site. This view of the project site is dominated by tall, mature trees, although a partial view of one of the existing residences is visible.

Figure 4.1-4 shows the existing view from Warren Road, looking north toward the project site. Views are limited by existing houses, fences, and mature trees.

Light and Glare

Lighting sources in the project area are typical of a lower density residential area, with exterior residential lighting, cars, and streetlights generating relatively low levels of night lighting. Lighting is more prevalent along the Boulevard Way frontage. The parsonage driveway (White Horse Court) is illuminated with floodlights during evening hours; these lights are visible from adjacent properties.

Sources of daytime glare can either be a direct source of light, or can be an object which reflects light from another source, such as windows. Existing sources of daytime glare in the project area include light reflected from building or car windows. External nighttime lighting from buildings and residences in the project area contribute low levels of nighttime glare.



Viewpoint Locations **Figure 4.1-1**

Source: Square One Productions, 2009.



Viewpoint 1: Existing View

Figure 4.1-2



Viewpoint 2: Existing View

Figure

4.1-3

Source: Square One Productions, 2009.



Viewpoint 3: Existing View

Figure 4.1-4

Source: Square One Productions, 2009.

4.1.2 Regulatory Setting

State Scenic Highways

The California Department of Transportation (Caltrans) has designated State Route 24 (SR 24) and Interstate 680 (I-680) as state scenic highways.¹ SR 24 eastbound lanes are located about 1,500 feet north of the project site. The SR 24/I-680 interchange is located about 0.5 miles northeast from the project site. The project site is not visible from either of these scenic highways.

Contra Costa County General Plan

The Open Space Element of the County General Plan includes a map of major scenic resources in the County. In general, major scenic resources are classified as scenic waterways or scenic ridgelines. Scenic ridgelines include Mt. Diablo located to the north east, and the east bay hills located to the south and west.

The Open Space Element of the General Plan contains the following policies relevant to the project:

Open Space Element

- 9-15: In order to conserve the scenic beauty of the County, developers shall be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damages to significant trees and other visual landmarks.
- 9-27: The appearance of the County shall be improved by eliminating negative features such as non-conforming signs and overhead utility lines, and by encouraging aesthetically designed facilities with adequate setbacks and landscaping.

Implementation 9-b: Carefully study and review any development projects which would have the potential to degrade the scenic qualities of major significant ridges in the County or the Bay and delta shoreline.

Policy Consistency Analysis

In reference to policy 9-15, finished site grading would conform to the existing gently-sloped topography of the land. As proposed, the project site would conform to required setbacks of the R-10 zoning district and would be landscaped with trees, shrubs, and planters. The proposed siting for the facility and the implementation of these landscaping features would be consistent with policies 9-15 and 9-27. With regard to

¹ http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed June 20, 2010.

Implementation Measure 9-b, the project site is well outside the viewshed of the Bay and Delta. As further discussed in **subsection 4.1.3**, the Project Variants would not adversely affect the character or quality of any scenic resources in the area.

4.1.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As identified in Appendix G, a project would have a significant impact to visual resources/aesthetics if it would:

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

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the four significance criteria stated above shows that no impacts would result for one of the criteria.

a) Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

SR 24 and I-680 are both designated as state scenic highways within the project area. The project site is located approximately 1,500 feet from SR 24, and approximately 2,500 feet from I-680, and would have no direct effect on trees, rock outcroppings, or historic resources visible within these corridors.

Furthermore, the site is not visible from either highway, due to intervening development, trees, and soundwalls. Therefore, neither of the Project Variants would affect views from these scenic corridors. No mitigation is necessary.

Discussion of Less-than-Significant Impacts

Analysis of plans and site characteristics in the context of the four significance criteria stated above shows that less-than significant impacts would result for two of the criteria.

b) Would the project have a substantial adverse effect on a scenic vista?

Neither of the Project Variants would adversely affect views of any designated scenic resources, as existing views are already partially or completely obscured and would remain so following implementation of either Project Variant.

Views of Mt. Diablo and other scenic ridges from Boulevard Way and Warren Road are almost entirely obscured by existing vegetation and buildings. From within the existing (private) parsonage site, partially obscured views of Mt. Diablo are available.

In the short term, either Project Variant would remove trees from the project site, which would temporarily broaden the extent of views towards area ridgelines. Over time, as proposed landscaping reaches maturity, views of area ridgelines would resemble existing conditions. Furthermore, the proposed landscaping plan has been designed specifically so that newly planted trees on the project site would provide veiling of the sanctuary building from off-site. No mitigation is necessary.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Both Project Variants would change the visual quality of the site during construction and operation, but neither would substantially degrade the quality or character of the site and its surroundings. Both Project Variants would include high quality construction, landscaping, and pedestrian improvements to the frontage of Boulevard Way that would enhance the public experience through the corridor.

Figures 4.1-5 through 4.1-7 simulate views of the Project Variants after five to six years of growth of proposed new trees and other landscaping.²

As shown in **Figure 4.1-5** (viewpoint 1), a solid white fence with new landscaped planters would replace the existing fence at the edge of the project site. Two domes would supplant the view of an existing residence on Warren Road. New trees planted in the foreground would partially obscure views of the sanctuary building.

² **Figures 4.1-6a and 4.1.6b** show the existing overhead power distribution utility lines in the simulation of Project Variant B. As set forth in Table 3-2, Project Variant B includes the undergrounding of utilities along Boulevard Way. Therefore, the inclusion of these overhead lines in the simulation of Project Variant B represents a “worst-case” visual scenario.

Figure 4.1-6a shows a simulation of Project Variant A from viewpoint 2, near the intersection of Boulevard Way and Kinney Drive. Similar to viewpoint 1, a solid white fence with new landscaped planters with shrubs would replace the existing fence at the edge of the project site. New trees planted on the project site, beyond the fence, would shield all internal views of the project site from this public viewpoint.

Figure 4.1-6b shows the visual simulation of Project Variant B from viewpoint 2, near the intersection of Boulevard Way and Kinney Drive. In Project Variant B, the wall shown in **Figure 4.1-6a** would be relocated about 30 feet closer to the proposed parking lot. The character of the view in **Figure 4.1-6b** shows a wider band of lawn/green space located in front of the proposed wall, including several new trees. This green space would have greater prominence owing to its larger size. Although plans call for trees to be planted in this area, County DCD notes that it customarily does not permit trees to be planted within the public right-of-way area. Accordingly, **Figure 4.1-6c** shows the same future, simulated view, but without the inclusion of trees.³

Figure 4.1-7 shows a view from Warren Road overlooking a stand-alone garage and the simulated project site. The roof of a sanctuary dome is visible in the background. The lower parts of the sanctuary would be partially screened by existing and proposed evergreen (non-deciduous) trees.

Analysis

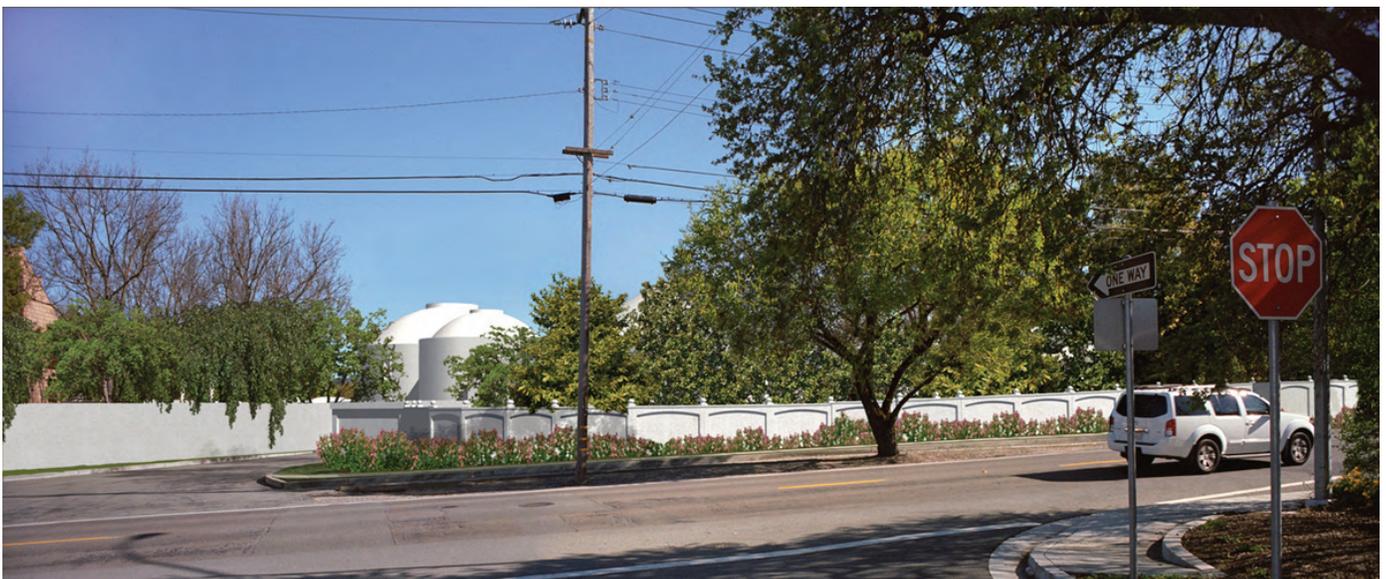
Taking into account all of the visual simulations, the Project Variants' effects on area visual quality vary somewhat by viewpoint. Both Project Variants propose high-quality landscaping and building design that differ in architectural style from other buildings in the area but would not degrade the visual character or quality of the site or its surroundings.

The tallest point of the the sanctuary building would be 35 feet, which is similar in height to nearby buildings, including the immediately adjacent Le Boulevard apartments.

³ **Figure 4.1-6c** most closely reflects the simulation of Project Variant A as modified by **Mitigation Measure 4.13-2**, which requires provision of adequate sight distance to the west of the proposed driveway. This entails the tucking back of the proposed perimeter wall similar to Project Variant B (see **Figure 3-8**).



Viewpoint 1: Existing View



Viewpoint 1: Simulated View

Viewpoint 1: Existing and Simulated View

Figure 4.1-5



Viewpoint 2: Existing View



Viewpoint 2: Project Variant A Simulated View

Viewpoint 2: Project Variant A Existing and Simulated View

Figure

4.1-6a



Viewpoint 2: Existing View



Viewpoint 2: Project Variant B Simulated View

Viewpoint 2: Project Variant B Existing and Simulated View

Figure 4.1-6b



Viewpoint 2: Existing View



Viewpoint 2: Project Variant B Simulated View without Street Trees

Viewpoint 2: Project Variant B Existing and Simulated View; No Trees in Public Right-of-Way Area

Figure

4.1-6C



Viewpoint 3: Existing View



Viewpoint 3: Simulated View

Viewpoint 3: Existing and Simulated View

Figure 4.1-7

Plans call for a total of 165 new trees on site, resulting in a net increase of more than 100 trees. Within six years, proposed landscaping would substantially shield most views of the sanctuary building from public vantage points. This is consistent with the visual character of Boulevard Way, which is currently flanked by dense vegetation to the south and west of the project site. This conclusion would not be substantially affected if County DCD includes a condition of approval that the landscaping plan be revised so as to remove any trees from the immediate Boulevard Way frontage. In this scenario, the trees behind the wall would remain visible, resulting in only a minor change to the resultant area visual character.

Drivers and pedestrians along Boulevard Way and Warren Road would have partial views of the proposed development, similar to the existing condition in which intermittent views of the site are accessible through the mature trees. For both Project Variants, the foreground view for drivers along Boulevard Way and Kinney Drive would be as shown in **Figures 4.1-6a, 4.1-6b, or 4.1-6c**. While the Project Variants would alter the visual character, the change is not considered to be substantially adverse.

The outdoor areas of the project site would be landscaped and tended in similar fashion to the grounds of the existing parsonage. Although the sanctuary building would be intermittently visible from public and private areas, the overall design of the Project Variants would not contribute to visual degradation of the surrounding area. Therefore, impacts to visual quality and character are considered less than significant. No mitigation is required.

Discussion of Significant Impacts

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views?

Impact 4.1-1: Either Project Variant would result in the potential for substantial nighttime lighting which could adversely affect nighttime views.

Potential for Daytime Glare

Appendix E includes a project-specific solar glare study prepared for the applicant by qualified professionals. The study includes a review of general literature regarding the phenomenon of glare and includes detailed review of the potential for the proposed sanctuary building to result in glare. Portions of the study are summarized below.

Fundamentals of Glare

There are several factors that affect the likelihood that an object will cause glare when lit by the sun. These factors include characteristics of the object that affect the direction and amount of reflection, the location of the object (such as the roof) in relationship to the sun's path, and the relationship between the object and the viewer. Each of these factors is described below in relation to the roof of the proposed sanctuary building.

The surface of an object determines whether sunlight would be reflected in a specular or diffuse manner. Specular reflection is mirror-like reflection that occurs when light hits smooth, polished or glossy surfaces that are highly reflective. Diffuse reflection occurs when incoming light hits rough or matte-finished surfaces and is reflected into different directions due to small irregularities in the surface. Diffuse reflection is less likely to cause glare than specular reflection.

Potential for Reflected Solar Glare

The roof of the proposed sanctuary building would receive the greatest amount of sunlight. Since the roof would be the most visible portion of the sanctuary, it is the feature most likely to cause glare.

The proposed white roofing membrane would exhibit primarily diffuse reflection. The white color of the roof would result in a higher percentage of light being reflected from the roof than if the roof were dark in color, yet the roof color would not have a direct effect on type of reflection (specular or diffuse) exhibited. Any object with reflective surfaces can exhibit specular reflection and cause glare, regardless of the object's color. Since the proposed roofing material would exhibit primarily diffuse reflection, it is unlikely that the roof would cause substantial glare for any viewer or receiver. The dome shape of the sanctuary building's roof would further reduce the likelihood of glare since light that reflects off of convex surfaces, such as domes, reflects in a divergent rather than concentrated and direct manner.

Not only would glare be minimal, but there are relatively few potential viewers of the proposed sanctuary building from the surrounding area and the limited views would be obstructed by vegetation and/or built structures. While temporary views of the sanctuary would be possible from the north, east and south until new vegetation has matured, new vegetation would screen most views within six years. As shown in the simulations presented in **Figures 4.1-5, 4.1-6a, 4.1-6b** and **4.1-7**, dense foliage would surround most of the site within six years. This vegetation would absorb daytime reflected light.

Views of the sanctuary after six years of tree growth include minor views from the north, views from the third story of the Le Boulevard apartment building to the northeast, and views from five residential properties that abut the project's southern boundary. As sunlight approaches the site primarily from the south, the south portion of the sanctuary roof would receive substantially more direct sunlight than the north portion. The sun would never be high enough in the sky to reflect light from the north side of the building. Therefore, there would be no views north of the project site subject to glare.

Five single-family residential properties adjacent to the project site's southern boundary would have potential views of the south side of the sanctuary building's roof. Most of these views would be substantially blocked by vegetation within six years of tree

growth. While the sanctuary roof may appear as a bright object during certain times of the day for remaining views from the south, it is unlikely that these views would receive glare from the proposed sanctuary given the characteristics of the roof described above.

Ground-level skylights also have the potential to cause glare. Potential views of ground-level skylights are limited to temporary views from the third story of Le Boulevard. As previously discussed, the sun would never be high enough in the sky to reflect light from the north side of these skylights towards Le Boulevard. Furthermore, these potential views would be almost entirely obstructed within six years by vegetation planted as part of the project. During the estimated six years of landscaping growth, the domes of the new sanctuary building would be somewhat more prominent on adjacent properties. However, given that the landscaping plan calls for large-sized, fast-growing trees in areas adjacent to existing single-family residential properties, any such impact would be minimal in nature.

In sum, the proposed roofing materials of the sanctuary would result in low reflectivity of daytime solar reflected glare and the number of potential receivers of daytime solar reflected glare would be minimal. Therefore, potential daytime glare from the roof of the proposed sanctuary would not be substantial and this impact is considered less-than-significant. No mitigation is required.

Potential for Substantial Nighttime Lighting

Figure 3-8 shows proposed lighting, including the illumination of both buildings and trees. The proposed lighting plan represents a change in area nighttime lighting relative to existing conditions. At present, the parsonage driveway is partially illuminated by floodlights. Plans would eliminate these existing floodlights and add new lighting of the parsonage building, the new sanctuary building, certain trees, pathways, parking areas, the reflecting pool, and the maintenance area. The lighting plan calls for LED flood lighting and/or fluorescent lighting for the top of the main dome; smaller domes would be lit from the ground with upward facing lighting.

Any nighttime lighting has the potential to result in “spillover” to adjacent properties. Spillover, if excessive, has the potential to adversely affect nighttime views and thus result in a significant impact under CEQA. The County has not adopted any standards relative to the measurement or control of such “spillover” lighting; nonetheless, CEQA compels the County to analyze projects for their potential to result in substantial light that adversely affects nighttime views.

The Project Variants include several features that would limit light trespass onto adjacent properties, including a perimeter wall and landscaping that, when mature, would block and/or diffuse light emanating from the project site. Preliminary plans indicate the lighting would be minimized and less than significant. However, a final lighting plan has not been prepared, so the impact is considered potentially significant.

Mitigation Measure 4.1-1: The applicant shall submit a lighting plan and a photometric study which shall demonstrate, to the satisfaction of the Department of Conservation and Development, that no bare bulbs will be visible from offsite. The plan shall also demonstrate that no lighting will be directed across property lines, and all lighting visible from offsite—including spillover onto adjacent properties—will be compatible with offsite private and public right-of-way lighting in the vicinity. The plans shall reflect the effect of lighting both before and after proposed site landscaping achieves maturity.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measures 4.1-1** would ensure that a lighting plan and photometric study are prepared that would prevent or minimize light spillover.

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4.2 AIR QUALITY

This section evaluates effects on air quality during both construction and long-term operations. The analysis is consistent with methodologies set forth in the Bay Area Air Quality Management District's (BAAQMD) CEQA Guidelines.

Information on existing conditions, federal and state ambient air quality standards, and pollutants of concern was obtained from the U.S. Environmental Protection Agency (U.S. EPA), the California Air Resources Board (ARB), and BAAQMD. **Appendix F** of this document includes calculations of Project Variant-related emissions.

For the purposes of this analysis, Project Variant A and Project Variant B were considered to have the same level of impacts to air quality as they would generate equal air pollutant emissions.

Several comments regarding air quality (specifically, construction-related impacts) were submitted to the County in response to the Notice of Preparation. The analysis in **subsection 4.2.3** below provides a detailed assessment of construction-period air quality impacts.

4.2.1 Existing Conditions

Physical Setting

The project site is located in the San Francisco Bay Area Air Basin (Air Basin). The proximity of the San Francisco Bay and Pacific Ocean has a moderating influence on the climate.

During the warmer months of the year from roughly May through October, moist air is often condensed into fog or stratus clouds by the cool Pacific Ocean. When strong high pressure systems develop over the region in late spring and summer, the resulting warm conditions and a weak or non-existent marine inversion create clear skies and relatively stable atmospheric conditions.

In the winter, high pressure over the eastern Pacific weakens and generally shifts south, allowing transitional weather systems associated with the polar jet stream to affect northern California on a regular basis. Low pressure systems produce periods of cloudiness, strong shifting winds, and precipitation. The project area receives about 20 inches of precipitation annually, with about 90 percent of this rainfall occurring between November and April. Fog and haze are also common during winter, when high-pressure systems influence the weather.

During the fall and winter months, the high pressure condition over the interior regions of the western United States (known as the Great Basin High) can produce extended periods of light winds and low-level temperature inversions. This condition is frequently characterized by poor atmospheric mixing resulting in degraded regional air quality.

Criteria Air Pollutants and Effects

Air quality studies generally focus on five pollutants that are most commonly measured and regulated:

- Carbon monoxide (CO)
- Ozone (O₃)
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Suspended particulate matter (PM), including PM₁₀ and PM_{2.5}

Table 4.2-1 provides details regarding the characteristics, health effects, and sources of these pollutants.

Toxic Air Contaminants

Toxic Air Contaminants (TACs), as identified under the California Clean Air Act, are a broad class of compounds known to cause cancer and contribute to mortality. TACs include, but are not limited to, the criteria air pollutants listed in **Table 4.2-1**. TACs tend to be localized, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations. Although they exist in relatively low concentrations in ambient air, they are regulated at the federal, state, and local levels because chronic exposure can result in adverse health effects.

Diesel exhaust is the predominant TAC in urban air, and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles, which complicates the evaluation of its health effects. The ARB previously identified some of the chemicals in diesel exhaust (including benzene and formaldehyde) as TACs; they are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants program. To reduce diesel particulates, California has adopted a comprehensive diesel risk-reduction program to reduce diesel particulate matter emissions by 85 percent by 2020. In 2006, the U.S. EPA also enacted low-sulfur diesel fuel standards for delivery and transport trucks that are expected to reduce diesel particulate matter substantially.

Table 4.2-1 Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Source
Carbon Monoxide (CO)	<p>Non-reactive, colorless and odorless gas that dissipates relatively quickly; ambient CO concentrations generally located near vehicular traffic.</p> <p>Highest CO concentrations measured in the Bay Area are recorded during the winter.</p>	<ul style="list-style-type: none"> ■ Impairment of oxygen transport in the bloodstream ■ Aggravation of cardiovascular disease ■ Fatigue, headache, confusion, dizziness ■ Can be fatal in the case of very high concentrations 	<p>Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.</p>
Ozone (O ₃)	<p>Colorless toxic gas and the chief component of urban smog.</p> <p>Present in relatively high concentrations within portions of the Bay Area; highest concentrations occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies.</p>	<ul style="list-style-type: none"> ■ Eye Irritation ■ Respiratory function impairment 	<p>Although not directly emitted from a particular source, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and nitrogen oxides (NO_x) under sunlight; ROG and NO_x are primarily emitted from automobiles, and industrial sources.</p>
Nitrogen Dioxide (NO ₂)	<p>Reddish-brown gas that irritates the lungs; NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation; NO₂ also contributes to the formation of PM₁₀.</p> <p>Levels of NO₂ in the Bay Area are relatively low.</p>	<ul style="list-style-type: none"> ■ Increased risk of acute and chronic respiratory disease 	<p>Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.</p>
Sulfur Dioxide (SO ₂)	<p>Primarily SO₂, sulfur oxides are colorless gases with a pungent, irritating odor</p> <p>Due to the lack of sources, levels of SO₂ in the Bay Area are relatively low</p>	<ul style="list-style-type: none"> ■ Aggravation of chronic obstructive lung disease ■ Increased risk of acute and chronic respiratory disease 	<p>Diesel vehicle exhaust, oil- and coal-burning power plants, industrial processes.</p>
Particulate Matter (PM _{2.5} / PM ₁₀)	<p>Very small liquid and solid particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals; can produce haze and reduce regional visibility.</p> <p>PM₁₀: Particulate matter less than 10 microns in diameter, about one-seventh the thickness of a human hair.</p> <p>PM_{2.5}: Particulate matter 2.5 microns or less in diameter.</p>	<ul style="list-style-type: none"> ■ Aggravation of chronic disease and heart/lung disease symptoms 	<p>Combustion, factories, construction, grading, demolition agricultural activities, woodstoves and fireplaces, and automobiles.</p>

Source: BAAQMD, 2010c.

Smoke from residential wood combustion can also be a source of TACs. Wood smoke is typically emitted during the winter months when dispersion conditions are poor. Localized concentrations of TACs can result when cold stagnant air traps smoke near the ground and there is no wind. This pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke contains significant amount of PM₁₀ and PM_{2.5}, and is implicated in worsening asthma and other chronic lung problems.

Typical TACs measured by BAAQMD in the project area include benzene, 1,3-butadiene, carbon tetrachloride, chloroform, ethylene dibromide, ethylene dichloride, methyl tert butyl ether (MTBE), methylene chloride, acetaldehyde, perchloroethylene, toluene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons (PAH). Since the ambient concentrations of these TACs are very small, they are measured and reported as parts per billion (ppb), or nanograms per cubic meter (ng/m³) on a volume basis.

Table 4.2-2 lists sources of the major TACs in the project area. As shown, primary sources of TACs in the project area include fuel combustion in cars, trucks, buses, and construction equipment.

Bay Area cancer risks represent the number of excess cancer cases per million people based on a lifetime exposure (70-year) to the annual average concentration in the Bay Area. ARB published maps showing the 2001 total inhalation health risk in the State. According to cancer risk maps prepared by BAAQMD, the 2005 inhalation health risk in the Bay Area is an average of 460 cases per million. More densely populated urban areas, such as San Francisco, Oakland, and San Jose had health risks of nearly 1,000 cases per million. It should be noted, however, that the health risks are based on the average concentration for the entire air basin and the health risk at individual locations will vary considerably. Since 1990, average concentrations of TACs and associated health risks have been reduced by about 50 percent for most compounds.

Table 4.2-2 Toxic Air Contaminants in the Project Area

Toxic Air Contaminant	Source of Emission
Diesel Particulate Matter (DPM)	Heavy-duty trucks, buses, construction equipment, and electrical generation.
1,3 Butadiene	Primarily on-road vehicles. Like CO, older model vehicles without adequate catalytic converters have much higher emission rates.
Benzene	Primarily on-road motor vehicles and gasoline evaporation.
Formaldehyde	Emitted both directly and indirectly into the atmosphere. Sources of emissions leading to elevated formaldehyde levels are fuel combustion from a variety of mobile and stationary sources, such as motor vehicle operations.

Source: BAAQMD, 2010c.

Sensitive Receptors

Sensitive receptors include people and locations where individuals are particularly susceptible to the adverse effects of air pollution. According to ARB, sensitive receptors include children under 14, people over 65, athletes (of any age), and people with cardiovascular and chronic respiratory diseases. Locations that contain a high concentration of these sensitive population groups include residential neighborhoods, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. Both state and national ambient air quality standards were developed with the intent to protect sensitive receptors from the adverse impacts of air pollution.

Sensitive receptors within close proximity to the project site include people living in adjacent and nearby residences.

Odors

Offensive odors can be very unpleasant, leading to considerable distress among the public, and often generate citizen complaints to local governments and the BAAQMD. Offensive odors are typically associated with wastewater treatment plants, sanitary landfills, feedlots and dairies, and industrial facilities. The occurrence and severity of odor problems depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptor(s). No such facilities or any other sources of offensive odors are located in proximity to the project site.

4.2.2 Regulatory Setting

United States Environmental Protection Agency (U.S. EPA)

The U.S. EPA is responsible for enforcing the Federal Clean Air Act (CAA). The U.S. EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by ARB.

California Clean Air Act and California Air Resources Board

ARB, part of the California Environmental Protection Agency (CalEPA), oversees state efforts to achieve pertinent requirements of the Federal CAA, administers the California Clean Air Act, and maintains the California Ambient Air Quality Standards (CAAQS).

The California CAA requires all air districts in the state to endeavor to achieve and maintain CAAQS. ARB regulates mobile air pollution sources, such as motor vehicles, and is responsible for setting emission standards for vehicles sold in California for other emission sources, such as consumer products, and for certain off-road equipment. ARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn prepare air quality attainment plans at the regional level. ARB also conducts or supports research on the effects of air pollution on the public and develops innovative approaches to reduce air pollutant emissions.

National and State Ambient Air Quality Standards

Ambient Air Quality Standards

Air quality is described by the concentration of various pollutants in the atmosphere. The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, and the topography of the given air basin. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The U.S. EPA has established NAAQS for seven major air pollutants: CO, NO_x, O₃, PM₁₀, PM_{2.5}, SO_x, and lead. State ambient air quality standards (CAAQS) are generally more stringent than the corresponding federal standards. **Table 4.2-3** presents both state and federal ambient air quality standards, which are designed to ensure that public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population. The “primary” standards have been established to protect the public health.

Table 4.2-3 California and National Ambient Air Quality Standards

Pollutant	Average Timing	Federal		California	
		Standards Primary ¹	Attainment Status	Standards	Attainment Status
Ozone	1-hour	--		0.09 ppm	N
	8-hour	0.075 ppm	N	0.07 ppm	N
Carbon Monoxide	1-hour	35.0 ppm	A	20.0 ppm	A
	8-hour	9.0 ppm	A	9.0 ppm	A
Nitrogen Dioxide	Annual	0.053 ppm	A	0.03 ppm	
	1-hour	0.100 ppm	U	0.18 ppm	A
Sulfur Dioxide	24-hour	--	A	0.04 ppm	A
	1-hour	0.075	A	0.25 ppm	A
PM ₁₀	Annual	--		20 µg/m ³	N
	24-hour	150 µg/m ³	U	50 µg/m ³	N
PM _{2.5}	Annual	15 µg/m ³	A	12 µg/m ³	N
	24-hour ²	35 µg/m ³	N	--	
Lead	30-Day Average	n/a		1.5 µg/m ³	A
	Calendar Quarter	1.5 µg/m ³	A	--	
Sulfates	24-hour	n/a		25 µg/m ³	A
Hydrogen Sulfide	1-hour	n/a		0.03 ppm	U
Vinyl Chloride (chloroethene)	24-hour	n/a		0.01 ppm	n/a
Visibility Reducing Particles	8-hour	n/a		Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more due to particles when relative humidity is less than 70 %	U

Notes:

A = Attainment; N= Non-attainment; U = Unclassified

ppm = parts per million; µg/m³= micrograms per cubic meter; n/a = not applicable

¹Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

²U.S EPA lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006. EPA designated the Bay Area as nonattainment of the PM_{2.5} standard on October 8, 2009. The effective date of the designation is December 14, 2009 and the Air District has three years to develop a plan, called a State Implementation Plan (SIP), that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new PM_{2.5} standard must be submitted to the US EPA by December 14, 2012.

Source: BAAQMD, 2010a.

Attainment Status

Areas that violate standards are considered to be in “nonattainment.” Areas that do not violate standards are considered to be in “attainment.” Federal regulations also include a designation known as “unclassified,” which identifies areas where data are incomplete and do not support a designation of attainment or non-attainment.

Ozone (O₃): The Bay Area as a whole is in nonattainment for ground level O₃, per both state and federal standards. The Bay Area also is classified as in marginal nonattainment according to the federal 2004 8-hour O₃ standard.

The U.S. EPA lowered the federal 8-hour ozone standard effective May 27, 2008. By July 31, 2011, the U.S. EPA is expected to issue final designations based on the new standard.

Carbon Monoxide (CO): The Bay Area has met the CO standards for over a decade and is classified as in attainment by the U.S. EPA.

PM₁₀ and PM_{2.5}: The Bay Area is classified as nonattainment for PM₁₀ and PM_{2.5} according to state standards. The U.S. EPA grades the region unclassified PM₁₀ and PM_{2.5}.

Other Pollutants: The U.S. EPA and the state grade the region in attainment or unclassified for all other air pollutants.

Bay Area Air Quality Management District

The BAAQMD is primarily responsible for assuring that the national and state ambient air quality standards are attained and maintained in the Bay Area. BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. BAAQMD has jurisdiction over much of the nine-county Bay Area counties, including Contra Costa County.

Air Monitoring Data

The BAAQMD monitors air quality conditions at more than 30 locations throughout the Bay Area. The closest monitoring station to the project area is in the City of Concord, approximately 4 miles northeast of the project area.

Table 4.2-4 shows the number of days per year that air pollutant levels exceeded state or nation standards from 2007 to 2009 at the Concord monitoring station in particular and all Bay Area monitoring stations on average.

As shown in **Table 4.2-4**, all federal ambient air quality standards were met in the project area with the exception of the 8-hour ozone standard and the 24-hour PM_{2.5} standard. The state 1-hour ozone standard was exceeded once in 2007, three times in 2008, and twice in 2009. The state 8-hour ozone standard was exceeded four times in 2007, eight times in 2008, and five times in 2009. The state standards of PM₁₀ were exceeded twice in 2007 and once in 2008.

Table 4.2-4 Annual Number of Days Exceeding Ambient Air Quality Standards

Pollutant	Standard	Monitoring Station	Days Exceeding Standards		
			2007	2008	2009
Ozone (O ₃)	NAAQS 8-hr	Concord	1	6	2
		BAY AREA	1	12	8
	CAAQS 1-hr	Concord	1	3	2
		BAY AREA	4	9	11
	CAAQS 8-hr	Concord	4	8	5
		BAY AREA	9	20	13
Fine Particulate Matter (PM ₁₀)	NAAQS 24-hr	Concord	0	0	0
		BAY AREA	0	0	0
	CAAQS 24-hr	Concord	2	1	0
		BAY AREA	4	3	1
Fine Particulate Matter (PM _{2.5})	NAAQS 24-hr*	Concord	7	3	1
		BAY AREA	14	12	11
All Other (CO, NO ₂ , SO ₂)	All Other	Concord	0	0	0
		BAY AREA	0	0	0

Note: Measurements are taken from the air monitoring station at 2975 Treat Boulevard, Concord, CA, approximately 4 miles northeast of the project site.

Source: Air Resources Board, 2010.

Clean Air Plans

To achieve the CAAQS, the BAAQMD develops air quality plans addressing the California CAA and updates them approximately every three years. On September 15, 2010, the BAAQMD adopted the 2010 Clean Air Plan (CAP). The 2010 CAP became effective immediately and includes 55 measures for reducing pollution. In general, the 2010 CAP furthers the goals of the Bay Area 2005 Ozone Strategy, and includes the following actions:

- Update the current Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement “all feasible measures” to reduce ozone;

- Provide a control strategy to reduce ozone, particulate matter, TACs, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented between the 2010 to 2012 timeframe.

BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM₁₀ and PM_{2.5} emissions (e.g., Spare the Night Program). BAAQMD Regulation 6, Rule 3 restricts operation of any indoor or outdoor fireplace, fire pit, wood or pellet stove, masonry heater, or fireplace insert on specific days during the winter when air quality conditions are forecasted to exceed the NAAQS for PM_{2.5}. Rule 3 also limits excess visible emissions from wood burning devices and requires clean burning technology for wood burning devices sold (or resold) or installed in the Bay Area.

In addition, BAAQMD enforces regulations regarding offensive odors. BAAQMD Regulation 7 places general limitations on odorous substances, and specific emission limitations on certain odorous compounds. The regulation applies when and if the BAAQMD receives validated odor complaints from 10 or more complainants in a 90-day period.

BAAQMD CEQA Guidelines

BAAQMD's CEQA Guidelines establish thresholds for use in determining whether projects would have significant adverse environmental impacts, identifying methodologies for predicting project emissions and impacts, and identifying measures that can be used to avoid or reduce air quality impacts. **Table 4.2-5** presents the BAAQMD thresholds for CEQA review.

Contra Costa General Plan

The Conservation Element of the General Plan contains the following relevant policies related to air quality:

- 8-100 Vehicular emissions shall be reduced throughout the County.
- 8-103 When there is a finding that a proposed project might significantly affect air quality, appropriate mitigation measures shall be imposed.
- 8-104 Proposed projects shall be reviewed for their potential to generate hazardous air pollutants.
- 8-105 Land uses which are sensitive to air pollution shall be separated from sources of air pollution.

Table 4.2-5 BAAQMD CEQA Guidelines: Air Pollutant Impact Thresholds

Criteria Air Pollutant	Operational-Related		
	Construction-Related Average Daily Emissions	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tons per year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (exhaust)	82	82	15
PM _{2.5} (exhaust)	54	54	10
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Source: BAAQMD 2010c.

Project Consistency

The ultimately approved project would be required to comply with all pertinent federal, state, and regional standards and regulations regarding air pollutant emissions during project construction and operation. Consistency with these standards and regulations is discussed more specifically in **subsection 4.2.3** below.

In order to be consistent with the General Plan, this Draft EIR includes a quantitative analysis of air quality impacts, and contains mitigation measures to reduce impacts from criteria pollutants.

Additionally, both Project Variants include a Transportation Demand Management (TDM) program which is intended to reduce vehicle miles travelled by encouraging members to walk, bicycle, or carpool to and from the facility. Implementation of a TDM would reduce vehicle emissions in conformance with the intent of policy 8-100.

4.2.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As identified in Appendix G, a project would have a significant impact on air quality if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- c) Expose sensitive receptors to substantial pollutant concentrations;
- d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);¹ or
- e) Create objectionable odors affecting a substantial number of people.

Discussion of Less-than-Significant Impacts

Analysis of details and site characteristics in the context of the five significance criteria stated above shows that less-than-significant impacts would result for three of the criteria.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The *Bay Area 2010 Clean Air Plan* (2010 CAP) was adopted by BAAQMD in September 2010, and is the current regional Clean Air Plan under the federal CAA.

To address the region's non-attainment status in regards to ozone (O₃), the 2010 CAP explains how the Air Basin will achieve compliance with the CAAQS for one-hour O₃ and eight-hour O₃ and also explains how the region will reduce transport of O₃ and ozone precursors to neighboring air basins. To achieve these state and federal standards, the 2010 CAP contains mobile and stationary source controls, transportation control measures, land use and local impact measures, and energy and climate measures to be implemented throughout the region.

The 2010 CAP is based on regional population, housing, and employment projections through 2020 compiled by the Association of Bay Area Governments (ABAG). As such, a project would conflict with or obstruct implementation of the regional air quality plan if it would be inconsistent with the regional growth assumptions, in terms of population, employment, or regional growth in Vehicle Miles Traveled (VMT).

The regional growth assumptions within the 2010 CAP are based on a synthesis of general plans and other similar documents from regional jurisdictions. The Contra Costa County General Plan designates the project site for residential use, but also allows numerous non-residential uses, including religious uses, with approval of a use permit. The sanctuary building is a religious use allowable with approval of a use permit.

¹ This is evaluated by comparing direct and indirect project emissions to BAAQMD significance thresholds of 54 pounds per day for ROG, NO_x, or PM_{2.5} and 82 pounds per day for PM₁₀.

Furthermore, the proposed use would not result in any foreseeable increase in regional population, insofar as neither Project Variant includes any housing that could increase local area or regional growth. Moreover, the vast majority of the congregation lives within 0.5-miles of the new sanctuary and would walk or use alternate transportation to reach the site. Therefore, the Project Variant ultimately selected would not result in an entirely new use that could substantially increase vehicle miles traveled relative to existing conditions.

The 2010 CAP includes 17 Transportation Control Measures (TCMs), several of which require participation at the local level. TCMs applicable here would reduce motor vehicle travel by encouraging use of alternative transportation modes, including transit, bicycle, and pedestrian modes of transportation. As discussed in **Chapter 3, Project Description**, the applicant proposes a detailed Transportation Demand Management (TDM) plan. The TDM plan is part of the application and will be thus reviewed and considered by the County. The proposed TDM plan incorporates several strategies intended to reduce automobile traffic to the sanctuary building, including a pledge from 167 members to always walk, bike, or carpool to the project site; parking monitors to limit parking on-site to approved carpools during high-attendance events; bicycle racks; a shuttle service to an off-site parking lot at the Meher Schools, and others. If approved, the proposed TDM plan would set forth TCMs in conformance with the 2010 CAP.

Since neither Project Variant would directly increase the population or create a substantial change in VMT, it would not conflict with or obstruct implementation of the applicable air quality plan. This is considered a less-than-significant impact and no mitigation is required.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

In general, operational air quality emissions result from activities including vehicle travel to and from the project site, heating and cooling devices, and generators. To determine whether a project is of a size that its operational emissions could have a significant air quality impact, the BAAQMD CEQA Guidelines set forth screening criteria. The screening criteria for a place of worship is 439,000 square feet. At 66,074 square feet, the sanctuary building is well below the BAAQMD screening criteria for operational emissions. Therefore, this impact is considered less-than-significant; no mitigation is required.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

The proposed religious use is not expected to result in any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. However, as described below in **Impacts 4.2-1** and **4.2-2**, construction activities would result in temporary emissions of dust and diesel exhaust.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike high-volume freeways and large stationary sources that generate substantial concentration of pollutants for extended durations of time, construction related diesel emissions are temporary and transient in nature, affecting an area for limited period. Moreover, as further stated below in **Impact 4.2-2** below, a substantial component of construction period emissions is related to the off-site transportation of excavated materials. This would mean that construction related pollutants would be dispersed over a substantial area, rather than concentrated on the project site.

The BAAQMD has not developed thresholds or guidelines for identifying impacts related to TAC emissions resulting from temporary or short-term construction activities where emissions are mobile and transient in nature. Due to the temporary duration of the construction period, the level of health risk would be considered less-than-significant. No mitigation is required.

Discussion of Significant Impacts

d) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Impact 4.2-1: Construction would result in emissions of fugitive dust. (Less than Significant with Mitigation)

Particulate matter in the form of fugitive dust would be generated during excavation for the underground portion of the building, as well as during clearing and grading activities across the remainder of the site. The amount of dust generated is highly variable and would be dependent on the size of the area disturbed, amount of activity, soil conditions and meteorological conditions.

Although clearing, grading, truck haul trips, and other construction activities would be temporary, they would have the potential to cause air quality impacts. PM_{10} is the pollutant of greatest concern associated with fugitive dust, and if uncontrolled, during construction, PM_{10} and $PM_{2.5}$ levels could disturb areas downwind of the project site. This is considered a significant impact.

As set forth in **Table 4.2-5**, the BAAQMD does not have a threshold for construction period fugitive dust particles, but instead recommends that all projects incorporate all of the best management practices (BMPs) contained with the BAAQMD's *Basic Construction Mitigation Measures*. **Mitigation Measure 4.2-1** incorporates all of these BMPs to address fugitive dust.²

Mitigation Measure 4.2-1: Prior to the approval of a grading plan, County DCD shall ensure that grading and demolition plans include the following measures for all phases of construction as recommended by BAAQMD to reduce the air quality impacts of particulate matter (PM₁₀ and PM_{2.5}) associated with grading and new construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered a minimum of two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered;
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. No dry power sweeping shall be performed (i.e., prohibited);
- All vehicle speeds on unpaved roads shall be limited to 15 mph;
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points;
- All construction equipment and haul trucks shall be maintained and properly tuned in accordance with manufacturer's specifications. All construction equipment and haul trucks shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;³ and

² **Mitigation Measure 4.8-2** requires that a Storm Water Pollution Prevention Plan [SWPPP] would be approved prior to the issuance of grading permits; the SWPPP would include further, additional best management practices for the protection of water quality from construction-related soil materials washing down storm drains.

³ While some of these measures do not pertain strictly to fugitive dust, they are nonetheless included in the *BAAQMD CEQA Guidelines* (page 8-4) list of BMPs related to construction.

- A publicly visible sign shall be posted with the telephone number of the Construction Manager and BAAQMD to report dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD complaint line telephone number shall also be visible to ensure compliance with applicable regulations.

Significance after Mitigation: Less than significant. **Mitigation Measure 4.2-1** reflects best available control measures as identified by BAAQMD, and would reduce construction period emissions so that impacts from fugitive dust would be less than significant.

Impact 4.2-2: Emissions of diesel exhaust during construction would exceed BAAQMD thresholds for NO_x. (Less than Significant with Mitigation)

Construction of the sanctuary building and development of the surrounding site would generate emissions of criteria pollutants from the operation of equipment and combustion of vehicle fuel (both on- and off-site) and application of architectural coatings including paint and sealants.

Worst-case average daily air quality construction emissions were calculated using the URBEMIS2007 model.

Because construction of the sanctuary building requires substantial excavation, it would require a number of truck haul trips from the project site to deliver excavated soils to a suitable landfill. The applicant has identified the Acme Landfill in Martinez as a suitable site to receive excavated materials.

The URBEMIS2007 model assumes that construction would involve a total of 12 trucks with a 13 cubic yard capacity, each making 8 trips per day and travelling an average of 24 miles per round trip to the Acme Landfill for an estimated total of 35 days. Nearly all NO_x emissions are associated with vehicle exhaust emitted during the 24-mile round trip to the Acme Landfill, as opposed to being concentrated on the project site.

As shown in **Table 4.2-6**, the URBEMIS2007 model estimates that construction activities would exceed the BAAQMD threshold for NO_x. (The estimated emissions in **Table 4.2-6** assume implementation of all Best Management Practices (BMPs) listed in **Mitigation Measure 4.2-1**.) **Appendix F** includes a description of the URBEMIS2007 model assumptions and the air quality emissions calculations. Therefore, additional mitigation will be required.

Table 4.2-6 Estimated Construction Emissions - With Best Management Practices

Criteria Emissions	BAAQMD Threshold (lb/day)	Peak Emissions (lb/day)	Significant?
ROG	54	44 ^a	NO
NO _x	54	62	YES
Combustion Particulates (C-PM ₁₀)	82 ^b	3	NO
Combustion Particulates (C-PM _{2.5})	54 ^b	2	NO

Notes to Table 4.2-6:

^a The majority of ROG emissions would come from the sanctuary building’s architectural coatings (i.e., paint, sealants, glues, and similar substances typically used in new construction). As discussed in **Chapter 3, Project Description**, over two-thirds of the sanctuary building would be below grade. Accordingly, this portion of the building would not require any decorative exterior architectural coating, such as paint. Additionally, the sanctuary building includes several domes which would be covered in a pre-fabricated solid membrane that would not require further painting.

The inputs to the URBEMIS2007 model were adjusted to account for the lack of exterior painting on the underground portion of the sanctuary and the domes. The inputs assumed a 46,000 square foot building. The actual above ground portion of the sanctuary building is about 20,000 square feet, and as noted above, the domed portions would not require paint. Therefore, the assumption of 46,000 square feet is conservative and likely overestimates the potential total ROG emissions.

^b Only applies to construction equipment exhaust, therefore fugitive dust and combustion particulates are determined exclusively.

Bold text indicates levels that exceed thresholds

Source: Circlepoint, 2011.

Modifying the construction schedule, as described in **Mitigation Measure 4.2-2**, would reduce emissions of NO_x below the significance threshold.

Mitigation Measure 4.2-2: Emissions of NO_x from construction activities shall be limited to less than 54 pounds per day. This performance standard would be achieved by limiting vehicle miles travelled (VMT) for standard hauling trucks to 1,764 VMT per day.

Assuming 13 cubic-yard-trucks and delivery to the Acme landfill, this would mean that soil hauling would be capped at 74 round trips per day, which would extend the excavation schedule from an earlier projection by the applicant of 35 working days to 45 working days. If other sites were identified to accept the fill, the schedule could be revised accordingly to fit within the same VMT limitation.

Significance after Mitigation: Less than significant. **Table 4.2-7** shows the estimated change in emissions following implementation of **Mitigation Measure 4.2-2**. As indicated in **Table 4.2-7**, with the implementation of an extended excavation phase, construction-related emissions of NO_x would fall below the BAAQMD threshold.

However, construction emissions could potentially be reduced even further below operative thresholds through any extraordinary measures the project applicant may wish to develop. Should the applicant propose any such alternative and/or additional measures, the applicant shall engage the preparation of an air quality study prepared by a qualified professional. The study shall demonstrate to the satisfaction of the Director of County DCD that emissions are lower than relevant BAAQMD thresholds and also lower than those shown in **Table 4.2-7**.

Table 4.2-7 Estimated Construction Emissions, With Mitigation

Criteria Emissions	BAAQMD Threshold (lb/day)	Peak Emissions With Mitigation (lb/day)	Significant?
ROG	54	44	NO
NO _x	54	51	NO
Combustion Particulates (C-PM ₁₀)	82 ^a	2	NO
Combustion Particulates (C-PM _{2.5})	54 ^a	2	NO

Notes:

a Only applies to construction equipment exhaust, therefore fugitive dust and combustion particulates are determined exclusively.

Bold text indicates levels that exceed thresholds

Source: Circlepoint, 2011.

e) Would the project create objectionable odors affecting a substantial number of people?

Impact 4.2-3: The Project Variant ultimately selected could create objectionable odors affecting a substantial number of people during construction. (Less than Significant with Mitigation)

As a religious facility, neither Project Variant would be expected to generate objectionable odors during project operations. However, construction requires diesel-powered vehicles and equipment whose use could create localized odors. These odors would be temporary and would dissipate in the outdoor construction environment; however, the idling of diesel engines for an extended period of time could be considered an impact to the adjacent residential neighborhood. Mitigation is therefore required.

Mitigation Measure 4.2-3: Prior to the approval of a grading permit, County DCD shall verify that grading plans include a requirement that limits the allowable idling time of diesel-powered construction equipment to two minutes or less.

Significance after Mitigation: Less than significant. With the incorporation of **Mitigation Measure 4.2-3**, potential impacts related to odors during construction would be reduced to a less-than-significant level. No further mitigation is required.

To help ensure the efficacy of **Mitigation Measure 4.2-3**, **Mitigation Measure 4.2-1** includes a requirement for the construction site to include a publicly visible sign with the telephone number of the Construction Manager and BAAQMD to report concerns or complaints on construction period practices.

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4.3 BIOLOGICAL RESOURCES

The section identifies existing biological resources on the project site and in the project vicinity, and includes analysis of potential impacts on these resources. Potential resources include special status species and habitats.

This section is informed by four reports, which are included in **Appendix G**:

- 1) a biological resources report (EDAW, 2008) and
- 2) three arborist reports (Joseph McNeil, 2008, 2009a, 2009b).

Several comments related to biological resources were received in response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR). Comments included questions about tree removal, the impact of tree removal on birds, and the potential for adverse effects to protected plant and/or animal species. The discussion below addresses these comments.

Review of the plans indicates that Project Variant A and Project Variant B would have essentially similar effects upon biological resources. Both Project Variants involve modifications to the same physical amount of property. Therefore, the Project Variants are not separately evaluated in this section.

Methodology

EDAW conducted a reconnaissance-level biological resources assessment of the project site on February 22, 2008. The assessment included a wetland delineation and review of the California Natural Diversity Database (CNDDDB).

EDAW conducted a jurisdictional wetland delineation in accordance with the procedures outlined in the U.S. Army Corp of Engineers (ACOE) *Wetlands Delineation Manual* and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineations Manual: Arid West Region*.

EDAW reviewed the California Natural Diversity Database (CNDDDB) for the most recent distribution information for special-status plant and animal species within the Walnut Creek U.S. Geological Survey (USGS) quadrangle¹ and the eight surrounding adjacent quadrangles. **Appendix G** identifies all literature and data sources consulted in this effort.

¹ The project site is located within Sections 3 and 10, Township 1 South, Range 2 West, as depicted on the Las Trampas Ridge USGS 7.5-minute topographic quadrangle.

Existing (developed, urbanized) site conditions did not warrant focused wildlife surveys or botanical surveys as part of this reconnaissance-level site evaluation. However, based on the reconnaissance survey, the highly disturbed nature of this “in-fill” site, and an assessment of habitats on site, certain special-status plant and animal species are not expected to occur or can be entirely ruled out.

For the purposes of this document, “special-status” refers to those resources that meet one or more of the criteria listed below.

- Plant and animal species listed by the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), or the California Native Plant Society (CNPS) as endangered, threatened, or rare; proposed for listing as endangered, threatened, or rare; or as a candidate for listing as endangered, threatened, or rare.
- Plants listed on CNPS List 1B, List 2, List 3, or List 4. Species on List 1B and List 2 are considered eligible for listing as endangered or threatened under the CDFG Code. CNPS List 3 and List 4 are species about which more information is needed or are uncommon enough that their statuses should regularly be monitored. These species may be eligible or may become eligible for state listing.
- Animal species listed under the federal Endangered Species Act and the California Endangered Species Act.
- Eagles (e.g., bald eagle, golden eagle) receive federal protection under the Bald Eagle Protection Act.
- Species designated by the CDFG as “Fully Protected”, “Protected birds”, “Protected mammals”, “Protected amphibian”, “Protected fish”, or “Protected reptile”. “Protected” means that a species may not be taken or possessed except under special permit from the CDFG. “Fully Protected” means that a species can be taken for scientific purposes by permit only.
- Migratory birds are protected by the federal Migratory Bird Treaty Act (MBTA). All birds are protected under the MBTA except European starlings, English house sparrows, and rock doves (pigeons). Other non-migratory game birds are protected by CDFG Code Section 3503.
- Species listed on the CDFG’s CNDDDB are considered species of special concern. Species listed on the CNDDDB are not afforded official legal status, although they may receive special consideration under the CEQA review process.

4.3.1 Existing Conditions

Based on the reconnaissance survey, the site has little habitat value because it has been highly disturbed and landscaped as part of prior development. Disturbed lands are those on which the native vegetation has been completely removed by grading, cultivation, and development. Landscaped lands are also disturbed in that all or most of the native vegetation has been replaced with ornamental species.

Because the 3-acre site is “in-fill” in nature, its value to wildlife species is greater for those species that can persist in disturbed areas with little habitat complexity, and are habituated to human activities. Potential species for this disturbed landscape includes roosting bats and nesting birds.

Trees

Figure 4.3-1 shows the location of existing trees. The property contains 36 trees, with an additional 7 trees located in the County right-of-way along Boulevard Way. All 43 trees are proposed for removal.

In addition to exotic ornamental species, the project site contains several native trees, including 6 Coast live oaks (*Quercus agrifolia*) and 8 mature Valley oaks (*Quercus lobata*). Large diameter trees, native or exotic, can provide nesting habitat for raptors, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*).

Heritage Trees

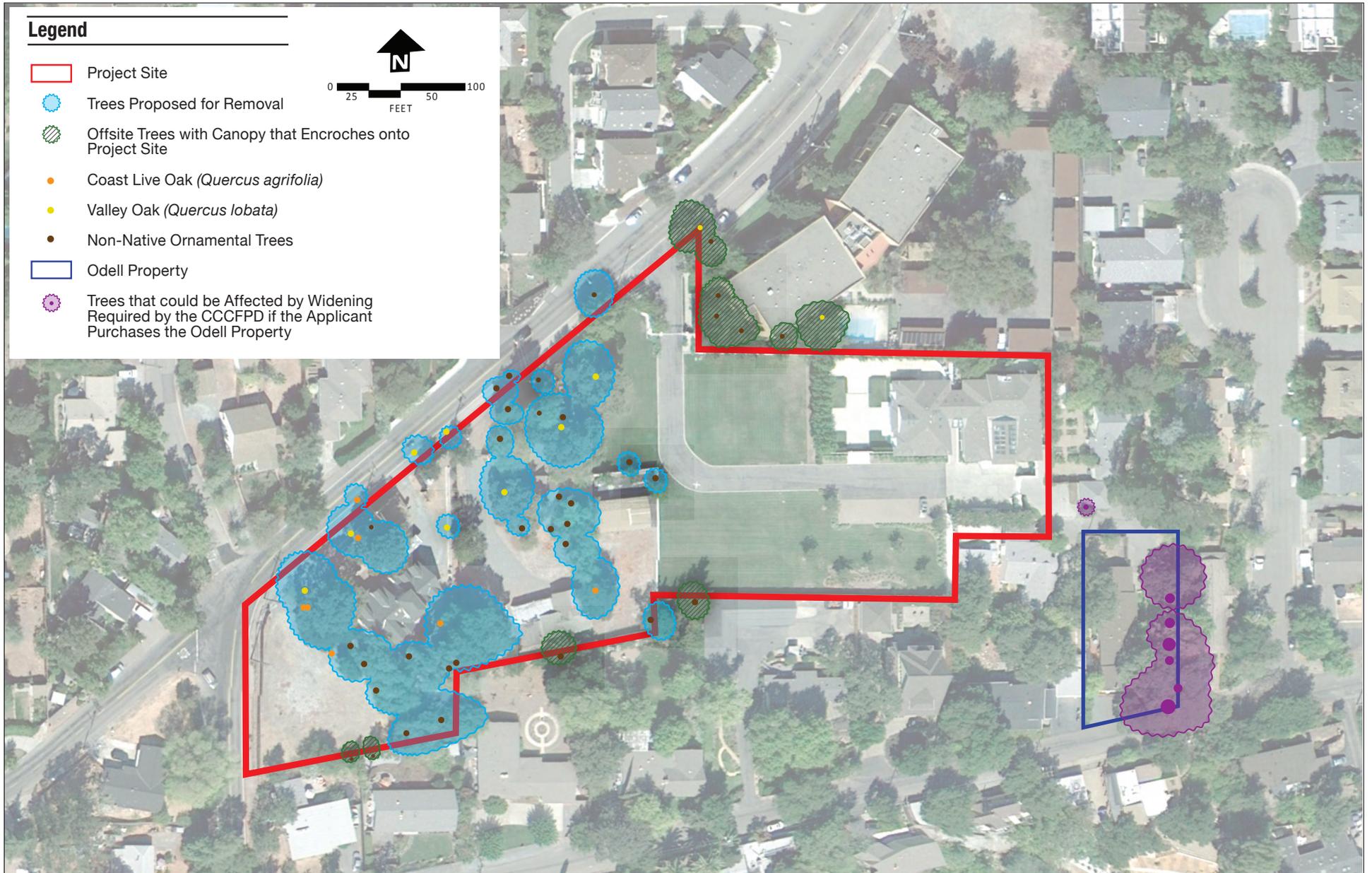
Per the arborist evaluation in **Appendix G**, none of the existing trees are designated “heritage” trees as none are of sufficient size nor have any been officially designated as heritage trees for any other reason.

Protected Trees

Many trees on the project site are considered “protected” under criterion (2)(A) and (3)(B) of the County code because they are oak trees that exceed 6.5 inches in diameter at breast height and are located on what the County Code defines as “undeveloped property”.

Special-Status Plant Species

Based on a literature review, including the CNDDDB searches, 52 special-status plant species were considered to have some potential to occur within the project region or have been recorded in the project vicinity (see **Appendix G**). All of the 52 species were determined to have no potential to be present on the project site based on the absence of suitable habitat or because they were not observed during the February 2008 site visit.



Existing Tree Locations

Figure

4.3-1

Special-Status Wildlife Species

Based on a literature review and the biologist's expertise and familiarity with wildlife species in the project vicinity, 65 special-status animal species were considered to have some potential to occur within the project region or have been recorded in the project vicinity. Special-status animal species associated with habitats not present on the project site are not discussed further. **Table 4.3-1** identifies the above 65 considered species, their regulatory status, habitat requirements, and an assessment of their potential for occurrence on the project site. As shown in **Table 4.3-1**, these species are either not expected to occur based on the absence of suitable habitat, or have a low potential for occurrence. The only exception is the Cooper's hawk (*Accipiter cooperii*), which has a moderate potential for occurrence, and is discussed in more detail below. **Appendix G** provides more detail on the conclusions regarding the potential for occurrence of these species.

Raptors

Raptors such as the Cooper's hawk (*Accipiter cooperii*), a California species of special concern, nest in mature, large coniferous or deciduous trees. The few larger native oak trees on the project site provide suitable nesting habitat for the Cooper's hawk. The Cooper's hawk is protected under the MBTA and the CDFG Code. Its nesting period is generally between December 15 and August 31. No active nests were detected during the February 2008 site visit.

Passerine and Non-Passerine Birds

Passerine (perching) birds including the California yellow warbler (*Dendroica petechia brewsteri*) and non-passerine birds including the White-tailed kite (*Elanus leucurus*) have a wide range of habitat, nesting, and foraging requirements, however they typically nest on the ground, in shrubs or trees, on buildings, under bridges, or within cavities or crevices. Several special-status non-passerine species nest in riparian habitats. Passerine and non-passerine birds are protected under the MBTA and the CDFG Code. Their nesting periods are generally between February 1 and August 31.

Passerine and non-passerine birds were observed on the project site during the February 2008 site visit. Suitable nesting and foraging habitat is present within the native and ornamental trees and shrubs on the project site. However, as there is no riparian habitat within the project site, the potential for *several* special-status passerine species to occur is limited.

Table 4.3-1 Special-Status Wildlife Species Known to Occur in the Project Vicinity

Common and Scientific Name	Status Federal/ State	Habitat Requirements	Potential for Occurrence on Project Site
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	Federal FT/ State CSC	Breeds in temporary or semi-permanent pools. Seeks cover in rodent burrows in grasslands and oak woodlands	Not expected
California red-legged frog <i>Rana aurora draytonii</i>	Federal FT/State CSC	Prefers semi-permanent and permanent stream pools, ponds, and creeks with emergent and/or riparian vegetation. Will occupy upland areas during the wet winter months.	Not expected
Foothill yellow-legged frog <i>Rana boylei</i>	State CSC	Inhabits permanent, slow-moving stream courses in the Coast Ranges and Sierra Nevada foothills. These streams usually contain a cobble substrate and a mixture of open canopy riparian vegetation.	Not expected
Reptiles			
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	Federal FT/ State CT	Restricted to chaparral and coastal scrub of the Coast Ranges. Uses rock outcrops for refuge. Inhabits appropriate habitat on south, southwest- and southeast-facing slopes and ravines where the shrubs form a vegetative mosaic with grasses. Uses rodent burrows. Feeds on a number of items including fence lizards.	Not expected
Western pond turtle <i>Clemmys marmorata</i>	State CSC	Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes, and irrigation ditches with basking sites and a vegetated shoreline. Needs upland sites for egg laying.	Not expected
Invertebrates			
Bridges' Coast Range shoulderband snail <i>Helminthoglypta nickliniana bridgesii</i>	CNDDB	Typically found in moist, often riparian areas under rocks, logs, woody debris, or accumulations of leaf mold.	Not Expected
Birds			
Burrowing owl <i>Athene cunicularia hypugea</i>	State CSC	Open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned mammal burrows.	Not Expected

Common and Scientific Name	Status Federal/ State	Habitat Requirements	Potential for Occurrence on Project Site
Birds, continued			
Cooper's hawk <i>Accipiter cooperii</i>	State CSC	Nests primarily in deciduous riparian forests. May also occupy dense canopied forests from gray pine-oak woodland to ponderosa pine. Forages in open woodlands.	Low
Sharp-shinned hawk <i>Accipiter striatus</i>	State CSC	Dense to open canopy pine or mixed conifer forest, riparian habitats, and grassland with scattered trees.	Not expected
Long-eared owl <i>Asio otus</i>	State CSC	Breeds mainly in dense coniferous or mixed woodland, including riverine woodland belt. Nests in large, previously used nest of another bird species or squirrel. Nests up to 10-29 feet in height, more rarely on ground or among shrubby growth. Forages over open fields and marshes.	Not expected
Golden eagle <i>Aquila chrysaetos</i>	State CFP	Forages in a variety of habitats including grasslands, chaparral, and oak woodland supporting abundant mammals. Nests on cliffs and escarpments, and tall trees.	Not expected
California Yellow warbler <i>Dendroica petechia brewsteri</i>	State CSC	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders, and in mature chaparral. May also inhabit oak and coniferous woodlands and urban areas near stream courses.	Low
White-tailed kite <i>Elanus leucurus</i>	State CFP	Inhabits agricultural areas, low rolling foothills, valley margins with scattered oaks and river bottomlands, or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows, marshes, and agricultural fields for foraging.	Low
Yellow-breasted chat <i>Icteria virens</i>	State CSC	Nests in dense riparian habitats dominated by willows, alders, ash, blackberry, and grape vines.	Not expected
Mammals			
Pallid bat <i>Antrozous pallidus</i>	State CSC	Inhabits open, dry habitats such as deserts, grasslands, and shrublands with rocky areas for roosting. Roosts in caves, mine tunnels, crevices in rocks, buildings, and trees. Bats are very sensitive to disturbance of roosting sites. Forages in open habitats.	Low

Common and Scientific Name	Status Federal/ State	Habitat Requirements	Potential for Occurrence on Project Site
Mammals, continued			
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	State CSC	Roosting sites include caves, mine tunnels, abandoned buildings, and other structures. Inhabits a variety of plant communities including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands, and deserts. Most commonly associated with mesic sites. Highly sensitive to human disturbances; a single visit by humans can cause bats to abandon roosts.	Low
Western mastiff bat <i>Eumops perotis californicus</i>	State CSC	Roosts in cliff faces and buildings.	Low
Silver-haired bat <i>Lasionycter noctivagans</i>	State CSC	Found throughout the U.S. with the exception of Florida. Are considered a solitary, tree-roosting species.	Low
Hoary bat <i>Lasiurus cinereus</i>	State CNDDB	Habitats suitable for bearing young include all woodlands and forests with medium to large-size trees and dense foliage.	Low
Long-eared myotis bat <i>Myotis evotis</i>	State CNDDB	Inhabits thinly forested areas around buildings or trees. Occasionally found in caves. Does not occur in large colonies.	Low
Long-legged myotis bat <i>Myotis volans</i>	State CNDDB	Roosts colonially in buildings, small pockets and crevices in rock ledges, and exfoliating tree bark and hollows within snags.	Low
Yuma myotis bat <i>Myotis yumanensis</i>	State CNDDB	Roosts colonially in caves, tunnels, trees and buildings. Inhabits arid regions.	Low
American badger <i>Taxidea taxus</i>	State CSC	Inhabits open grasslands, savannas, and mountain meadows near timberline. Requires abundant burrowing mammals, their principal food source, and loose, friable soils.	Not expected

State

CSC: California Species of Special Concern

CT: California Threatened

CFP: Fully Protected under the CDFG Code

CNDDB: Tracked by the CA Natural Diversity Database

Source: EDAW, 2008.

Federal

FT: Federally Threatened

Special-Status Bats

Seven special-status bat species have some potential to occur within the project area, as identified in **Table 4.3-1**. These species use mature trees, snags, crevices, and buildings for roosting. Bats are generally site-faithful and will not abandon an established roosting area unless disturbed.

The pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), western mastiff bat (*Eumops perotis californicus*), long-eared myotis bat (*Myotis evotis*), long-legged myotis bat (*Myotis volans*), and Yuma myotis bat (*Myotis yumanensis*) have roosting and maternity site² opportunities within the project site, mainly in the mature trees, but also in the existing vacant building located at 1364 Boulevard Way.

No roosting bats were discovered on the project site during the February 2008 site visit. However, given the potential habitat on the project site, including the three residences and existing trees, there is still a low likelihood for the occurrence of bats.

Jurisdictional Waters

"Waters of the United States" is the term used to describe areas that qualify for federal protection under Section 404 of the Clean Water Act (33 U.S.C. §1251). Federal law defines wetlands and "other waters of the United States" as:

Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (CFR 328.3, CFR 230.3). "Other waters of the United States" refers to unvegetated waterways and other water bodies with a defined bed and bank, such as drainages, creeks, rivers, and lakes.

Consistent with governing protocols³, qualified biologists conducted a jurisdictional wetland delineation on February 22, 2008, seeking to determine whether the site had any areas that could be considered to be wetlands or other waters of the United States or isolated wetlands that could fall under State of California jurisdiction.

The biologists found no evidence to that the project site contains any jurisdictional waters or wetlands. Furthermore, the site does not support any creek, pond, or isolated

² "Maternity sites" are locations selected by bats in which they give birth.

³ The biologists followed procedures outlined in the U.S. Army Corp of Engineers (ACOE) *Wetlands Delineation Manual* and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineations Manual: Arid West Region*

wetland habitat regulated by the CDFG. Notably, Las Trampas Creek is located south of Warren Road and is separated from the project area by Warren road as well as by intervening residential development. **Section 4.8, Hydrology and Water Quality**, discusses the potential impacts to this creek.

Sensitive Natural Communities

As discussed in the biological resources assessment, there are no sensitive natural communities occurring within the project area.

Sensitive natural communities are those which are considered rare in the region, and those that support special-status plant or wildlife species, or receive regulatory protection (i.e., Section 404 of the CWA or Section 1600 et seq. of the California Fish and Game Code). The CNDBB has also identified a number of communities as “rare.” Four of these communities (northern maritime chaparral, northern coastal salt marsh, coastal brackish marsh, and serpentine bunchgrass) occur in quadrangles adjacent to the project site, but none were found to occur on the project site.

Wildlife Movement Corridors

Wildlife corridors are described as pathways or habitat linkages that connect populations located in discrete areas that have been separated from populations located within larger habitat areas or have been otherwise fragmented. Habitat fragmentation is an event that creates a greater number of habitat patches that are smaller in size than the original contiguous habitat tracts. Fragmentation of habitats can hinder regional wildlife movements.

The project site is immediately bordered by residential development and roadways. The project site itself is developed and highly disturbed. These characteristics provide limited habitat to nesting and foraging bird species. The project site does not function as a potential wildlife movement corridor, as wildlife movement to the project site is constrained by existing development, including fenced areas. Given that the project site is surrounded by developed areas, development of the project site is expected to have no long-term effects on wildlife movement.

Common Animal Species

Other common species that likely inhabit or otherwise travel through the site include, but are not limited to, raccoon (*Procyon lotor*), opossum (*Didelphus virginianus*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferous*), western meadowlark (*Sturnella neglecta*), blackbirds, loggerhead shrike (*Lanius ludovicianus*), and western fence lizard (*Sceloporus*

occidentalis). A variety of predators are associated with disturbed/landscaped lands including snakes, various raptors, and red fox (*Vulpes vulpes*). None of these species are classified as special status.

4.3.2 Regulatory Setting

U.S. Fish and Wildlife Service

The USFWS has jurisdiction over federally listed Threatened and Endangered species under the federal Endangered Species Act (ESA). Section 9 of the ESA protects listed species from harm or “take,” which is broadly defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.”⁴ An activity can be defined as a “take” even if it is accidental or unintentional.

An Endangered species is one which is considered in danger of becoming extinct throughout all or significant portions of its range. A Threatened species is one that is likely to become Endangered within the foreseeable future. In addition to Endangered and Threatened species, the USFWS maintains lists of candidate species and Birds of Conservation Concern. Species on these lists are not afforded the legal protection of the federal ESA but are considered to be of special-status under CEQA. **Table 4.3-1** shows the special status species known to occur in the project vicinity and evaluates the potential for occurrence on the project site.

Project Consistency

No federally listed wildlife species are expected to occur on the project site. However, if federally listed wildlife species were encountered during construction, the Project Variant ultimately selected would be required to comply with USFWS regulations.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act⁵ (MBTA) prohibits killing, possessing, or trading of migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The Act encompasses whole birds, parts of birds, and bird nests and eggs.

Project Consistency

Both Project Variants propose the removal of trees which are known to provide habitat and nesting to migratory birds. **Mitigation Measure 4.3-1b** includes measures to address tree removal in terms of compliance with the MBTA.

⁴ 16 USC, Section 1532(19).

⁵ 16 USC, Section 703, Supplement I, 1989.

California Department of Fish and Game

The CDFG has jurisdiction over state-listed Threatened and Endangered species under the California Endangered Species Act. The state also maintains a list of wildlife identified as Species of Special Concern and Fully Protected. Species on this list are not afforded the legal protection of the state ESA but are considered to be of special-status under CEQA.

The CDFG also exerts jurisdiction over the beds and banks of watercourses.⁶ The CDFG typically requires a Streambed Alteration Agreement for the fill or removal of any material from any natural drainage. The jurisdiction of the CDFG extends to the top of bank and includes the outer edge of riparian canopy cover.

Section 3503 of the California Fish and Game Code protects all breeding native bird species in California by prohibiting the take, possession, or needless destruction of nests and eggs of any bird, with the exception of non-native English sparrows, European starlings, and rock doves (pigeons) (Section 3801).

Project Consistency

Both Project Variants include the removal of trees which could potentially provide nesting habitat to protected native bird species. **Mitigation Measure 4.3-1** includes measures to address tree removal in terms of compliance with the CDFG and Section 3503 of the California Fish and Game Code.

California Native Plant Society

The CNPS has developed and maintains lists of plant species that it considers to be rare, threatened or endangered in California. Although the CNPS is a private conservation group, the species on its List 1B (plant species considered endangered in California and elsewhere) and List 2 (plant species considered rare, threatened or endangered in California, but common elsewhere) warrant analysis in CEQA documents as they meet the definition of threatened or endangered under the California Native Plant Protection Act (NPPA) and Sections 2062 and 2067 of the California Fish and Game Code. List 1A plants are considered extinct by the CNPS because they have not been observed despite focused searches. The CDFG does not consider the CNPS List 3 and List 4 plant species as requiring CEQA analysis, although the CNPS does recommended that these species be considered in CEQA documents. List 3 plants are those about which more information is needed (a review list), and List 4 Plants are those plants with limited distribution (a watch list).

⁶ Section 1601- 1603 of the Fish and Game Code

Project Consistency

The project site does not contain any plant species that CNPS considers to be rare, threatened, or endangered in California.

Contra Costa County General Plan and County Code

The Conservation Element of the Contra Costa County General Plan is “concerned with issues regarding the identification, preservation and management of natural resources in the unincorporated County.” The General Plan identifies “Significant Ecological Resource Areas” in Contra Costa County. These areas are separated into three categories: (1) areas containing rare, threatened and endangered species; (2) unique natural areas; and (3) wetlands and marshes.

The General Plan includes the following policy related to natural resources:

8-6 Significant trees, natural vegetation, and wildlife resources generally shall be protected.

The County’s Tree Protection and Preservation Ordinance (County Code Section 816-6) sets forth numerous regulations regarding the protection of trees on private property. County Code 816-6.6004 includes numerous criteria defining “protected trees.” Of these, the relevant criteria are:

- (2) On any of the properties specified in subsection (3) of this section:
 - (A) Any tree measuring twenty inches or larger in circumference (approximately six and one-half inches diameter), measured four and one-half feet from ground level including the oak trees⁷ listed above;
 - (B) Any multi-stemmed tree with the sum of the circumferences measuring forty inches or larger, measured four and one-half feet from ground level;
 - (C) And any significant grouping of trees, including groves of four or more trees.
- (3) Specified properties referred to in subsection (2) of this section include:
 - (A) Any developed property within any commercial, professional office or industrial district;

⁷ The oak trees included in this list referenced are: *Lithocarpus densiflora* (Tanoak or Tanbark Oak), *Quercus agrifolia* (California or Coast Live Oak), *Quercus chrysolepis* (Canyon Live Oak), *Quercus douglasii* (Blue Oak), *Quercus kelloggii* (California Black Oak), *Quercus lobata* (Valley Oak), and *Quercus wislizenii* (Interior Live Oak).

- (B) Any undeveloped property⁸ within any district;
- (C) Any area designated on the general plan for recreational purposes or open space;
- (D) Any area designated in the county general plan open space element as visually significant riparian or ridge line vegetation and where the tree is adjacent to or part of a riparian, foothill woodland or oak savanna area.

Trees proposed for removal that fall into any of these categories require a County permit for removal or substantial alteration (Chapter 816-6.8002). Prior to the issuance of such a permit, the County may require an assessment of the trees by a qualified arborist (Chapter 816-6.8008).

The Heritage Tree Preservation (HTP) District Ordinance (County Code Section 816-4) provides a separate definition of “*heritage trees*.” Designated heritage trees are trees that have been nominated through the Division or DCD for heritage tree status and have been approved by the Board of Supervisors. The County’s determination of a *heritage* tree includes considerations based on the size (at least 72 inches in circumference measured 4.5 feet above the natural grade), historic significance, and other factors related to the tree. The County Code protects designated heritage trees by requiring a permit for removal or substantial alteration (Chapter 816-4.1002). Section 816-4 includes additional regulations governing heritage trees.

Project Consistency

The project site is not located within a Significant Ecological Resource Area and, per the biological resources evaluations found in **Appendix G**, does not host any significant area of natural vegetation or wildlife. Moreover, the biological resources evaluations concluded that the project site contains no special-status plants or wildlife.

Per the arborist evaluation in **Appendix G**, none of the trees proposed to be removed from the project site are designated “*heritage*” trees as none are of sufficient size nor have any been officially designated as heritage trees for any other reason.

However, many trees on the project site are considered “*protected*” under criteria (2)(A) and (3)(B) above because these are oak trees which exceed 6.5 inches in diameter at breast height and are located on what the County Code defines as “undeveloped property” (construed to include land on which structures are proposed to be removed).

⁸ County Code Section 816-6.4024 defines undeveloped property as “a parcel of land on which the structures are proposed to be demolished or relocated.”

Accordingly, the applicant is requesting approval of a tree removal permit for these trees. The arborist evaluation in **Appendix G** was prepared to assess the quality of trees to be removed and provide measures to ensure the protection of trees on adjacent sites during construction.

4.3.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. A project would have a significant biological resources impact if it would:

- a) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- b) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to: marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- c) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan;
- d) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; or
- f) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the six significance criteria stated above shows that no impacts would result for four of the criteria.

a) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The project site and surrounding area are developed and do not contain any riparian areas or other sensitive natural communities. Therefore, neither Project Variant would result in impacts to such resources.

b) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to: marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

A formal wetland delineation and jurisdictional determination was prepared for the project site in accordance with the procedures outlined by the ACOE, as described in **subsection 4.3.1, Existing Conditions**. This delineation was conducted as part of the Biological Resources Assessment prepared by EDAW, and is included in **Appendix G**. No jurisdictional wetlands or Waters of the U.S., as defined by Section 404 of the federal CWA, were found to occur on the project site, therefore neither Project Variant would impact jurisdictional wetlands. Refer to **Section 4.8, Hydrology and Water Quality** for a discussion of off-site stormwater drainage into Las Trampas Creek, which is considered jurisdictional water.

c) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, Regional, or state habitat Conservation plan?

The closest Habitat Conservation Plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), whose western boundary is located approximately 5 miles east of the project site across an urbanized area (the City of Walnut Creek). Therefore, neither Project Variant would impact or conflict with any HCP.

Discussion of Significant Impacts

d) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact 4.3-1: Potential future purchase of the adjacent Odell property would trigger a County Fire Protection District requirement to widen the existing secondary road providing access to the project site from Warren Road. This would result in the removal of and/or damage to several existing trees.

The General Plan Conservation Element designates protected Significant Ecological Resource Areas. The project site is not within a Significant Ecological Resource Area, and therefore would not conflict with County policies designed to protect these areas.

The County Code contains regulations related to the management of *heritage* trees (Chapter 816-4) and *protected* trees (Chapter 816-6).

Although both Project Variants include the removal of up to 36⁹ existing mature trees, none of these trees are *designated heritage* trees according to the Heritage Tree Preservation (HTP) District Ordinance (see discussion under Contra Costa County General Plan and County Code in **subsection 4.3.2, Regulatory Setting** for the definition of *heritage tree*).

The Coast Live Oak and Valley Oak trees to be removed are considered *protected trees* under the County's Tree Protection and Preservation Ordinance. Both Project Variants include a request for a tree removal permit relative to these trees. In requesting the permit as part of the application, the Project Variant ultimately selected conforms to the established protocol. No mitigation is thus required.

Furthermore, both Project Variants propose 165 new trees, each of which would be a minimum 24-inch box size, with a substantial number of trees at a 36-inch box size.¹⁰ This would be a tree replacement ratio of nearly 4:1. The County code does not establish a tree replacement ratio; the request for and granting of a permit for removal fulfills the County code requirements.

Beyond the trees on the project site, tree removal may be required in the future to fulfill a condition of approval set forth by the County Fire Protection District. As discussed in **Chapter 3, Project Description**, there is a private driveway on the adjacent Odell property which connects the project site to Warren Road. This private driveway

⁹ One of the trees proposed for removal is an undersized flowering plum and is too small to fall under ordinance requirements. Therefore, it is not included in this analysis.

¹⁰ A 24- inch box tree will typically range from 8 to 15 feet in height depending on tree species. A 36- inch box tree will have a slightly larger range of heights.

provides secondary and emergency access to the project site (see **Figure 3-7**). In the event that the applicant purchases the Odell Property in the future, the County Fire Protection District would require the applicant to widen the existing driveway to 20 feet to better accommodate emergency vehicles. **Appendix C** includes a letter from CCCFPD in which it approves use of the road as it exists today, but stipulates that the eventual purchase of the Odell property would trigger a requirement to widen the road to a full 20 feet.

Per the Arborist Reports (dated June 22, 2009 and August 4, 2009) found in **Appendix G**, construction of the emergency access road could result in the removal of seven existing trees and damage to several other trees. Some of these trees are considered *protected* trees under the County's Tree Protection and Preservation Ordinance. **Mitigation Measure 4.3-1** would require the applicant to attain a tree removal permit prior to removing the protected trees. The measure also includes provisions if the purchase is not completed within a reasonable time frame following preparation of the **Appendix G** arborist reports.

To help protect the structural integrity of the remaining trees, the arborist reports recommend that no sub-excavation occur within an 8 to 10 foot zone of each tree (depending on the tree). Alternatively, the arborist reports recommend re-paving over the existing pavement rather than excavating the existing driveway. If sub-excavation is necessary within the tree protection zones, loose soil and other materials must be removed by high pressure air or water. Geogrid¹¹ and several inches of crushed rock must be placed into the excavated areas of the tree protection zone in order to support the new pavement.

The arborist reports also recommend chain link fencing to protect certain trees and measures such as providing sufficient hydration to protect damaged roots from potentially fatal bark beetles.

Mitigation Measure 4.3-1: If the applicant purchases the Odell property, compliance with the CCCFPD condition to widen the secondary access drive to Warren Road shall be required. In compliance with Chapter 816-6.8002 of the Tree Protection and Preservation Ordinance, a permit shall be obtained for the removal of all protected trees. If the applicant purchases the Odell property after August 2012, a qualified arborist shall examine the property and the recommendations of the arborist reports dated June 22, 2009 and August 4, 2009, included as **Appendix G** to this EIR, to confirm and/or append to the conditions included in the earlier reports.

¹¹ Geogrid is a stiff, synthetic, permeable material that is used to pin down soil, stone, or other material.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measure 4.3-1a** would ensure a tree removal permit would be required prior to any future widening of the emergency access road and that damage to remaining trees along the emergency access road would be minimized, thereby reducing impacts to a less-than-significant level.

e) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

f) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established resident or migratory wildlife corridors, or impede the use of native wildlife nursery site?

Impact 4.3-2: Demolition and tree removal activities could have an adverse effect on special-status species including roosting bats that are potentially nesting in trees and/or abandoned buildings found on the project site, as well as migratory birds and raptors that may nest in mature trees. (Less than Significant with Mitigation)

Demolition and tree removal activities could have a substantial adverse effect on bats, migratory birds, and raptors that have been identified as special-status species by the CDFG or listed on the CNDDDB.

Bats have a tendency to roost in mature trees and abandoned buildings, both of which are found on the project site.

Migratory birds and raptors may utilize mature trees for nesting and roosting. Once construction activities commence, these potential nesting and roosting areas would be removed, disturbed, or demolished.

While no bat occurrences were detected during the biologist's site visit, they have been found within two to five miles of the project site and thus could move into and occupy the project site any time prior to construction.

No active raptor nests were observed during the February 2008 site visit, although passerine and non-passerine birds were observed at that time.

In the event protected bats, migratory birds, or raptors occupy the project site prior to construction, **Mitigation Measures 4.3-2a** and **4.3-2b** would address potential impacts.

Mitigation Measure 4.3-2a: Given the potential for occurrence of roosting bats on the project site, the Contra Costa County Department of Conservation and Development (DCD) shall require a qualified biologist to conduct pre-construction surveys for roosting bats prior to issuance of demolition permits.

If roosting bats are detected, DCD shall require that a qualified biologist, in consultation with the California Department of Fish and Game (CDFG), shall exclude/evict the bats prior to removal of the occupied structure or tree. Abandoned structures or trees that are proposed for removal shall be removed before ground-disturbing activities begin to avoid conflicts with potential nesting periods. Immediately prior to construction, DCD shall require another pre-construction survey to be conducted to detect presence and confirm absence of active nesting in the trees that will remain.

During the pre-construction survey, the qualified biologist may enact other measures to protect roosting bats on the project site. These measures must be followed throughout the pre-construction and construction period.

Mitigation Measure 4.3-2b: Given the potential for occurrence of special-status bird species on the project site and the possibility for overlap of demolition and tree removal with the nesting season, DCD shall require a qualified biologist to conduct pre-construction surveys for nesting birds prior to issuance of demolition permits and no more than one week prior to tree removal.

If an occupied bird's nest is detected, a buffer zone of 50 to 300 feet shall be implemented to protect adults and nestlings from construction disturbances. If occupied nests are detected, exclusion areas are required until young birds have fledged.

During the pre-construction survey, the qualified biologist may enact other measures to protect raptors and birds on the project site. These measures must be followed throughout the pre-construction and construction period. Destruction of occupied nests would be in violation of the Migratory Bird Treaty Act (MBTA) and the CDFG Code.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measures 4.3-2a** and **4.3-2b** would ensure that there are no active nests in existing trees or structures on the project site prior to ground disturbing activities. If active bat roosts or bird nesting is discovered, this measure would ensure the affected bats and birds are properly removed prior to removal of the occupied tree or demolition of structures, thereby reducing the impact to a less-than-significant level.

Impact 4.3-3: Construction activities could disturb potential nesting habitat in trees that are not proposed for removal. (Less than Significant with Mitigation)

The few large native oaks and tall non-native trees on the project site provide potential nesting habitat for the following bird species:

- Cooper's hawk (*Accipiter cooperii*), a California species of special concern;
- California Yellow warbler (*Dendroica petechia brewsteri*), a California species of special concern; and
- White-tailed kite (*Elanus leucurus*), a California Fully Protected species.

The existing surrounding ornamental landscapes and buildings on and adjacent to the project site also provide potential foraging opportunities for these bird species as they provide habitat for small reptiles, mammals, and birds.

Mitigation Measures 4.3-2a and **2b** would protect potential nesting habitat in trees that are not proposed for removal, thereby reducing impacts to a less-than-significant level.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measures 4.3-2a** and **2b** would ensure the protection of trees not proposed for removal so that they continue to provide suitable habitat for birds during and after construction.

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4.4 CULTURAL RESOURCES

This section discusses known paleontological, archaeological, and historical resources that may be present on or near the project site. Applicable legislation relating to cultural resources and archaeological sites is also summarized. The discussion is based on a Cultural Resources Study prepared by Holman & Associates (2008) and the Existing Structures: Architectural/Historical Assessment and Analysis prepared by J. David Dacus, R.A. (2008). **Appendix H** contains each of these documents.

No comments related to cultural resources were received in response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR).

Review of the plans indicates that Project Variant A and Project Variant B would have similar effects upon cultural resources. Either variant involves modifications to the same physical amount of property. Therefore, the variants are not separately evaluated in this section.

4.4.1 Existing Conditions

Paleontological Resources

Paleontological resources consist of the fossilized remains of plants and animals, including vertebrates (animals with backbones) and invertebrates (e.g., starfish, clams, ammonites, and marine coral). The age and abundance of fossils depends on the topography and geological formations of the region of interest. Geologic mapping of surficial deposits and bedrock in the Walnut Creek area of Contra Costa County indicate that the project site geology consists of Pleistocene (10,000 to 1 million years ago) and Holocene (present to 10,000 years ago) age alluvial deposits overlying Miocene (5 to 25 million years ago) age Briones formation bedrock.

Of these three classifications, the Pleistocene and Miocene deposits are considered most sensitive in terms of containing potential paleontological resources. More recent Holocene period deposits are generally considered not old enough to harbor paleontological resources.

To identify any known paleontological resources in the vicinity of the project site, a record search was conducted on July 9, 2010, of the online database maintained by the University of California Museum of Paleontology (UCMP).¹ According to the UCMP

¹ On-line fossil locality search, University of California Museum of Paleontology, (July 9, 2010). Accessed at <http://ucmpdb.berkeley.edu/loc.shtml>.

online locality search tool, no records of known fossils exist on the project site. The closest recorded paleontological sites are located approximately 2 miles south of the project site, in Tice Valley.

Archaeological Resources

In order to determine the potential presence of archaeological resources on the project site and in the project area, Holman & Associates conducted a literature review and a field inspection of the project site in March 2008. The literature review, conducted at the Northwest Information Center (NWIC) at Rohnert Park, concluded that there are no recorded historic or prehistoric archaeological sites within the project boundaries or within 500 feet of the project site.

However, the literature review documented at least four recorded prehistoric archaeological sites located within a one-mile radius of the project site, including village sites located along or near the banks of Las Trampas, Tice, and San Ramon Creeks. Archaeological studies conducted in the project vicinity suggest that due to the close proximity to these creeks, there is potential that the project site could contain related buried archaeological materials. Field inspection of the project site did not identify any archaeological materials.

Historic Resources

There are three existing residential complexes on the project site. An architectural/historical assessment conducted by J. David Dacus, R.A. in May 2008 analyzed the three complexes located at street addresses (from east to west) 1366, 1364, and 1384 Boulevard Way, and found no evidence to suggest that any of the buildings would qualify for listing as historic resources² (refer to **Appendix H**).

1366 Boulevard Way. The residential building located at 1366 Boulevard Way (APN 184-450-006) was built in 1919. The property contains a one-story wood frame house with an adjoining two-story addition, a one-story wood frame garage, a workshop, and a shed (see 1366 Boulevard Way on **Figure 4.4-1**).

² The historic resources report acknowledges that the addresses of the existing houses are out of sequence relative to their location.



1366 Boulevard Way



1364 Boulevard Way



1384 Boulevard Way

1364 Boulevard Way. The residence located at 1364 Boulevard Way (APN 184-450-012) was built in 1942. The one-story vacant building and adjacent single-car garage are currently in poor condition due to water damage and shoddy construction techniques and is considered unfit for living (see 1364 Boulevard Way on **Figure 4.4-1**).

1384 Boulevard Way. The residence at 1384 Boulevard Way (APN 184-450-007) was built in 1927. The building underwent substantial remodeling between 2002 and 2004 and most of the original exterior surfaces were replaced with contemporary materials and workmanship. Following the remodel, the structure became a triplex, each with a separate entrance, kitchen, and bath. In 2004, when the current owner took possession of the property, two of the three kitchens were removed to bring the home into compliance with County Code (see 1384 Boulevard Way on **Figure 4.4-1**).

4.4.2 Regulatory Setting

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into consideration the potential effects of proposed undertakings on cultural resources listed on or determined eligible for inclusion in the National Register of Historic Places (NRHP), and to allow the Advisory Council on Historic Preservation the opportunity to comment on the proposed undertaking. The regulations implementing Section 106 are promulgated by the Secretary of the Interior, as codified in Title 36 Code of Federal Regulations (CFR) Part 800. Section 106 requirements apply to properties not formally determined eligible, but which are considered to meet eligibility requirements.

Archaeological resources are typically considered eligible for inclusion in the NRHP because of the information they have or may be likely to convey. Intensity of impacts to archaeological resources relates to the importance of the information they contain and the extent of the disturbance or degradation.

Determining the NRHP eligibility of a site or district is guided by the specific legal context of the site's significance as set out in 36 CFR Part 60.4. The NHPA authorizes the Secretary of the Interior to expand a National Register of districts, sites, buildings, structures and objects of significance in American history, architecture, archaeology, engineering and culture. A property may be listed in the NRHP if it meets criteria for evaluation as defined in 36 CFR 60.4. Section 110 (d) (6) (A) of the NHPA allows properties of traditional religious and cultural importance to a tribe to be determined eligible for inclusion in the NRHP.

The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) that have yielded, or may be likely to yield, information important in prehistory or history.

California Environmental Quality Act

CEQA, as well as California Public Resources Code (PRC) Section 5024.1 (which established the California Register of Historic Resources (CRHR), discussed below), requires that projects take potential impacts on historical resources into account.

CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment³ and defines substantial adverse change as demolition, destruction, relocation, or alteration that would impair historical significance.⁴ Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the CRHR (see below for discussion of the CRHR) is presumed to be historically or culturally significant.

Resources listed in a local historic register or deemed significant in a historical resource survey, as provided under Section 5024.1(g), are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in, or determined to be eligible for listing in the CRHR, is not included in a local register of historic resources, or not deemed significant in a historical resource survey may nonetheless be historically significant.⁵ Even absent a formal eligibility determination by the Commission, however, a lead agency “generally” shall consider a resource to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources.

CEQA mandates that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project that

³ Section 21084.1 of the Public Resources Code

⁴ Section 5020.1

⁵ Section 21084.1 and Section 21098.1

demolishes or alters those physical characteristics of a historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance. However, a project that conforms to the Secretary of the Interior's Standards for the Treatment of Historic Properties can generally be considered a project that will not cause a significant impact.

California Register of Historic Resources

The California Office of Historic Preservation (OHP) administers the CRHR, which was established in 1992 through amendments to the Public Resources Code, to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected from substantial adverse change.

The CRHR includes resources that have been formally determined eligible for, or listed in, the NRHP, State Historical Landmarks and eligible Points of Historical Interest. Other resources require nomination for inclusion in the CRHR. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resources surveys conducted in accordance with the Office of Historic Preservation (SHPO) procedures, historic resources or districts designated under a local ordinance consistent with the State Historical Resources Commission (SHRC) procedures, and local landmarks or historic properties designated under local ordinance.

PRC Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, which is described above.

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- It is associated with the lives of persons important in our past;
- It embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- It has yielded, or may be likely to yield, information important in prehistory or history. (This last factor, Criterion D, is usually applied only to archaeological sites, rather than in the evaluation of most historic architectural structures.)

Automatic CRHR listings include NRHP-listed and determined eligible historic properties (either by the Keeper of the NRHP or through a consensus determination on a project review); California Historical Landmarks (CHLs) from number 770 onward; California Points of Historical Interest. CHLs with numbers prior to 770 and Points of Historical Interest designated after 1997 and are recommended by the SHRC may be listed in the CRHR through an action of the SHRC. No historical resource may be designated as both a Landmark and a Point. If a Point is subsequently granted status as a Landmark, the Point designation would be retired.⁶

Senate Bill 18

Senate Bill 18 (SB 18) requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting tribal cultural resources. SB 18 requires cities and counties to send any proposals for revisions or amendments to general plans and specific plans to those California Native American Tribes that are on the Native American Heritage Commission's (NAHC) contact list and have traditional lands located within the city or county's jurisdiction. Cities and counties must also conduct consultations with these tribes prior to adopting or amending their general plans or specific plans.

California Health and Safety Code

California Health and Safety Code Section 7050.5 regulates the procedure in the event of human remains discovery. Pursuant to Public Resources Code Section 5097.98, in the event of human remains discovery, no further disturbance is allowed until the County Coroner has made the necessary findings regarding the origin and disposition of the remains. If the remains are determined to be Native American, the Coroner is required to contact the NAHC. The NAHC is responsible for contacting the most likely Native American descendent, who will consult with the local agency regarding how to proceed with the remains. According to Section 15064.5 of the CEQA Guidelines, all human remains are a significant resource.

Contra Costa County General Plan

The Open Space Element of the Contra Costa General Plan contains the following relevant policies related to the protection of cultural resources:

- 9-32: Areas which are identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.

⁶ CAL/OHP ca. 1999b

- 9-33: Buildings or structures that have visual merit and historic value shall be protected.
- 9-34: Development surrounding areas of historic significance shall have compatible and high quality design in order to protect and enhance the historic quality of the area.

Policy Consistency Analysis

Pursuant to the NHPA, CRHR, and CEQA, the project site has been examined for cultural and historically significant resources; findings of this examination are discussed in detail in **Appendix H, Historic Resources Study**, and are summarized in **subsection 4.4.1, Existing Conditions**. No documented resources were known to exist on the project site. Per these studies, none of the structures on the project site would qualify for listing under the NHPA⁷ or the CRHR.

Although neither Project Variant entails a general plan amendment or would otherwise trigger any of the consultation requirements set forth in SB 18, Holman & Associates contacted three Native American individuals/groups listed by the NAHC in April 2008 to identify known tribal and cultural resources within the project area. No responses were received.

Should any Native American remains be uncovered during construction, the ultimately selected Project Variant will follow the procedures required by the California Health and Safety Code as outlined in **Impact 4.4-2** and **Mitigation Measure 4.4-2**. The Project Variants would therefore be consistent with these requirements.

The Project Variants would be in compliance with General Plan policies related to cultural resources. As previously stated, and in response to policy OS 9-33, existing structures on site are not eligible for listing in the NHPA or CRHR. Furthermore, the project site is not in an area identified for archaeological or historical significance and is therefore in compliance with policies OS 9-32 and OS 9-34.

4.4.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the *CEQA Guidelines* identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. A project would have a significant impact on cultural resources if it would:

⁷ Holman, Miley. Personal Communication. July 12, 2010.

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

Discussion of Significant Impacts

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact 4.4-1: Demolition of existing structures and construction activities could inadvertently damage previously unidentified historical, archaeological, and paleontological resources on the project site. (Less than Significant with Mitigation)

Historical Resources

Both Project Variants entail the demolition of three existing houses and several associated accessory buildings. These buildings are shown in **Figure 4.4-1**. These buildings do not qualify for listing under the CRHR due to the lack of historical associated events, association with lives of important persons, or distinctive characteristics of the three sites as well as the very extensive alterations, and, in some cases, damage to the original structures. **Appendix H** contains more detailed information about each of the existing structures. Because the buildings that would be demolished are not considered historical resources, the Project Variant ultimately selected would not impact any historical buildings.

However, there is a possibility that previously unidentified historical resources, such as whole or fragmentary ceramic, glass or metal objects, wood, nails, brick, or other materials may be located underground. Excavation, grading, and construction activities could damage or destroy these historical resources. Potential damage of previously undiscovered historical resources would be considered a significant impact. **Mitigation Measure 4.4-1** would reduce impacts to previously unidentified buried cultural (historical, archeological, or paleontological) resources.

Archaeological Resources

There are no recorded historic and/or prehistoric archaeological sites inside the project site borders, or within 500 feet of the project site. Per **Appendix H**, the project site is not located on Sacred Lands. Although archeological resources were not discovered during the archeological survey completed for the project site, there is still the potential for unidentified buried archaeological materials to be located on the site due to the close proximity of the project site to Las Trampas, Tice, and San Ramon Creeks. If archaeological materials are found on the project site, they could potentially be damaged or destroyed by grading or site excavation. **Mitigation Measure 4.4-1** measure would reduce potential impacts to unknown archeological resources during construction.

Paleontological Resources

Although no paleontological resources have been found within the borders of the project site, there is the potential to encounter previously unidentified buried paleontological resources during excavation. **Mitigation Measure 4.4-1** would address potential impacts to paleontological resources to ensure that any unanticipated impacts to paleontological resources would be mitigated.

Mitigation Measure 4.4-1: In the event that buried cultural (historical, archeological, and/or paleontological) resources are encountered, the Contra Costa County Department of Conservation and Development (DCD) shall ensure that construction, excavation, and/or grading activities within 100 feet of the find are temporarily halted until a qualified archaeologist or paleontologist, hired by the applicant, can assess the significance of the find and provide proper management recommendations to be incorporated in to the Project Variant ultimately selected. Prehistoric cultural materials include, but is not limited to, shell midden deposits, hearth remains, stone and/or shell artifacts, and/or burials. Historic materials, including but not limited to, whole or fragmentary ceramic, glass or metal objects, wood, nails, brick, or other materials may occur on the project site in deposits such as old privies or dumps. If the site is found to contain significant cultural or paleontological resources (as determined by the CEQA Guidelines) by a qualified archaeologist or paleontologist, funding shall be provided by the applicant to identify, record, report, evaluate, and recover the resources as necessary. Construction within the area of the find shall not recommence until impacts to the cultural or paleontological resource are mitigated. Additionally, as required by Public Resources Code Section 5097.993, the applicant must inform project personnel that collection of any Native American artifact is prohibited by law.

Significance after Mitigation: Less than significant. This mitigation sets forth direction to ensure that any previously unidentified/unrecorded cultural resources that may be found on the project site are properly identified and construction is

halted until unanticipated discoveries are properly handled. The implementation of **Mitigation Measure 4.4-1** would reduce impacts to historic period cultural resources, archaeological resources, and paleontological resources to a less-than-significant level.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries.

Impact 4.4-2: Construction activities could inadvertently uncover human remains. (Less than Significant with Mitigation)

There are no known human remains on the project site. However, similar to other cultural materials, excavation on the site could unearth previously undiscovered human remains. CEQA Guidelines Section 15064.5(e) (1) provides regulations that would reduce the impacts to previously unknown human remains to a less-than-significant level.

If human remains of Native American origin are discovered on the project site during grading and/or construction, it would be necessary to comply with regulations governing the disposition of Native American remains, set forth by the State of California and administered by the NAHC.⁸

Mitigation Measure 4.4-2 would mitigate impacts related to the potential disturbance of human remains on the project site.

Mitigation Measure 4.4-2: In accordance with Public Resource Code Section 5097.98, should human remains be found on the site at any time during pre-construction or construction activities, the Contra Costa County Department of Conservation and Development (DCD) shall ensure that no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall be disturbed until:

- The County Coroner in which the remains are discovered is contacted and determines that no investigation of the cause of death is required; and
- If the County Coroner determines the remains to be Native American then:
 - (1) The coroner shall contact the Native American Heritage Commission within 24 hours;
 - (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased native American; and

⁸ Public Resources Code Section 5097.98

- (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

The landowners or their 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 subsurface disturbance if the following conditions occur:

- The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission;
- The descendent identified fails to make a recommendation; or
- The landowners or their authorized representative reject the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

Significance after Mitigation: Less than significant. Implementation of these mitigation measures would ensure compliance with the requirements of Section 15064.5 of the State CEQA Guidelines,⁹ which dictate the actions that shall be taken in the event that human remains are discovered outside of a dedicated cemetery. Compliance with the provisions of the guidelines would reduce the significant impact to unknown archeological material and human remains in the project area to a less-than-significant level.

⁹ CEQA Guidelines, Section 10564.5, subd. (e)

4.5 GEOLOGY AND SOILS

This section discusses the geology and soils of the project area and the potential risks associated with known geologic hazards. This section also assesses potential impacts from seismic and geologic hazards that may occur as a result of the Project Variants. Information in this section was drawn from a Geotechnical Engineering Investigation Report and an Additional Foundations Recommendations letter prepared by DCM Engineering, both included as **Appendix I**.

Several comments related to geology and soils were received in response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR). These comments, included within **Appendix A**, include several questions about soil stability in the area, and potential effects associated with the excavation proposed as part of both Project Variants, including effects on adjacent structures and effects on groundwater. Commenters also expressed concern regarding the possible use of wells and/or septic tanks. The impact discussions in **subsection 4.5.3** address these points.

Review of the plans indicates that Project Variant A and Project Variant B would have similar effects related to geology and soils. Either variant involves modifications to the same physical amount of property and there is no foreseeable geologic related benefit or risk associated with the variants. Therefore, the variants are not separately evaluated in this section.

4.5.1 Existing Conditions

Seismic and Geological Conditions

Geologic Units

Mapping of surficial deposits and bedrock in the project area indicate Pleistocene and Holocene age alluvial deposits overlying Miocene age Briones formation bedrock. The Pleistocene and Holocene deposits are semi-consolidated to unconsolidated poorly sorted gravel, sand, silt and clay distributed in isolated patches throughout the County. These deposits are unrelated to modern drainages and are most abundant in the Walnut Creek-Concord Valley. **Appendix I** presents detailed descriptions of geologic deposits and bedrock along with maps outlining their general distribution on the project site.

Soils

Soil is generally defined as the unconsolidated mixture of mineral grains and organic material that mantles the land surface. Soils can develop on unconsolidated sediments

and weathered bedrock. According to the Geotechnical Engineering Investigation Report, subsurface soil conditions at the project site consisted of variable thicknesses of clayey fill soils overlying interlayered native clayey and sandy soils, overlying siltstone/claystone bedrock.

Seismicity

The project site is located within the seismically active San Francisco Bay Area and is not crossed by mapped traces of active faults. **Table 4.5-1** lists the major historically active faults within 9.3 miles (mi) of the project site.

The US Geological Survey estimated that there was a 62 percent probability that by 2032, a 6.7 or greater magnitude earthquake will occur in the San Francisco Bay Area Region. The probability of a 6.7 magnitude or greater earthquake occurring along individual faults was estimated to be at 11 percent along the Calaveras Fault, four percent along the Concord/Green Valley Fault, 27 percent along the Hayward Fault, and three percent along the Greenville Fault.

Table 4.5-1 Active Faults in the Vicinity of the Project

Fault	Closest Distance to Project Site (mi)	Probability of 6.5 Magnitude (or greater) Earthquake
Calaveras (north)	3.1	11%
Concord/Green Valley	4.7	4%
Hayward	8.4	27%
Greenville	9.3	3%

Source: DCM, 2007.

Seismic Hazards

Surface rupture

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active major fault trace. The project site is not crossed by an active fault, nor is it located within a State of California Alquist-Priolo Special Studies Zone.

Ground shaking

Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions.

Magnitude is a measure of the energy released by an earthquake which is assessed by a seismograph.

Intensity is a subjective measure of the perceptible effects of seismic energy at a given point and varies with distance from the epicenter and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of the subjective effects of earthquake intensity (**Table 4.5-2**). Intensity can also be quantitatively measured using accelerometers (strong motion seismographs) that record ground acceleration at a specific location, a measure of force applied to a structure under seismic shaking. Acceleration is measured as a fraction or percentage of the acceleration under gravity (g).

The Hayward Fault is considered capable of generating a magnitude 6.5 (M_w) earthquake.¹ A 6.5 (M_w) event on the Hayward Fault could be capable of generating strong (VII) to very strong (VIII) seismic shaking on the project site. An earthquake along the Calaveras Fault could also generate strong (VII) to very strong (VIII) seismic shaking on the project site.²

Liquefaction

Liquefaction is a phenomenon in which soils lose internal strength as a result of increased pore pressure generated by cyclic loading. This behavior is commonly induced by ground shaking during earthquakes. Soils which are susceptible to liquefaction are generally saturated, non-cohesive silts and sands of low to medium density. Saturated sandy soils present at the project site are not considered to pose a significant liquefaction risk. These soils were medium-dense to dense and had significant clay content.

With regard to liquefaction potential, the Safety Element of the Contra Costa County General Plan divides the County into three categories: generally high, generally moderate to low, and generally low. According to this map, the project site is in the generally low category.³ This is consistent with the findings in the Geotechnical Report.

¹ In the past, the common standard for measurement of magnitude (M_L) by geologists and earthquake seismologists was the Richter Scale. However, due to limitations of the instrumentation used to measure Richter magnitude, moment magnitude (M_w) is now commonly used to characterize seismic events. Moment magnitude is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance of the rock type along the fault to rupture. The moment magnitude can be calculated following an earthquake or estimated for an expected earthquake if the fault rupture area and displacement and rock properties can be estimated accurately. Therefore, the magnitudes of expected earthquakes in the San Francisco Bay Area are reported as moment magnitudes.

² ABAG, 2010.

³ Contra Costa County General Plan, 2005. Figure 10-5.

Table 4.5-2 Modified Mercalli Intensity (MMI) Scale

MMI Scale	Description
I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: California Geological Survey, 2002, How Earthquakes and Their Effects are Measured, Note 32.

Geologic Hazards

Soil Erosion

Soil erosion is a natural process that can be caused by wind or water. Eroded soils can be entrained in storm water runoff and be discharged to surface waters, thereby affecting the water quality of receiving waters. Stormwater runoff quality both during and after construction is regulated by the National Pollutant Discharge Elimination System (NPDES) program, which is established through the Federal Clean Water Act. The NPDES program objective is to control and reduce pollutant discharge to surface water bodies. In California, the NPDES program is administered by the State Water Resources Control Board (SWRCB), with local oversight provided by the Regional Water Quality Control Boards (RWQCB).

Expansive Soils

Expansive soils can expand and contract when undergoing alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to buildings and infrastructure may occur if the potentially expansive soils were not considered in project design and during construction. According to the Soil Survey of Contra Costa County, the soil on the project site is tierra loam. With regard to its engineering properties, it has low strength when wet, a moderate to high shrink-swell potential (which can lead to expansion) and a moderately slow permeability to liquids.

Six soil borings were taken in 2007 to provide more specific information about the soil at the project site. The borings revealed that the site contains 20-30 feet of alluvial deposits consisting of clay and silty clay interbedded with sand and gravel. Clay and associated materials can result in weak, compressible, or expansive soils.

Elevation

The project site is relatively flat, with a slight (2.5 percent) grade that generally descends to the east. The portions of the project site currently occupied with single-family residences slope slightly to the north toward Boulevard Way. The existing ground surface elevation within the building footprint varies from about Elevation 230 (east side) to about Elevation 240 (west side).

Settlement and differential settlement

Differential settlement or subsidence could occur if buildings or other improvements were built on low-strength foundation materials (including imported fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Although differential settlement

generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time. The project site does not contain loose or uncontrolled fill that would be susceptible to differential settlement.

4.5.2 Regulatory Setting

California Building Standards Code

Contra Costa County enforces the 2007 California Building Codes (CBC) and requires all development within the County to comply with the most current CBC standards. Title 24 of the California Code of Regulations, also known as the California Building Standards Code, sets minimum requirements for building design and construction. The 2007 version of the California Building Standards Code are effective as of January 1, 2008. The California Building Standards Code is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

In the context of earthquake hazards, the California Building Standards Code's design standards have a primary objective of assuring public safety and a secondary goal of minimizing property damage and maintaining function during and following seismic events. The 2007 version of the California Building Standards Code differs significantly from the previous versions of the code. The 2007 code assigns a seismic design category (SDC) to each structure. The SDC is assigned as a means of capturing both the seismic hazard, in terms of mapped acceleration parameters (spectral values), site class (defining the soil profile), and the occupancy category (based on its importance or hazardous material contents). The SDC affects design and detailing requirements as well as the structural system that may be used and its height.

Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazards of surface faulting. The act's main purpose is to prevent the construction of buildings used for human occupancy on any surface trace of an active fault.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The act directs the U.S. Department of Conservation to identify and map areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. Within the Zones of Required Investigation, the act requires site-specific geotechnical investigations to identify potential seismic hazards and to formulate mitigation measures prior to permitting most developments designed for human occupancy.

Contra Costa County General Plan

The Safety Element of the General Plan contains the following relevant policies related to geology and soils:

Safety Element

- 10-3: Because the region is seismically active, structures for human occupancy shall be designed to perform satisfactorily under earthquake conditions.
- 10-5: Staff review of applications for development permits and other entitlements, and review of applications to other agencies which are referred to the County, shall include appropriate recommendations for seismic strengthening and detailing to meet the latest adopted seismic design criteria.
- 10-6: Structures of human occupancy, and structures and facilities whose loss would substantially affect the public safety or the provision of needed services, shall not be erected in areas where there is a high risk of severe damage in the event of an earthquake.
- 10-10: Policies regarding liquefaction shall apply to other ground failures which might result from groundshaking but which are not subject to such well-defined field and laboratory analysis.
- 10-19: To the extent practicable, the construction of critical facilities, structures involving high occupancies, and public facilities shall not be sited in areas identified as having a high liquefaction potential, or in areas underlain by deposits classified as having high liquefaction potential.
- 10-20: Any structures permitted in areas of high liquefaction danger shall be sited, designed and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.

10-21: Approvals to allow the construction of public and private development projects in areas of high liquefaction potential shall be contingent on geologic and engineering studies which define and delineate potentially hazardous geologic and/or soils conditions, recommend means of mitigations these adverse conditions; and on proper implementation of the mitigation measures.

10-27: Soil and geological reports shall be subject to the review and approval of the County Planning Geologist.

Policy Consistency Analysis

Seismic shaking

This EIR includes mitigation to ensure compliance with applicable General Plan policies. The Project Variant ultimately selected would be constructed in conformance with the most recent version of the California Building Code, as specified in **Mitigation Measure 4.5-1**, to minimize potential impacts of ground shaking and plans shall be reviewed and approved by the County prior to construction, consistent with policies 10-3, 10-5, 10-6, and 10-27.

Liquefaction

As noted in **subsection 4.5.1**, soils on the project site have low potential for liquefaction according to the Geotechnical Engineering Investigation Report, so the Project Variant ultimately selected would not expose people or structures to a significant liquefaction risk. The Project Variants are therefore consistent with policies 10-19, 10-20, and 10-21.

Other geologic hazards

Soil on the project site could become potentially unstable during excavation activities. Soil and groundwater conditions shall be monitored on the project site and neighboring sites prior to, during, and after construction as required by **Mitigation Measures 4.5-2** through **4.5-4**. These soil stability requirements would be consistent with policy 10-10.

4.5.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As identified in Appendix G, a project would have a significant geology and soils impact if it would:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - ii. Seismic-related ground failure, including liquefaction;
 - iii. Landslides; or
 - iv. Strong seismic ground shaking;
- b) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;
 - c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off site landslide, lateral spreading, subsidence, liquefaction or collapse;
 - d) Result in substantial soil erosion or the loss of topsoil; or
 - e) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the eight significance criteria stated above shows that no impacts would result for four of the criteria. The following discussion presents the evidence in support of this conclusion.

a) i. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated by the most recent Alquist-Priolo Earthquake Fault Zoning Map?

The project site is not located in an area identified as an Alquist-Priolo Earthquake Fault Zone. Therefore, neither Project Variant would expose people or structures to potential substantial adverse effects from a known earthquake fault zone.

a) ii. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failures, including liquefaction?

The project site is at low risk for liquefaction. The subsurface investigation performed as part of the Geotechnical Engineering Investigation Report for the Project Variants did not encounter any layers of saturated non-cohesive silts or loose clean sands. Saturated sandy soils, where encountered, had significant clay content, were medium-dense to dense, and were not considered to pose a significant liquefaction risk.

Due to the type of soils present, the project site has a very low liquefaction hazard and would not expose people or structures to a significant liquefaction risk. No mitigation is required.

a) iii. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site is mostly flat with a 2.5 percent slope. According to the Contra Costa County General Plan, the project site is not located in an area prone to landsliding. Since the project site is not susceptible to slope instability, neither Project Variant would expose people or structures to a significant risk of landslides.

b) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project site would connect to the Central Contra Costa County Sanitary sewer system further discussed in **Section 4.14, Utilities and Service Systems**. Neither Project Variant includes septic tanks.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the eight significance criteria stated above shows that less-than significant impacts would result for one of the criteria.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off site landslide, lateral spreading, subsidence, liquefaction or collapse?

Excavation required to construct the underground portion of the sanctuary would be at or below the water table, likely requiring dewatering⁴ during construction. According to the Geotechnical Engineering Investigation Report, drainage trenches with appropriately sized sump pumps would be adequate to provide a reasonably dry and stable excavation bottom. Therefore, dewatering activities are not anticipated to result in land subsidence of adjacent properties. Impacts related to the potential for subsidence to occur are therefore considered less than significant.

⁴ Dewatering is the removal or draining of groundwater from the construction site generally by pumping or using a vacuum.

Discussion of Significant Impacts

a) iv. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Impact 4.5-1: Either Project Variant could expose people and structures to potential adverse effects from strong seismic ground shaking. (Less than Significant with Mitigation Incorporated)

Earthquakes along several nearby active faults in the region could cause moderate to strong ground shaking at the project site. The ground shaking intensity at the project site during a major earthquake in the San Francisco Bay Area is estimated at a level VII or VIII on the Modified Mercalli Intensity Scale. (See **Table 4.5-2** for a description of the Modified Mercalli Intensity Scale.) The intensity of the earthquake ground motions and the damage done by them would depend on the characteristics of the generating fault, distance to the fault and rupture zone, earthquake magnitude, earthquake duration, and site-specific geologic conditions. **Mitigation Measure 4.5-1** would address potential impacts related to seismic ground shaking.

Mitigation Measure 4.5-1: Prior to the issuance of a building permit, the County Building Official shall verify that plans incorporate the following CBC seismic site categorization and design coefficients, in conformance with the most recent version of the California Building Code:

Table 4.5-3 CBC Seismic Site Categorization and Design Coefficients

Categorization/Coefficient	Design Value
Site Class (Table 1613.5.2)	C
0.2 Second Spectral Response Acceleration, S_s (Figure 1613.5(3))	1.5g
1.0 Second Spectral Response Acceleration, S_1 (Figure 1613.5(4))	1.6g
Seismic Site Coefficient, F_a (Table 1613.5.3(1))	1.0
Seismic Site Coefficient, F_v (Table 1613.5.3(2))	1.3
Long-period Transition Period, T_1 (Figure 22-6) ¹	1.0

¹ From ASCE/SEI 7-05 (2006)

Source: DCM Engineering, October 2008.

The County Building Official shall certify that a qualified geotechnical engineer has reviewed final plans and specifications for consistency with CBC and UBC design standards. The County Building Official shall verify that all pertinent recommendations of the geotechnical engineer are incorporated into final building plans.

Significance after Mitigation: Less than significant. **Mitigation Measure 4.5-1** would reduce the exposure of people and structures to potential adverse impacts resulting from seismic-related ground shaking to a less-than-significant level.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off site landslide, lateral spreading, subsidence, liquefaction or collapse?

Impact 4.5-2: The project site is located on soil that could become unstable as a result of construction activities, and potentially result in instability on neighboring sites. (Less than Significant with Mitigation Incorporated)

Excavation on the project site would occur to a depth of approximately 18 feet on the east side and 23 feet on the west side of the project site. The depth of excavation could result in damage to the parsonage and neighboring structures if proper shoring is not implemented.

To ensure that lateral support is maintained for existing structures on the project site and structures adjacent to the project site during excavation, implementation of **Mitigation Measures 4.5-2a** through **4.5-2c** would address construction worker safety and potential damage to neighboring structures:

Mitigation Measure 4.5-2a: Prior to the issuance of a grading permit, the County Building Official shall direct the applicant or their contractor to complete the following actions:

- inspect existing structures/utilities to document any evidence of existing damage, cracking, distortion, weaknesses in structural elements, deterioration, corrosion, excessive stress, overloading, or use of the structure in a manner which may not have been intended by its design prior to issuance of any construction permits. The inspection shall include an assessment of the condition of the following structures and facilities:
 - the parsonage
 - structures on neighboring properties
 - Boulevard Way
 - potentially affected utilities within the project site, as determined by a qualified engineer

All inspections and notations of pre-existing damages shall be thoroughly documented prior to the issuance of a demolition or grading permit by photographs and mapping, and reference markings or measurement points shall be established on critical or previously damaged structures/utilities to assist in determining whether any damage or movement has occurred as a result of construction.

Where existing structures are in close proximity to the excavation, additional measures beyond pre-construction inspection, such as building underpinning, shall be required as determined by the geotechnical consultant.

Mitigation Measure 4.5-2b: Prior to the issuance of a grading permit, the County Geologist shall review the final plans to ensure that proposed excavation shoring and dewatering systems meet minimum performance requirements. These minimum performance requirements include:

- a. Protect personnel that enter excavations;
- b. Protect adjacent existing utilities, pavements, and structures;
- c. Installation should not cause settlement or heave of the ground surface nor produce construction vibrations that could damage adjacent utilities or structures;
- d. Prevent caving or lateral movement of excavation walls and associated loss of adjacent ground and adjacent ground surface settlement, even when subjected to construction vibration;
- e. Prevent heave and or piping (boiling) of the excavation bottom; and
- f. Where applicable, resist hydrostatic pressures and lateral loads for adjacent structural foundations, vehicular traffic, construction equipment and spoils.

Mitigation Measure 4.5-2c: Prior to the issuance of a grading permit, the County Building Official shall ensure that grading plans show a requirement that a qualified geotechnical engineer monitor and document soil and groundwater conditions on an ongoing basis during excavation, grading, and construction. The geotechnical engineer shall anticipate changes and modifications to shoring systems and sloping (on the west side) in response to changes in soil and groundwater conditions. All sheeting and shoring shall be evaluated for stability by the geotechnical consultant prior to entry by personnel. The County Building Official and County Geologist shall review and consider the recommendations of the geotechnical engineer and incorporate any or all recommendations into final grading plans.

Significance after Mitigation: Less than significant. The implementation of **Mitigation Measures 4.5-2a, 2b, and 2c** would reduce the risks to the Project Variant ultimately selected associated with unstable soils to a less-than-significant level.

d) Would the project result in substantial soil erosion or the loss of topsoil?

Impact 4.5-3: Either Project Variant would result in substantial soil erosion. (Less than Significant with Mitigation Incorporated)

Substantial excavation would be required to construct the underground portion of the sanctuary building, creating the potential for significant soil erosion. Once construction is complete, the potential for soil erosion on the project site would be minimal.

Because soil erosion during construction activities could increase sedimentation to Las Trampas Creek and adversely affect its water quality, **Section 4.8, Hydrology and Water Quality**, contains construction-period soil erosion control measures, as required by the NPDES program, that would prevent significant soil erosion and sedimentation throughout construction (**Mitigation Measure 4.8-2**). Implementation of these best management practices would reduce potential soil erosion to a less-than-significant level.

Significance after Mitigation: Less than significant. Implementation of the best management practices found in **Mitigation Measure 4.8-2** would reduce potential soil erosion impacts to a less-than-significant level.

e) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Impact 4.5-4: Either Project Variant would be located on expansive soils that could create a risk to life and property. (Less than Significant with Mitigation Incorporated)

The soils at the project site are highly expansive, which may cause distress in floors and foundations over time. Issues related to expansive soils can be controlled through implementation of construction specifications related to fill material, compaction, and moisture content.

The implementation of standard building specifications can ensure that settlement of the religious facility building footings would be less than one inch, with differential settlements less than 0.5 inches, indicating that this impact can be mitigated to a less-than-significant level.

Mitigation Measure 4.5-4a: Prior to the issuance of a grading permit, the County Building Official shall ensure that plans for building foundations have been reviewed by a qualified geotechnical engineer to ensure measures are included to reduce potential future structural damage to the religious facility from expansive soils. Such measures shall include but are not limited to minimum requirements for the expansion potential of fill material, soil compaction, and soil moisture content. The

County Building Official and County Geologist review and approval shall ensure that all pertinent recommendations of the geotechnical engineer are incorporated into final grading plans.

Mitigation Measure 4.5-4b: Prior to the issuance of a building permit, the County Building Official shall ensure that plans are revised as necessary to show that foundations for the new facility consist of a reinforced concrete floor slab or a mat slab, consistent with recommendations of the County Geologist.

Significance after Mitigation: Less than significant. The implementation of **Mitigation Measures 4.5-4a** and **4.5-4b** would ensure that expansive soils are properly controlled through specific requirements related to fill material, compaction, and moisture content, reducing potential impacts resulting from expansive soils to a less-than-significant level.

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4.6 GREENHOUSE GAS EMISSIONS AND ENERGY

This section describes the science behind greenhouse gases (GHG) and analyzes potential GHG emissions. The section describes the regulatory framework for management of global climate change on a federal, state, regional, and local level.

Appendix J contains calculations for determining the greenhouse gas emissions. This section also describes energy conservation considerations consistent with Appendix F of the CEQA Guidelines.

For the purposes of this analysis, Project Variant A and Project Variant B were considered to have the same level of impacts to greenhouse gas emissions and energy as the differences between the variants do not substantially influence estimated levels of greenhouse gas emissions.

4.6.1 Existing Conditions

Greenhouse Gas Emissions

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

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during the project's demolition, construction and operational phases. The principal GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO_x), ozone (O₂),¹ and water vapor. While the primary GHGs in the atmosphere are naturally occurring, CO₂, CH₄, and NO_x are largely emitted from human activities, accelerating the rate at which these compounds occur within the earth's atmosphere.

Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Other GHGs, with much greater heat absorption potential than CO₂, include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

¹ Ozone is not directly emitted, but is formed from other gases in the troposphere, the lowest level of the earth's atmosphere. Ozone also contributes to the retention of heat.

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss of snow pack, sea-level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.² Secondary effects are likely to include global rise in sea-level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

The California Air Resources Board (ARB) estimated that in 2008 California produced about 478 million gross metric tons (about 527 million U.S. tons) of CO₂ equivalent (CO₂e) GHG emissions.³ The ARB found that transportation is the source of 36 percent of the State's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 24 percent and industrial sources at 19 percent. Commercial and residential fuel use (primarily for heating) accounted for 9 percent of GHG emissions.⁴ In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately 36.41 percent of the Bay Area's 95.8 million tons of GHG emissions in 2007. Industrial and commercial sources (including office and retail uses) were the second largest contributors of GHG emissions with about 36.40 percent of total emissions. Electricity production accounts for almost 16 percent of the Bay Area's GHG emissions, followed by domestic sources (e.g., home water heaters, furnaces, etc.) at approximately 7 percent. Off-road equipment and farming accounts for approximately 4 percent of the total Bay Area GHG emissions.⁵

On a per-person basis, GHG emissions are lower in California than most other states; however, California is a populous state, and the second largest emitter of GHG in the United States, making it one of the largest emitters in the world. Under a "business as usual" scenario,⁶ emissions of GHG in California are estimated to increase to approximately 600 million metric tons of CO₂e by 2020, a 44 percent increase over current emissions.

According to the BAAQMD, Contra Costa County is the highest emitter of CO₂e in the Bay Area. Industrial and commercial uses account for approximately 61 percent of emissions, followed by electricity generation at 18 percent and transportation at 15

² California Air Resources Board, 2006.

³ Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents (or CO₂e)," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

⁴ California Air Resources Board, 2010.

⁵ Bay Area Air Quality Management District, 2010b.

⁶ According to the ARB Scoping Plan, business as usual means "assuming none of the greenhouse gas reduction measures suggested in the California Air Resource Board Scoping Plan were implemented."

percent. Petroleum refining activities in the north and west county are a substantial contributor to industrial-based emissions. No such generators are located in the immediate project area.

Gas and Electricity

Electrical and gas services in the project vicinity are provided by Pacific Gas & Electric Company (PG&E). PG&E obtains power generated from various sources, including fossil fuels, hydroelectric, nuclear, wind, and geothermal plants. This energy is fed into the electrical grid system serving Northern California.

Natural gas is supplied to the project site via a number of gas transmission lines located in east Contra Costa County. As with electricity demand, PG&E does not use a standard multiplier for estimating the demand for natural gas, and instead calculates by reviewing new service applications.

PG&E's electricity is generated by the following sources:⁷

- Natural Gas – 39 percent
- Nuclear – 22 percent
- Large Hydroelectric – 16 percent
- Renewable Energy – 14 percent
- Coal – 8 percent
- Other – 1 percent

4.6.2 Regulatory Setting

Federal Regulations

In December 2009, in response to a U.S. Supreme Court ruling, the U.S. Environmental Protection Agency (U.S. EPA) made a finding under the federal Clean Air Act (CAA) that current and projected atmospheric concentrations of the six generally recognized GHGs (CO₂, CH₄, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) “threaten the public health and welfare of current and future generations,” and that emissions of these gases from new cars and trucks “contribute to the greenhouse gas pollution which threatens public health and welfare” (EPA n.d.).

⁷ PG&E Corporation. 2008. 2008 Corporate Responsibility Report. Available at http://www.pge-corp.com/corp_responsibility/reports/2008/index.html

While not imposing any regulatory requirements, this “endangerment finding” under the federal CAA is required before U.S. EPA can issue regulations, and will allow the agency to adopt GHG emissions standards that it proposed in September 2009.

In conjunction with U.S. EPA, the National Highway Traffic Safety Administration of U.S. Department of Transportation (DOT) anticipate that joint rulemaking for new heavy-duty engines and vehicles will be proposed in Fall 2010, finalized by July 2011, and would begin with model year 2014. DOT has proposed new fuel economy standards that would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The proposed DOT standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO₂ level entirely through fuel economy improvements.⁸ To address light-duty vehicles, U.S. EPA and DOT issued a Notice of Intent by September 30, 2010, announcing plans for setting stringent light vehicle standards for model year 2017 and beyond, consistent with the respective statutory authorities.⁹

The DOT published a Draft Environmental Impact Statement for proposed Corporate Average Fuel Economy (CAFE) Standards; the comment period closed November 9, 2009.¹⁰ In a related action, in June 2009, EPA granted California a waiver under the federal CAA, allowing the state to impose its own, stricter GHG regulations for vehicles beginning in 2009.

State Regulations

Greenhouse Gas Emissions

The State of California has been at the vanguard of state efforts to regulate and reduce GHG emissions and to plan for the effects on global climate change. The state recognizes that “there appears to be a close relationship between the concentration of greenhouse gasses in the atmosphere and global temperatures” and that “the evidence for climate change is overwhelming.”¹¹ The effects of climate change on California remain uncertain.

⁸ U.S. EPA, 2009.

⁹ U.S. EPA, 2010.

¹⁰ National Highway Traffic Safety Administration, 2009.

¹¹ California Air Resources Board. 2003. Background: The Greenhouse Effect and California. Available at <http://www.arb.ca.gov/cc/factsheets/ccbackground.pdf>.

Assembly Bill 32 – The California Global Warming Solutions Act of 2006

In 2006, the Governor signed Assembly Bill (AB) 32, the Global Warming Solutions Act. AB 32 requires that California cap its GHG emissions at 1990 levels by 2020. This law requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 establishes a timetable for the ARB to adopt emission limits, rules, and regulations designed to achieve the intent of the Act. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels or about 10 percent from today's levels. On December 11, 2008, ARB approved a Scoping Plan to meet the 2020 GHG reduction limits outlined in AB 32. The Scoping Plan estimates a reduction of 174 million metric tons (about 191 million U.S. tons) of CO₂e.

Measures that could become effective during Project Variant implementation pertain to construction-related equipment and building and appliance energy efficiency. Some proposed measures will require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA). Some applicable measures that are ultimately adopted will become effective during construction and operation and both Project Variants would be subject to these requirements.

While ARB has identified a GHG reduction target of 15 percent from current levels for actions by local governments themselves, it has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions. The Scoping Plan states that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. Many of the measures in the Scoping Plan, such as implementation of increased fuel efficiency for vehicles (the "Pavley" standards), increased efficiency in utility operations, and development of more renewable energy sources, require statewide action by government, industry, or both. Some of the measures are at least partially applicable to development projects, such as increasing energy efficiency in new construction, installation of solar panels on individual building roofs, and a "green building" strategy.

California's Regional Transportation and Land Use Planning Efforts (Senate Bill 375)

In addition to policy directly guided by AB 32, in 2008 the legislature passed Senate Bill (SB) 375, which provides for regional coordination in land use and transportation to incorporate a “sustainable communities strategy” into regional transportation plans that will achieve GHG emission reduction targets set by ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. The Metropolitan Transportation Commission’s (MTC) 2013 Regional Transportation Plan (RTP) will be its first plan subject to SB 375.

SB 375 requires ARB to establish regional GHG reduction targets for GHGs. ARB appointed a 21-member Regional Targets Advisory Committee to recommend factors to be considered and methodologies used in setting the regional goals; this committee provided its recommendations to ARB in September 2009.

California Green Building Standards Code (CALGreen)

Adopted by the State Building Standards Commission in January 2010, CALGreen supplements the California Building Standards Code (Title 24) and will, upon taking effect on January 1, 2011, require all new buildings in the state to incorporate energy saving features. New standards include the following:

- **Water efficiency:** New buildings must demonstrate at least a 20 percent reduction in water use over typical baseline conditions.
- **Construction waste:** At least 50 percent of construction waste must be recycled, reused, or otherwise diverted from landfilling.
- **Interior finishes:** Interior finishes such as paints, carpet, vinyl flooring, particle board, and other similar materials must be low-pollutant emitting.
- **Landscape irrigation:** In nonresidential buildings, separate water meters must be provided for a building’s indoor and outdoor water use. Large landscape projects must use moisture-sensing irrigation systems to limit unnecessary watering.

Energy

State of California Executive Order S-14-08

In November 2008, the Governor of California signed Executive Order S-14-08 which raises California’s renewable energy goal to 33 percent by 2020. It also simplifies the licensing process for renewable energy projects.

California’s Renewable Energy Portfolio Standard Program (Senate Bills 107 and 1078)

The State of California established its Renewable Energy Portfolio Standard Program under Senate Bill 1078 (SB 1078) in 2002, which originally included a goal of increasing the percentage of renewable energy in the state’s electricity mix to 20 percent by 2017. Senate Bill 107 (SB 107) requires investor-owned utilities, such as PG&E, to meet the 20 percent renewable energy goal by 2010. In 2009, PG&E served 14.4 percent of its load with renewable energy. PG&E is expected to meet the 20 percent renewable energy goal by 2011. As of 2005, the most recent Energy Action Plan in the state raised the renewable energy goal to 33 percent by 2020.

Policy Consistency Analysis

Pursuant to State regulations (AB 32, SB 375), this EIR includes a quantitative assessment of GHG emissions directly or indirectly caused by the project (see **Chapter 6, Cumulative Impacts**). Additionally, state agencies have developed strategies to help meet the goals set forth in AB 32. **Table 4.6-1** provides a summary of the Project Variants’ consistency with the relevant standards and strategies to reduce GHG emissions.

In addition, the either Project Variant ultimately selected will be required to comply with State Green Building Code requirements as these requirements went into effect January 1, 2011.

The regulations pertaining to energy do not require an evaluation of consistency. However, they are important to note as the both Project Variants would receive electricity from PG&E which is required to meet the renewable energy goal.

Table 4.6-1 Consistency with Applicable California Climate Change Emission Reduction Strategies

Responsible Agency	Strategy	Consistency
California Air Resources Board	AB32 SB 375	Consistent: This EIR includes a quantitative assessment of GHG emissions (see Chapter 6, Cumulative Impacts) based on the BAAQMD CEQA Guidelines (see subsection 4.6.3, Impacts and Mitigation Measures) which were developed in accordance with AB32 and SB375.
Department of Water Resources	Water Use Efficiency	Consistent: Both Project Variants would incorporate drought-resistant trees and plants to reduce the need for irrigation water.

Responsible Agency	Strategy	Consistency
Integrated Waste Management Board	Achieve 50% Statewide Recycling Goal and Zero Waste High Recycling	Consistent: As discussed in Section 4.14, Utilities and Service Systems , solid waste would go to the Keller Canyon Landfill. This landfill converts methane gas into energy. Consistent with the County's compliance with AB 939, either Project Variant would be required to divert 50 percent of all construction waste.
Department of Forestry	Urban Forest	Consistent: Either Project Variant would remove up to 36 trees plus a possible additional 7 trees if an adjacent property is purchased in the future, but would plant 165 new trees, for a net increase of at least 129 trees.
Department of Transportation	Measures to Improve Transportation Efficiency	Consistent: Both Project Variants would include a Transportation Demand Management (TDM) program which emphasizes walking, biking, and carpooling.
California Energy Commission	Energy Efficiency measures	Consistent: The proposed sanctuary building incorporates a light-colored roof; this will absorb less heat energy than a dark roof, thereby reducing cooling costs. The sanctuary building also includes a Heating, Ventilation, and Air Conditioning (HVAC) system that would use approximately 50 percent of the energy that a typical HVAC system uses.

Source: CirclePoint, 2011; Climate Action Team Biennial Report, March 2009.

4.6.3 Impacts and Mitigation Measures

Significance Criteria

Energy significance determinations utilized in this section are based on Appendix F of the CEQA Guidelines. A significant impact would occur if implementation of a project would:

- a) Result in a wasteful, inefficient and unnecessary use of energy; or
- b) Result in a significant demand on regional energy supply or requirements of substantial additional capacity.

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. A project would have a significant greenhouse gas impact if it would:

- c) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- d) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD *CEQA Guidelines* further provide that a development project, other than a stationary source, would exceed the above thresholds and have significant cumulative impact on greenhouse gases unless:

- The project can be shown to be in compliance with a qualified Climate Action Plan;
- Project emissions of CO₂e is less than 1,100 metric tons per year; or
- Project emissions of CO₂e are less than 4.6 metric tons per year per service population (residents plus employees).

The operational and construction GHG emissions are quantified on a CO₂e basis and compared against the 1,100 metric tons of CO₂e/yr threshold noted above.

The County does not have a Climate Action Plan or other local policies and regulations adopted for the purpose of reducing the emissions of GHG. Therefore, the analysis is based upon whether the project by itself would impede or conflict with the emissions reduction targets strategies prescribed in or developed to implement AB 32.

Methodology

Greenhouse Gas Emissions

According to the BAAQMD, no single land use project could, by itself, generate sufficient GHG emissions to noticeably change the global average temperature (BAAQMD, 2010). Therefore, GHG emissions are recognized exclusively as potential cumulative impacts.

The URBEMIS2007 model (Version 9.2.4) and the Bay Area Air Quality Management District Greenhouse Gas Model (BAAQMD GHG Model) were used to quantify the construction period and operational period GHG emissions. The BAAQMD GHG Model utilizes inputs from the URBEMIS2007 model and considers GHG emissions associated with transportation (vehicle trips), area sources, electricity and natural gas, the energy required to convey water and wastewater, and the energy required to haul and dispose of solid waste. **Appendix J** includes the URBEMIS2007 and BAAQMD GHG Model outputs.

Energy

Energy would be consumed throughout the construction and operations of either Project Variant. Electricity consumption rates are based on a study prepared for the California Energy Commission (CEC). According to the CEC report, the electricity consumption rate for the sanctuary building would be 9.81 kilowatt hours (kWh) per square foot.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the four significance criteria stated above shows that less-than significant impacts would result for each of the criteria.

a) Would the project result in a wasteful, inefficient and unnecessary use of energy?

b) Would the project result in a significant demand on regional energy supply or requirements of substantial additional capacity?

Implementation of either Project Variant would result in the construction of a 66,074 square foot sanctuary building. Energy would be consumed throughout the construction and operation of either Project Variant. Based on **Table 4.6-2** and the electricity consumption rate of 9.81 kWh per square foot, the project's energy demand would be 0.6 million kW per year.

Electrical and gas services would be provided by PG&E. No deficiencies in electrical and gas service in the project vicinity, or that would be caused by either Project Variant, have been identified by PG&E.

The Project Variants include some additional components that would help to reduce energy demand: a light-colored roof, subterranean building, and energy-saving HVAC system. The light-colored roof, as discussed in **Section 4.1, Aesthetics**, would help to reflect the sun's heat, thereby decreasing the amount of heat transferred into the building and reducing the need for cooling. Additionally, two-thirds of the sanctuary building would be below ground-level. This portion of the sanctuary building would require less heating and cooling as the ground would provide some insulation. Additionally, the proposed HVAC system could provide annual energy savings of approximately 50 percent as compared to a standard HVAC system or a similar above-ground building.

Furthermore, the Transportation Demand Management (TDM) program would minimize and reduce vehicles and fuel consumption. The TDM program emphasizes walking, biking, and carpooling to the sanctuary building. The program includes a signed pledge from 167 members who reside within 0.5-mile of the project site to walk or ride a bicycle when they travel to the sanctuary building.

Both Project Variants would be required to comply with that California Building Standards Code (CALGreen). This code went into effect on January 1, 2011 and was established, in part, to make buildings more efficient in the use of materials and energy (see discussion under California Building Standards Code (CALGreen) in **subsection 4.6.2 Regulatory Setting**).

Each of these components would help to reduce both Project Variants' overall energy demand. Therefore, both Project Variants would have a less-than-significant impact on energy.

c) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

d) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Neither Project Variant would result in any significant project-level impacts to greenhouse gas emissions. It is generally understood that no single land use project can generate enough GHG emissions to noticeably change the global average temperature.¹² GHG emissions are therefore recognized exclusively as cumulative impacts. Refer to **Chapter 6, Cumulative Impacts** for a discussion of the Project Variants' cumulative contribution to GHG emissions and their impact on global climate change.

¹² BAAQMD, 2010a.

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4.7 HAZARDS AND HAZARDOUS MATERIALS

This section discusses hazardous materials existing in the project area, the potential impacts associated with the proposal, and mitigation measures to reduce potentially significant impacts. Information in this section is based on a Phase 1 Environmental Site Assessment (ESA) prepared by ENGEQ, Inc. in June 2009. **Appendix K** includes the ESA.

The ESA included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. Preparers of the ESA performed reconnaissance of the project site and vicinity and interviewed people knowledgeable about the area. Several comments related to hazards and hazardous materials were received in response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR). These comments are summarized in **Appendix A**. Commenters stated that previous uses that may have occurred on the project site may have resulted in contamination of soils and groundwater. The analysis in **subsection 4.7.3** below addresses these questions.

For the purposes of this analysis, Project Variant A and Project Variant B were considered to have the same level of risk related to hazardous materials, as the physical expanse of construction activities under both options would be similar, leading to a similar level of risk relative to hazards/hazardous materials.

4.7.1 Existing Conditions

Project Site

A review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the project site. The ESA reported that site reconnaissance and records review did not find documentation or physical evidence of any existing soil or groundwater contamination associated with the use of the project site.

11 White Horse Court

According to the ESA, a minor surface spill of petroleum occurred prior to 1998 at 11 White Horse Court (APN 184-450-032). Prior to 1998, this parcel, in conjunction with 1354 Boulevard Way (APN 184-450-034), were used as an equipment storage area which resulted in minor stains of petroleum on the surface soils. An environmental assessment was performed and the stained surface soil was removed by the property owner. Follow up reports (included in **Appendix K**) confirm that the contaminated soil had been removed from the project site and the issue has been fully resolved.

Project Area

Aside from the minor surface spill of petroleum that occurred at 1354 Boulevard Way (see above), the ESA reported four sites within 0.50-mile of the project site that contained previous groundwater contamination. Each of these sites has a status listed as “case closed,” meaning that a reviewing agency has certified that contamination has been removed or otherwise no longer poses any risk.

The two closest sites are 2460 Warren Road (directly south of the project site) and 1343 Boulevard Way (across the street from the project site).

- 2460 Warren Road was listed on the SWEEPS UST database and the County’s Site List database for gasoline tank leaks in 1987 and 1998. The ESA includes an interview with an employee related to an underground storage tank that was removed approximately 20 to 25 years ago, under permit from the local Fire Department. The employee indicated that no leaks were observed during the routine tank removal, and the ESA did not find any reports of subsequent contamination. There is no evidence of any contamination related to leaking underground storage tanks on this site.
- At 1343 Boulevard Way, asbestos-containing waste was removed during demolition of several structures in the 1990s.

The ESA concludes that the site is not subject to any contamination from area sources.

1360 Boulevard Way

The ESA also includes documentation to clarify previous, erroneous environmental reports that claimed a leaking underground storage tank (LUST) had existed on the project site. Previous documentation reported that the address of “1360 Boulevard Way” had been listed on the LUST and CORTESE databases. The ESA clarified that this case actually involves a property in Oakland, California, and had been incorrectly and improperly attributed to the project site. Further investigation as part of the ESA noted that representatives from the Contra Costa County Fire Protection District and Health Services Department indicated that there are no records related to any former storage tank at 1360 Boulevard Way.

Schools and Other Sensitive Receptors

Some residential populations, including children, the elderly, and the infirm, are more susceptible to health effects from hazardous materials than the general population. Construction on contaminated properties that could potentially generate vapors or dust-containing contaminants may potentially pose a health risk to these receptors.

No school or hospital is located within proximity to the project site, although several residential properties are located immediately adjacent. The nearest school facility is the Pied Piper Pre-School, located approximately 0.3-mile south of the project site at 2263 Whyte Park Avenue.

Lead, Asbestos, and Other Hazardous Materials in Buildings

Hazardous materials are commonly found in building materials of older structures. During demolition or major renovations these materials could be released into the air. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance.

Historic records indicate that the houses and accessory buildings on the project site were built before 1978 and thus may contain lead-based paints and asbestos-containing materials.

4.7.2 Regulatory Setting

National

The U.S. EPA is the main federal agency responsible for enforcing regulations relating to hazardous materials and wastes. The U.S. EPA works collaboratively with other agencies to enforce materials handling and storage regulations and site cleanup requirements.

Primary federal laws pertaining to hazardous materials and wastes include the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980 (CERCLA). RCRA includes procedures and requirements for reporting releases of hazardous materials, and for cleanup of such releases. RCRA also includes procedures and requirements for handling hazardous wastes or soil or groundwater contaminated with hazardous wastes. CERCLA delineates the liability for contamination between current property owners and others. The Hazardous Materials Transportation Act is administered by the DOT via its performance of inspections and training, and its issuance of transportation guidelines; the federal government delegates enforcement authority to the states.

State of California

The Department of Health Services (DHS), the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB) are the state agencies that regulate hazardous materials.

The DTSC administers U.S. EPA's standards regarding public health effects of soil contamination, while the RWQCB administers state water quality standards for surface and groundwater. Lead responsibility for remediation depends on the proposed use of a parcel, the character of waste contaminants, and the need for site monitoring.

Relevant state laws that address soil and water pollution, hazardous materials storage, handling, transport and disposal include the State Water Code, Underground Storage Tank Code, Cortese Act (listing of hazardous waste and substances sites) and Proposition 65 (safe drinking water and toxics enforcement).

Contra Costa County General Plan

The Safety, Public Facilities/Services, and Conservation elements of the General Plan contain the following relevant policies associated with hazards and hazardous materials:

Safety Element

- 10-61 Hazardous waste releases from both private companies and from public agencies shall be identified and eliminated.
- 10-62 Storage of hazardous materials and wastes shall be strictly regulated.
- 10-63 Secondary containment and periodic examination shall be required for all storage of toxic materials.

Public Facilities/Services Element

- 7-80 Wildland fire prevention activities and programs such as controlled burning, fuel removal, establishment of fire roads, fuel breaks and water supply shall be encouraged to reduce wildland fire hazards.

Conservation Element

- 8-22 Applications of toxic pesticides and herbicides shall be kept at a minimum and applied in accordance with the strictest standards designed to conserve all the living resources of the County. The use of biological and other non-toxic controls shall be encouraged.

Policy Consistency Analysis

State and local agencies will enforce and oversee construction and operational activities to ensure compliance with all applicable federal and state laws. Oversight agencies include the County Department of Conservation and Development, the County Fire Official, and others.

Consistent with State and County regulations, a Phase I ESA was prepared to determine whether any contamination may exist on the project site or adjacent properties. Consistent with policy 10-61, the Phase I ESA identified past activities in the project area and documented that the relevant responsible agencies had closed all cases associated with releases of hazardous materials.

Neither Project Variant would handle substantial amounts of hazardous materials or generate hazardous waste, and therefore would not trigger any conflict with General Plan policies 10-62 and 10-63. Furthermore, the project site is not in an area susceptible to wildfires. Landscaping on the project site may be maintained with pesticides or herbicides that are typically associated with residential use. Therefore, both Project Variants would be in compliance with policy 8-22.

4.7.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As stated in Appendix G, a project would have a significant impact related to hazards and hazardous materials if it would:

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

- h) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Discussion of No Impacts

Analysis of the proposal and project site characteristics in the context of the eight significance criteria stated above shows that no impacts would result for five of the criteria.

a) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The applicant proposes a religious use that would not entail the routine use, transport, or disposal of hazardous materials as part of day-to-day operations. Furthermore, the project site is not located within one-quarter mile of an existing or proposed school. The nearest school facility (the Pied Piper Pre-School) is located approximately 0.3-mile south of the project site.

b) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As discussed in the Phase I ESA, prior soil staining from a petroleum spill related to the use of the site as a vehicle storage yard was fully remediated in 1999, and no further listing for the subject property exist.

Since the project site does not contain any known hazardous material contamination and as no nearby properties contaminated with hazardous waste would likely impact the project site, neither Project Variant would result in any impacts related to hazardous materials sites.

c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

d) For a project in the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The closest airport to the project site is Buchanan Field, located more than 8 miles away in the unincorporated Concord area of Contra Costa County. Moreover, no known

private use airstrips are located within 2 miles of the project site. Based on the project site's significant distance from public airports and private airstrips, the proposed use would not introduce any foreseeable hazards to aircraft or to people residing or working in the project area. No mitigation is required.

e) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urban areas or where residences are intermixed with wildlands?

The project site is currently developed and is located in a developed suburban area. The project area is surrounded by the urbanized and developed cities of Lafayette and Walnut Creek. Because of the distance from any wildland areas, development on the project site would not expose people or structures to wildland fire hazards. No mitigation is required.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the eight significance criteria stated above shows that less-than-significant impacts would result for two of the criteria.

f) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

During construction and grading, diesel fuels, solvents, and similar substances would be transported to and used at the project site related to the operation and maintenance of heavy construction equipment. The transport and use of such materials would be for a short-term duration and would be limited to the quantities required for construction and grading. No significant impact would result from the transport or use of such materials over the construction and grading period. The transport of such materials is overseen by federal and state regulators to ensure public safety. No additional mitigation is required.

The applicant proposes a religious use that would not entail the routine use, transport, or disposal of hazardous materials as part of its day-to-day operations. No substantial quantities of hazardous materials would be stored on-site during operation, save for small amounts of common cleaning and landscaping products that are typically found in most residences, commercial buildings, and institutional facilities. Compliance with product warning labels and storage recommendations would reduce potential impacts from operational activities to a less-than-significant level. As such, potential operational period impacts associated with the use, transport, and storage of hazardous materials are considered less than significant. No mitigation is required.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation system?

The Contra Costa County Fire Protection District (CCCFFPD) currently serves the project site and the existing residences. Neither Project Variant would result in any substantial modification to existing public roadways that would impair emergency access in the vicinity of the project site. No mitigation is required.

Discussion of Significant Impacts

h) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact 4.7-1: Demolition of existing structures on the site could result in the release of lead, asbestos, and other contaminants. (Less than Significant with Mitigation Incorporated)

Lead and asbestos

Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers to provide strength and fire resistance. Because of the age of the existing residential structures, hazardous materials such as lead based paint (LBP) and asbestos could be present, and demolition of these structures therefore has the potential to release lead particles, asbestos fibers, and/or other hazardous materials that could be inhaled by construction workers and the public. In addition, other common items such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats can contain hazardous materials. **Mitigation Measure 4.7-1a** would reduce impacts from improper handling and disposal of such materials.

Other contaminants

The Phase 1 ESA reported no documentation or physical evidence of significant soil or groundwater contamination on the project site. The ESA also documented that a previous spill had been fully remediated. Notwithstanding, any project involving substantial excavation in a long-urbanized area could lead to the discovery of unrecorded soil contamination. Excavation of such soils could then expose construction workers and the public to hazards. **Mitigation Measure 4.7-1b** would ensure that excavated materials are handled properly so as to minimize potential risks to construction workers and people in the vicinity of the project site.

Mitigation Measure 4.7-1a: At least fifteen days prior to issuance of a demolition permit, a state certified contractor shall complete an asbestos and lead-based paint survey for all structures proposed for demolition that were constructed prior to 1980. The survey shall be submitted to the Department of Conservation and Development, Community Development Division for review and approval.

If LBP or asbestos-containing materials are identified in the survey, they shall be removed from the site and properly disposed of in accordance with CAL/ OSHA requirements:

- Known or suspected asbestos-containing materials shall be abated by a certified asbestos abatement contractor in accordance with BAAQMD regulations and notification requirements.
- Intact lead-based paint found to be secure (not flaking, peeling or cracked) may be discarded along with demolition debris during the demolition of the structure.
- Loose and peeling paint shall be disposed of as state and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds.
- Hazardous wastes shall be appropriately managed, labeled, transported, and disposed of by trained workers in accordance with local requirements.
- The demolition and removal of materials potentially containing lead-based paint would be required to follow the CAL/OSHA Lead in Construction Standard, Title 8, California Code of Regulations (CCR).
- Other hazardous materials associated with buildings, such as fluorescent lights and electrical switches, shall be disposed of in accordance with DTSC hazardous waste regulations.

Mitigation Measure 4.7-1b: Prior to the issuance of grading or demolition permit, the County Building Official and Community Development Division shall review a Risk Management Plan prepared for the Project Variant ultimately selected by a qualified professional. The plan shall include, but is not limited to the following conditions:

- Should tanks, drums, free product, or other potential chemical hazards be encountered during excavation, the County, environmental consultant and the owner shall be consulted prior to proceeding. Excavated material shall be segregated and stockpiled in a designated area and covered in plastic. Stockpiles shall be maintained for profiling and disposal. A qualified environmental consultant shall take samples of each stockpile for analysis.

Stockpiles and other hazardous wastes shall be appropriately managed, labeled, transported, and disposed of by trained workers in accordance with all applicable laws and regulations.

- The contractor shall include specific information related to chemical hazards that could be present during the excavation. This information shall include, but shall not be limited to, the proper use of personal protective equipment (PPE), worker air monitoring, and action levels for use of PPE and stop work. Workers engaged in the excavation of petroleum-affected soil shall be trained per OSHA standards for hazardous waste operations and emergency response.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measure 4.7-1a** would mitigate risks of lead-based paint and asbestos-containing materials to a less-than-significant level. Implementation of **Mitigation Measure 4.7-1b** would ensure the safety of construction workers and the public regarding the excavation and disposal of excavated materials.

4.8 HYDROLOGY AND WATER QUALITY

This section describes surface waters, groundwater resources, storm water collection and transmission, and flooding characteristics in the project area.

Appendix L includes a project-specific drainage report dated August 2010. **Appendix M** includes a storm water control plan (SWCP) dated June 2009. Aliquot Associates prepared both reports.

During the scoping process, the County received numerous comments regarding drainage and stormwater concerns, primarily citing existing inadequacies in the County storm drain system in the project vicinity and concern over the potential to worsen these conditions. These comments are summarized in **Appendix A**. This section addresses all such scoping comments.

Project Variant A and Project Variant B differ in terms of hydrological impacts. Therefore, analysis is provided below for both Project Variants.

4.8.1 Existing Conditions

Regional Hydrology

The Saranap neighborhood in unincorporated Contra Costa County is part of the San Francisco Bay Hydrologic Region. Water resources are commonly described and characterized in terms of watersheds, which refers to an area that is tributary to a particular creek or river system.

The project site is located in the tributary area of Las Trampas Creek. The tributary area is approximately 13,000 acres, and the project site, at approximately 3 acres, comprises about 0.02 percent of this area.

Groundwater

According to the geotechnical study (**Appendix I**), groundwater was encountered at depths of 15 to 24 feet in various test borings drilled on the project site in 2007. Based on these findings, the geotechnical study includes numerous recommendations for the shoring of the project site during excavation, including dewatering. Within this EIR, **Section 4.5, Geology and Soils** discusses these recommendations in greater detail.

Stormwater Drainage

Under existing conditions, approximately 1.06 acres (32 percent) of the site is considered impervious, meaning rain water cannot penetrate into the soil due to the presence of buildings and paved or hardscaped areas. The project site currently does not contain any storm water controls or storm water treatment facilities.

The Contra Costa County Public Works Department has formally identified a number of “Drainage Areas” throughout County-administered lands, but does not currently identify the project area as being located within any formed drainage area. The following analysis summarizes information from the Aliquot Associates report. The “Drainage Area” numbers presented below are taken from this report (**Appendix L**) and do not correspond to County Public Works-identified drainage areas.

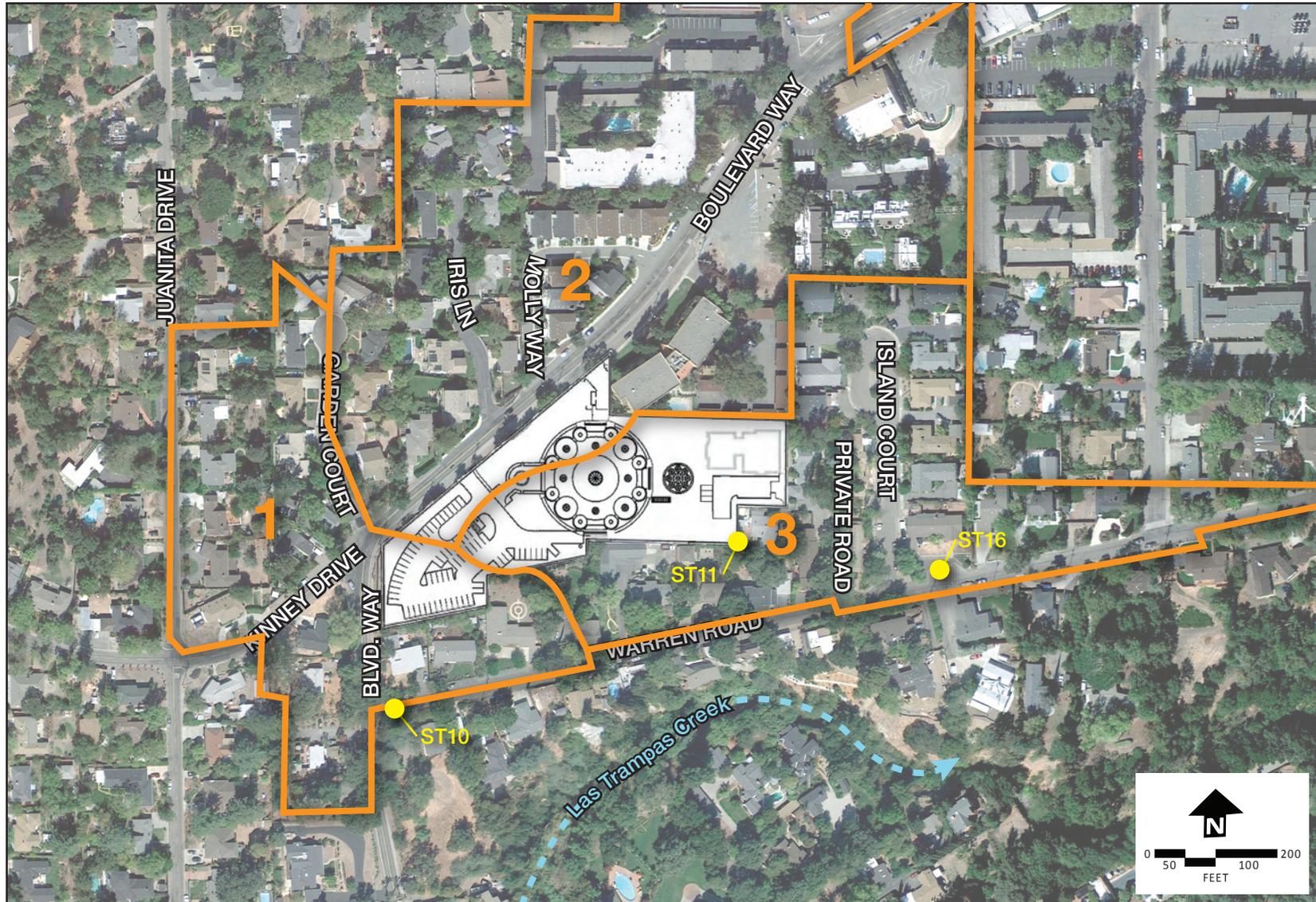
The project area appears to be immediately north of County Drainage Area 15A. Storm water drains from the project site in three directions:

- north towards Boulevard Way
- southeasterly towards a drain box near the private driveway leading to Warren Road
- southwesterly, towards the intersection of Warren Road and Boulevard Way

Figure 4.8-1 shows these drainage areas, numbered as drainage areas 1, 2, and 3. The project site contains a portion of each of these three drainage areas, as further described below. All three drainage areas ultimately flow into Las Trampas Creek, which flows easterly to Walnut Creek and ultimately discharges into Suisun Bay. Near the project site, Las Trampas Creek flows above ground south of Warren Road. According to County PWD, Las Trampas Creek currently lacks adequate capacity to handle flows from a projected 100-year storm event. County PWD confirms that downstream of Warren Road, there is a collapsed 18-inch drainage line that has the potential to affect the integrity of an adjacent residential property.

Drainage Area 1 comprises 6.7 acres, including 0.41 acres of the project site. As shown in **Figure 4.8-1**, stormwater from Drainage Area 1 flows southwesterly into roadside ditches that connect to County storm drain facility ST10. This structure outlets the stormwater flow into Las Trampas Creek at the corner of Boulevard Way and Warren Road. According to the Drainage Report, this existing off-site drainage facility is considered inadequate to process stormwater flows under existing conditions.

Drainage Area 2 comprises 16.3 acres, including 0.80 acres of the project site. Stormwater from Drainage Area 2 flows overland in a northerly direction toward Boulevard Way. On Boulevard Way, stormwater flows in a roadside ditch that



Drainage Areas

Figure

4.8-1

empties into County storm drain facility ST5, which eventually drains to a series of underground pipes that outlet to Las Trampas Creek approximately one-half mile from the project site.

Drainage Area 3 comprises 9.24 acres, including 1.90 acres of the project site. Stormwater from the Drainage Area 3 flows overland to Warren Road and then into County drainage facilities ST11 and ST 16. Via ST16, stormwater flows beneath Warren Road in a currently undersized 12-inch pipe and then discharges into Las Trampas Creek.

The County requires that stormwater drainage facilities for projects less than one square mile must be adequate to handle the flow of the 10-year storm.¹ Currently, only Drainage Area 2 has adequate capacity to handle runoff under current conditions and for the 10-year storm event. The stormwater drainage facilities in Drainage Areas 1 and 3 are currently inadequate for the 10-year storm event. Increases of stormwater flow into these areas would thus be considered significant impacts requiring mitigation.

Water Quality

Pollutant sources discharging to area creeks may include both “point” and “nonpoint” discharges.

A point source is any discernible, confined, and discrete conveyance (e.g., a pipe discharge) of pollutants to a water body from such sources as industrial facilities or wastewater treatment plants. Point sources are subject to measures designed to protect the overall water quality of the creeks and San Francisco Bay, including water quality requirements, periodic monitoring, annual reporting, prohibitions of the discharge of pollutants by regulatory agencies, and other requirements.

Nonpoint pollutant sources are sources that do not have a single, identifiable discharge point, but are rather a combination of many sources. A nonpoint source can be stormwater runoff from land that contains, for example, petroleum from parking lots, pesticides from farming operations, or sediment from soil erosion. Section 303(d) of the Federal Clean Water Act² requires that states develop a list of impaired water bodies that do not meet water quality standards. As of August 2010, neither Las Trampas Creek nor Walnut Creek appeared on the list impaired streams prepared by the Regional Water Quality Control Board.

Flooding

The project site is relatively flat, with a gentle grade of about 2.5 percent that generally descends to the east. A review of the Federal Emergency Management Agency (FEMA)

¹ Contra Costa County Ordinance Code Title 9, Section 914.2.010.

² 33 U.S.C. §1251 et seq.

Flood Zone Maps for Contra Costa County, California (Number 06013C0289F), indicate that the project area is not subject to flooding during a 100-year flood event.³ The project site and immediate environs are designated as “Zone X” and are not shaded on the map. According to FEMA, an unshaded Zone X designation means that an area has a minimal flood risk hazard. Such lands are considered outside areas where flooding could occur on a 500-year basis.

4.8.2 Regulatory Setting

Clean Water Act

Congress enacted the Clean Water Act (CWA) in 1972 and has amended it several times. The CWA is the primary federal law regulating water quality in the United States, and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation’s rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all “waters of the United States.” The CWA employs several mechanisms to control domestic, industrial, and agricultural pollution. At the federal level, the CWA is administered by the U.S. Environmental Protection Agency (U.S. EPA). At the state and regional level, the CWA is administered and enforced by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

The State of California has developed a number of water quality laws, rules, and regulations, in part to assist in the implementation of the CWA and related federally mandated water quality requirements. In many cases, the federal requirements set minimum standards and policies and the laws, rules, and regulations adopted by the state and regional boards exceed the federal requirements.

National Pollution Discharge Elimination System (NPDES)

Since its enactment in 1972, the CWA has nationally regulated the discharge of pollutants into the waters of the U.S. from any point source. In 1987, amendments to the CWA added section 402(p), which established a framework for regulating nonpoint source (NPS) stormwater discharges under the NPDES. The Phase I NPDES stormwater program regulates stormwater discharges from industrial facilities, large and medium-sized municipal separate storm sewer systems (those serving more than 100,000

³ FEMA, “Flood Insurance Rate Map #06013C0289F”, <http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=67697603&IFIT=1>. (September 25, 2009)

persons), and construction sites that disturb five or more acres of land. Under the program, the applicant is required to comply with two NPDES permit requirements.

The NPDES General Construction Permit Requirements apply to clearing, grading, and disturbances to the ground such as excavation. Construction activities on one or more acres (applicable to the present proposal) are subject to a series of permitting requirements contained in the NPDES General Construction Permit. This permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), including Best Management Practices (BMPs) to be implemented during construction.

The applicant is also required to submit a Notice of Intent (NOI) with the SWRCB Division of Water Quality. The NOI includes general information on the types of construction activities that will occur on the sites. It is the responsibility of the property owner to obtain coverage under the permit prior to project area construction.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne)⁴ designates the SWRCB and nine RWQCBs as authorities over California water quality policies and rights.⁵ Under this act, each RWQCB is authorized to regulate the discharge of waste that could affect the quality of the state's waters, including projects that do not require a federal permit through the United States Army Corps of Engineers (ACOE). The Porter-Cologne Act also established the responsibility of the RWQCBs for adopting, implementing, and enforcing water quality control plans (Basin Plans), which set forth the state's water quality standards (i.e. beneficial uses of surface waters and groundwater) and the objectives or criteria necessary to protect those beneficial uses. The NPDES permits must be consistent with the Basin Plans, specifically the San Francisco Bay Basin Water Quality Control Plan for development within the County.

Contra Costa County Provision C.3 Requirements

Contra Costa County also has the authority to administer its NPDES permit; the County currently exercises this authority through "Provision C.3" of the permit. The provisions require the installation of post-construction BMPs for new development, and sets forth standards for the implementation of these BMPs. The intent of these regulations is to rigorously regulate the quality (and durations for flow control) of stormwater runoff generated from any project creating or replacing impervious surface area of over 10,000 square feet so that receiving waters downstream are not adversely impacted. To comply with Provision C.3 requirements, a proposed new development is required to

⁴ California Water Code Sections 13000-14290.

⁵ California Wetlands Information System, 2002, Summary of the Porter-Cologne Water Quality Control Act. < http://ceres.ca.gov/wetlands/permitting/Porter_summary.html>. Accessed on March 2, 2009.

prepare a Stormwater Control Plan (SWCPs), a document separate from the SWPPP. As part of the SWCP, a project applicant is required to install water quality stormwater runoff BMPs that filter or treat rainfall runoff generated from storm events up to approximately the 85th percentile rainfall event (or approximately the 1-inch storm event) before discharging into natural drainage systems. For projects creating or replacing over one acre of impervious area, Hydrograph Modification Management Plan (HMP) requirements apply, resulting in sizing BMPs so that post-project runoff does not exceed pre-project rates or durations, as such an increase could contribute to erosion in receiving waters downstream.

As of February 2005, the County has required submittal of a SWCP as part of new development applications that create or replace defined thresholds of impervious surfacing. In accordance with the Contra Costa Clean Water Program's C.3 requirements, the SWCP should specify and document permanent post-construction features and devices that detain, retain, or treat typical pollutants in urban runoff before discharging into watercourses downstream. Other provisions of the Contra Costa County Clean Water Program require that a maintenance entity be identified or created for all new projects that will specifically inspect and maintain water quality and other permanent on-site hydrologic controls planned to fulfill provision C.3 requirements. An operations and maintenance manual for use by the created or identified maintenance entity is required for each permanent treatment feature.

Contra Costa County General Plan

The Contra Costa County General Plan includes the following policies to manage water resources and flood risk, which are presented in Chapter 7, Public Facilities/Services and Chapter 8, Conservation. The following policies are relevant to the proposal:

- 7-23 The County shall cooperate with other regulatory agencies to control point and non-point water pollution sources to protect adopted beneficial uses of water.
- 7-45 On-site water control shall be required of major new developments so that no significant increase in peak flows occurs compared to the site's pre-development condition, unless the Planning Agency determines that off-site measures can be employed which are equally effective in preventing adverse downstream impacts expected from the development or the project is implementing an adopted drainage plan.
- 8-91 Grading, filling and construction activity near watercourses shall be conducted in such a manner as to minimize impacts from increased runoff, erosion, sedimentation, biochemical degradation, or thermal pollution.

Project Consistency

Consistent with NPDES and Provision C.3 requirements, the applicant submitted a SWCP with its development application. Information from the SWCP is included in the impact analysis discussions below.

A SWPPP will be required prior to approval of grading permits. The SWPPP will be developed consistent with all pertinent policies and will minimize the potential for runoff during construction. The SWPPP will ensure either Project Variant that may be ultimately selected would be consistent with General Plan policy 8-91 (the project site does not include a watercourse, but Las Trampas Creek is located across Warren Road to the south of the project site).

Consistent with General Plan policy 7-45, both Project Variants include storm drainage control features. As further discussed below, stormwater runoff will decrease relative to existing conditions, primarily through the increase in pervious surfaces that would retain more stormwater on-site.

4.8.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. A project would have significant impacts relative to hydrology and water quality if it would:

- a) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- b) Expose people or structures to inundation by seiche, tsunami, or mudflow;
- c) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- d) Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- e) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);

- f) Create or substantially contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or create an increase in calculated peak flood discharges;
- g) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;
- h) Violate any water quality standards or waste discharge standards set by the RWQCB or otherwise substantially degrade surface or groundwater quality;
- i) Otherwise substantially degrade water quality; or
- j) Substantially alter the established drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation in the City or property in adjacent municipalities.

Methodology

The SWCP and Drainage Reports (**Appendices L and M**) document the each of the Project Variant's stormwater control features and hydrological impacts. This section summarizes the analysis for both Project Variants.

The drainage report in **Appendix L** investigates the hydrological impacts of Project Variant A and Project Variant B. Within **Appendix L**, Project Variant B is referred to as the "Road Widening" scenario.

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the 10 significance criteria stated above shows that no impacts would result for five of the criteria. The following discussions apply equally to both Project Variant A and Project Variant B.

a) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

b) Would the project result in risk of loss, injury or death involving inundation by seiche, tsunami or mudflow?

The project site is separated from the San Francisco Bay shoreline by more than 15 miles and substantial intervening topography. Therefore, the possibility of damage from a tsunami is remote. Similarly, the project site is separated by about 4 miles and substantial topographical features from the Lafayette reservoir, the closest large body

of water to the project site. The relatively flat topography of the project site and its immediate surroundings reduces the likelihood of mudflows to a minimal level. No mitigation is required.

c) Would the project place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

d) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

The Federal Emergency Management Agency (FEMA) publishes maps showing areas of flood risk. FEMA maps⁶ show that the project site is not within a 100-year or 500-year flood zone. Therefore, neither Project Variant would expose people or structures to risks associated with a 100-year flood event. No mitigation is necessary.

e) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Neither Project Variant would utilize groundwater for irrigation or drinking water, and would not therefore deplete groundwater. The municipal water provider serving this area is the East Bay Municipal Utility District (EBMUD).

As provided in the drainage report and the SWCP (**Appendices L and M**), both Project Variants would increase the overall porosity of the project site as a whole. Groundwater recharge would thus be enhanced since both Project Variants would increase the amount of pervious surface area on the project site when compared to existing conditions. Accordingly, neither Project Variant would deplete groundwater or substantially interfere with its recharge.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the 10 significance criteria stated above shows that less-than-significant impacts would result for two of the criteria.

⁶ FEMA Map 06013 C 0289F

f) Would the project create or substantially contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or create an increase in calculated peak flood discharges?

g) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

As noted in **subsection 4.8.1, Existing Conditions**, approximately 1.06 acres (32 percent) of the site is considered impervious. Planned improvements to site drainage, described in **Chapter 3, Project Description**, would reduce the extent of impervious surfaces on the site from 32 percent to 28 percent, thereby reducing the amount of runoff water during rain events and providing ancillary benefits in terms of retention and natural treatment of stormwater quality. The planned incorporation of these features and the resulting reduction in offsite storm water flow are consistent with the intent of C.3 guidance and are considered a project enhancement.

As noted in **Chapter 3, Project Description**, the Project Variants would result in differing volumes of stormwater within each of the three drainage areas. The following analysis compares the relative effects of both Project Variants.

Acreage of impervious surfaces

Table 4.8-1 presents the acreage of impervious surface under both Project Variants, within the three drainage areas.

As shown in **Table 4.8-1**, project improvements in both Project Variants would reduce the overall total amount of impervious surface area relative to existing conditions, consistent with the requirements of the County's C.3 program. Existing conditions include about 1.06 acres of impervious surface, while both Project Variants reduce the impervious area to less than one acre.

Table 4.8-2 displays corresponding stormwater flow rates. Hydrologists use the term "Q" to describe the intensity and rate of stormwater flowing from the site. For this report, Q is expressed in cubic feet per second.

Additional detail is provided in the drainage report, included as **Appendix L**.

Table 4.8-1 Impervious Surface Area Coverage Calculations

Drainage Area	Existing Conditions	Project Variant A	Project Variant B
1	0.031	0	0.045
2	0.256	0.234	0.279
3	0.779	0.646	0.646
Totals	1.066	0.88	0.97

Source: Aliquot Associates, August 2010.

Table 4.8-2 Runoff Rates by Drainage Area in Cubic Feet Per Second

Drainage Area	Existing Conditions	Project Variant A	Project Variant B	Project Variant B with Diversion from Area 2 into 3
1	8.83	8.79	8.84	NA
2	22.97	22.96	23.09	22.97
3	11.42	11.03	11.03	11.42

Source: Aliquot Associates, August 2010.

As shown in **Table 4.8-2**, the Project Variant A reduces the stormwater flow rate in each of the three drainage areas relative to existing conditions. Project Variant B would increase rates in areas 1 and 2. Detail for each drainage area is provided in the discussions below. As further detailed in the drainage report (**Appendix L**), these calculations take into account different absorption rates for the various types of surface areas proposed within the project site (pervious concrete, Grasspave2, natural vegetation areas, etc.).

Drainage Area 1

Drainage Area 1 would see a decrease in stormwater flow under Project Variant A. If Project Variant B were implemented, stormwater flow would increase by 0.01 cubic feet per second (cfs) from 8.83 to 8.84.

Drainage Area 2

Project Variant A would improve the conveyance from Drainage Area 2 to the County's ST1 structure. As shown in **Table 4.8-2**, the flow rate from Drainage Area 2 would decrease from an existing 22.97 cfs to 22.96 cfs under Project Variant A. Stormwater currently reaches ST1 via overland flow to the south side open drainage channel.

Project Variant A would instead pipe flows from Drainage Area 2 to an 18-inch pipe on the north side of Boulevard Way that feeds into ST1. As the end point would be the same, this component has no overall effect on the downstream flow.

As shown in **Table 4.8-1**, under Project Variant B, the amount of impervious area in Drainage Area 2 would be increased (relative to existing conditions as well as to Project Variant A). As shown in **Table 4.8-2**, stormwater flow would increase by 0.12 cfs, from 22.97 cfs to 23.09 cfs.

The drainage report notes that this increased flow for Project Variant B can be accommodated without downstream impacts. Specifically, the drainage report recommends reducing the flow in Drainage Area 2 by diverting 0.15 acres of land in the proposed parking lot to Drainage Area 3. Planned improvements, as noted below, would reduce flows to Drainage Area 3 sufficiently such that Drainage Area 3 could accommodate additional flow diversion. Under Project Variant B, as shown in **Table 4.8-2**, the resultant flow rate in Drainage Area 3 would be equal to existing conditions.⁷

Drainage Area 3

The SWCP identified an existing problem at County storm drainage facility ST16, where the existing 12-inch conveyance pipe is inadequate to carry 10-year storm flows, occasionally resulting in a backup of storm drain flows. As shown in **Table 4.8-2**, the improvements associated with Project Variant A would decrease the rate of stormwater flow from Drainage Area 3 (from an existing 11.42 cfs to 11.03 cfs). The SWCP notes that replacing the 12-inch pipe with an 18-inch pipe would resolve existing flooding conditions. As both Project Variants actually reduce or improve stormwater flows into ST16, this improvement is not needed as a mitigation measure, but is provided for informational purposes only.

Overall, both Project Variants would decrease stormwater flows from the project site. No further mitigation related to stormwater quantity is thus required.

⁷ As a potential substitute to diverting 0.15 acres of Drainage Area 3 into Drainage Area 2, the Drainage Report suggests that if there were an upgrade to the existing pipe serving Drainage Area 2, the incremental increase in flow posed by the implementation of Project Variant B could be accommodated. The Drainage Report provided this assessment for informational purposes only.

Discussion of Significant Impacts

h) Would the project violate any water quality standards or waste discharge standards set by the RWQCB or otherwise substantially degrade surface or groundwater quality?

i) Would the project otherwise substantially degrade water quality?

Impact 4.8-1: Improvements, primarily the introduction of a parking area for 74 cars, could affect the quality of stormwater flowing from the project site. (Less than Significant with Mitigation Incorporated)

The **Appendix M** SWCP describes in detail how various improvements would help reduce stormwater pollution. This analysis is equally applicable to each Project Variant.

Parking Areas: Parking lots are typically a major contributor to stormwater pollution. Stormwater mixes with oil, gasoline, or other pollutants that may have accumulated through use. In the Bay Area, which sees little rain during summer months, these pollutants can build up in parking areas, meaning that the “first flush” of rain in the autumn can generate substantially polluted runoff.

The proposed parking areas would be surfaced in either pervious concrete or Grasspave2. The use of these products provides retention of the first one-inch of rainfall. Pollutants that may have accumulated on these surfaces would therefore not runoff the site in the form of polluted stormwater.

Buildings, Other Impervious Surfaces: The proposed sanctuary building and the existing parsonage will remain as impervious surfaces. Stormwater falling on these facilities has the potential to contribute to increased stormwater running off of the site. However, plans include several landscaping features designed to capture stormwater from impervious surfaces. **Figures 3-12 and 3-13** (see **Chapter 3, Project Description**) show the location and demonstrate the inner workings of the proposed flow through planters and bioswales. The SWCP collectively refers to these as “Integrated Management Practice facilities” or IMPs for short. These features appear as landscape features to the casual observer, but are underlain by reservoirs, layers of gravel, special soils and other treatments that are designed to hold substantial quantities of stormwater, such that stormwater does not run off to nearby impervious areas (such as roads or other paved areas) where it may pick up pollutants and then discharge into local waterways. As a backup measure, the SWCP notes that both types of IMPs will include overflow piping to the existing storm drain system in the event of excessive rainfall. Planters are designed with an infiltration rate designed to meet or exceed standards set forth by the Contra Costa Clean Water Program (CCCWP).

Trash Enclosure: The trash enclosure is a potential source of pollutants and thus polluted stormwater runoff. The trash enclosure will have a roof to eliminate the chance of rain water entering the dumpsters and creating polluted runoff. Additionally, the trash enclosure will be designed so that any leakage from the dumpster and “wash down” water from the enclosure will be captured in a drain that connects to the sanitary sewer system.

Other Controls: The SWCP identifies several best management practices that complement the IMPs and other pollutant control measures described above. These measures are incorporated in **Mitigation Measure 4.8-1a**.

Mitigation Measure 4.8-1a: Prior to the approval of a building permit, the County Department of Conservation and Development shall ascertain that final landscaping plans for the Project Variant ultimately selected shall:

- Be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides that can contribute to stormwater pollution.
- Specify plantings within planters and swales that are tolerant of the sandy loam soils and periodic inundation.
- Include pest-resistant plants.
- Include plantings appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions.
- Note that all on-site storm drain inlets shall be marked with the words “No Dumping! Drains to Creek” or similar language.

Drainage Impact: The proposed use of Grasspave2 and pervious paving materials, would result in a beneficial impact, since these materials would result in reducing the amount of stormwater runoff flowing from the project site in any storm event. Use of pervious pavers to replace previously impervious surfaces would, as shown above, result in a reduction of stormwater runoff to below pre-project levels. However, an impact would occur if the proposed pervious paving materials were not ultimately used were improperly maintained. **Mitigation Measures 4.8-1b** and **4.8-1c** would reduce this impact to less than significant.

Mitigation Measure 4.8-1b: Prior to the approval of a building permit, the applicant shall submit a Final Storm Water Control Plan to the Public Works Department in general conformance with the Preliminary Drainage Report for review and approval. The Final Drainage Report and Storm Water Control Plan shall demonstrate use of GrassPave2 and pervious pavers or pervious concrete with comparable or better infiltration and storage capacity.

Mitigation Measure 4.8-1c: Prior to the approval of a building permit, the applicant shall submit a Maintenance Program to the Public Works Department. The Maintenance Program shall include procedures for maintaining the pervious surfaces employed within the project site in the Operation and Maintenance Plan of the SWCP. The Maintenance Program shall include the following measures:

- Landscaping grades shall follow a post-project Sediment Control Plan. Landscape areas shall be designed to drain away from pervious surfaces in the parking lot area wherever possible in order to curtail run-off from carrying silt onto the pervious pavements. The Sediment Control Plan would be included in the Storm Water Control Plan and grades directing water away from the parking lot area shall be shown on the Grading plan.
- The applicant shall engage an outside contractor experienced in maintenance of pervious pavers. The contractor will follow the procedures listed in the Operation and Maintenance Plan of the Storm Water Control Plan.
- Permeable paver surfaces will be kept clean of organic materials. Leaves and other organic material shall be swept and removed from the paver surfaces periodically when debris accumulates and weekly during the rainy season (October 15 to April 15), or as otherwise directed by the Public Works Department for any other wet times of the year.
- Periodic vacuuming should be used to clear out voids with conventional street sweepers or like equipment with vacuums and brushes, a minimum of two (2) times a year, but the actual required frequency will shall be determined by conditions of the site. With an interlocking paver system, additional aggregate fill material will be added after cleaning, if needed to return aggregate fill material to its initial installation levels.
- The landowner shall be obligated to comply with the Operation and Maintenance Plan and Agreement. The landowner's maintenance obligations shall be reflected in such recorded documents as the County lawfully and routinely requires.

Significance after Mitigation: Less than significant. Provided that the County includes adequate conditions of approval that ensure the long-term maintenance and upkeep of all new proposed stormwater control features on the project site, impacts related to stormwater quality would be less than significant.

j) Would the project violate any water quality standards or substantially alter the established drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site?

Impact 4.8-2: During construction, excavated materials could contribute sediment to Las Trampas Creek that could adversely affect water quality. (Less than Significant with Mitigation Incorporated)

This analysis is equally applicable to both Project Variants.

Disturbance of soil during construction activities could result in erosion that could temporarily degrade water quality in the nearby Las Trampas Creek. Approximately 43,000 cubic yards of soil would be excavated during construction. Excavation on the project site would range from a depth of approximately 18 feet on the east side to 23 feet on the west side of the project site.

Excavation is anticipated for summer months, during which precipitation rarely occurs in any substantial quantity. Nevertheless, rainfall could carry loose soils into waterways, resulting in increased sedimentation and degradation of water quality. Concentrated flow due to grading in some areas would increase the potential for erosion and potentially increase sediment transport into the adjacent areas. Construction equipment debris and fuel could also further degrade the quality of stormwater runoff if fueling activity and maintenance products are not handled properly. This contamination could impact nearby waterways (i.e., Las Trampas Creek). On-site activities from grading and general construction activity could pose a potentially significant impact to stormwater quality. **Mitigation Measure 4.8-2** would reduce this impact to less than significant.

Mitigation Measure 4.8-2: Prior to the issuance of a grading permit, the County Building Official shall approve a Storm Water Pollution Prevention Plan (SWPPP) prepared by the applicant. The SWPPP shall comply with current San Francisco Bay Regional Water Quality Control Board guidelines and shall adopt acceptable best management practices (BMPs) for control of sediment and stabilization of erosion in the project area. The SWPPP shall include acceptable BMPs for the protection of water quality.

Significance after Mitigation: Less than significant. Preparation of a SWPPP incorporating BMPs would include compliance with San Francisco Bay Regional Water Quality Control Board guidelines. These measures would ensure that construction activities would not degrade water quality, thereby reducing the impact to a less-than-significant level.

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4.9 LAND USE AND PLANNING

This section describes the existing land uses and pertinent land use regulations for the project site and surrounding properties. Information regarding land use and planning in Contra Costa County was obtained from site visits, the General Plan, Zoning Ordinance, and communications with the County's Community Development Division.

In response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR), the County received several comments related to land use and planning, including consistency of the Project Variants with County General Plan and Zoning regulations. These comments are summarized in **Appendix A**. The analysis in **subsection 4.9.3** below addresses these questions.

Project Variant A and Project Variant B have the same impacts relative to land use and planning. The differences between the Project Variants have no effect whatsoever on the land use and planning factors evaluated below.

4.9.1 Existing Conditions

The project site is located in Saranap, in the unincorporated Walnut Creek area in the central portion of Contra Costa County. Saranap is bordered by the incorporated City of Walnut Creek to the north, east, and south, and the City of Lafayette to the west. Nearby roadways include Boulevard Way to the north and the west, Warren Road to the south, Interstate 680 (I-680) to the northeast, and State Route 24 (SR 24) to the northwest.

The project site is composed of seven parcels, which include three single-family residences and accessory buildings, and the parsonage located at 11 White Horse Court. The applicant owns all seven parcels. One of the existing residences is currently vacant and two of the existing residences are currently rented by members of the Sufism Reoriented church. The project site is relatively flat, with a slight grade (2.5 percent) that generally descends to the east.

Surrounding land uses are primarily residential. A thirty-unit multi-family building (known as "Le Boulevard") is adjacent to the northeast of the project site. The southern and western edges of the project site are bounded by single-family residences. A mix of multi- and single-family uses is adjacent to the north and east. Several commercial properties are located to the east of the project site along Boulevard Way.

Refer to **subsection 4.9.2, Regulatory Setting**, for a discussion of the project site's land use designation and zoning.

4.9.2 Regulatory Setting

Contra Costa County General Plan

The General Plan land use designation for the project site is Single-Family Residential – High Density (SH). This designation is defined in the General Plan as follows:

- **Single-Family Residential-High Density (SH)** – This designation allows between 5.0 and 7.2 single-family units per net acre. Sites can range up to 8,729 square feet. With an average of 2.5 to 3 persons per household, population densities would normally range from about 12.5 to about 22 persons per acre.

Primary land uses, which shall be permitted in this designation, include detached single-family homes and accessory structures. Secondary uses generally considered to be compatible with low density homes may be allowed, including home occupations, small residential care and childcare facilities, *churches and other similar places of worship* [*Emphasis added*], secondary dwelling units, and other uses and structures incidental to the primary uses. In addition, in specified areas of the County with conventional zoning, attached single-family units (duplexes or duets) may be allowed.

Applicable Contra Costa County General Plan Goals and Policies

The General Plan includes goals and policies to ensure the protection of environmental resources. **Table 4.9-1** includes policies related to land use, and also includes an evaluation of the proposal's consistency with those policies. Other policy consistency discussions are contained in relevant topical sections of this Draft EIR.

Zoning Ordinance

Chapter 84 of the Zoning Ordinance indicates several zoning districts that determine the range of permitted land uses.

The project site is zoned for Single-Family Residential (R-10). Permitted uses in the R-10 district include: detached single-family dwellings; crop and tree farming; public parks and playgrounds; residential care facilities for the elderly; family day care; aviaries; and residential second units.

With the issuance of a land use permit, the County allows a larger variety of land uses including home occupation, hospitals or medical offices, *churches and religious institutions* [*Emphasis added*]; community buildings; greenhouses; multiple detached dwelling units; commercial nurseries; public buildings; family care home; and commercial radio and television receiving and transmitting facilities. The minimum lot size in the R-10 zoning district is 10,000 square feet.

Table 4.9-1 Consistency with Pertinent General Plan Land Use Policies

Policy Number	Relevant General Plan Policy	Consistency
Growth Management, 65-35 Land Plan, and Urban Limit Line		
Policy 3-5	New development within unincorporated areas of the County may be approved, providing growth management standards and criteria are met or can be assured of being met prior to the issuance of building permits in accordance with the growth management.	Consistent. The project site is located within the boundary of the Urban Limit Line of Contra Costa County and has been designated for future urban uses and development.
Policy 3-6	Development of all urban uses shall be coordinated with provision of essential Community services or facilities including, but not limited to, roads, law enforcement and fire protection services, schools, parks, sanitary facilities, water and flood control.	Consistent. Development of either Project Variant would be coordinated with public services and utilities. Either Project Variants would meet the fire and emergency vehicle safety standards of the Contra Costa County Fire Protection District. Please refer to Section 4.12, Public Services , and Section 4.14, Utilities and Service Systems , in this Draft EIR for additional information.
Policy 3-8	Infilling of already developed areas shall be encouraged. Proposals that would prematurely extend development into areas lacking requisite services, facilities and infrastructure shall be opposed. In accommodating new development, preference shall generally be given to vacant or under-used sites within urbanized areas, which have necessary utilities installed with available remaining capacity, before undeveloped suburban land are utilized.	Consistent. The project site is an infill development site insofar as it is surrounded by existing development and has all necessary utility connections.
Residential Uses		
Policy 3-27	Existing residential neighborhoods shall be protected from incompatible land uses and traffic levels exceeding adopted service standards.	Consistent. Both Project Variants would introduce a religious facility into a residential neighborhood, and these uses are compatible. Both Project Variants would be consistent with the County zoning ordinance with the issuance of a land use permit. Traffic levels would not exceed adopted level of service standards as described in Section 4.13, Traffic and Circulation .
Public Facilities Service Element		
7-162	Churches and other religious institutions shall be considered consistent with residential and commercial land use designations where safe vehicular access and effective buffering of neighboring residences can be achieved.	Consistent. As described in Section 4.13, Traffic and Circulation both Project Variants would have safe vehicular access. Neighboring residences would be buffered with new landscaping (trees), walls, and spatial separation.

Source: Contra Costa County General Plan General Plan 2005-2020, Land Use Element and Public Services Element.

Project Consistency

With the issuance of a land use permit, the religious facility would be an acceptable land use within the R-10 district. Both Project Variants would be consistent with all R-10 zone district requirements, including height restrictions and setback requirements, as shown in **Table 4.9-2**.

Table 4.9-2 Project Consistency with R-10 Zoning District

	Requirement	Project Variant A and Project Variant B
Minimum Lot Size	10,000 square feet	135,000 square feet
Maximum Building Height	35 feet	20 feet to 35 feet
Minimum Yard Setback	Front yard: 20 feet	20 feet
	Each side yard: 10 feet	10 feet to 13 feet 4 inches
	Rear yard: 15 feet	152 feet 8 inches

Source: Contra Costa County Code.

4.9.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As identified in Appendix G, a project would have a significant land use impact if it would:

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

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the three significance criteria stated above shows that no impacts would result for each of the criteria.

a) Would the project physically divide an established community?

Neither Project Variant would physically divide an established community. Land uses along Boulevard Way include newer, two-story single-family homes, three-story apartment buildings, and commercial uses. Neither Project Variant would divide the community by severing existing roads or connections between properties. Neither Project Variant would introduce any changes to access for any adjacent properties and therefore would not disrupt or divide the existing fabric of the community. Religious facilities are compatible and appropriate uses to be sited in residential areas with the granting of a land use permit. Therefore, neither Project Variant would physically divide an established community.

b) Would the project conflict with any applicable Land Use Plan, Policy, or Regulation of an agency with jurisdiction over the project (including but not limited to the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

There are no specific plans or local coastal programs in effect for the project site.

Both Project Variants are consistent with allowable uses in the operative County General Plan land use designation. The General Plan designates the entire project site as Single-Family Residential – High Density (SH). According to the General Plan, all residential classifications allow churches and other places of worship as secondary uses as they are “generally considered to be compatible” with residential development. Therefore, both Project Variants would be consistent with the General Plan land use designation.

As shown in **Table 4.9-1**, both Project Variants would be consistent with other pertinent policies of the County General Plan.

The project site is not in conflict with the existing zoning ordinance. Section 84-4.404 of the Zoning Ordinance in the Contra Costa County Code allows for the use of religious facilities with the issuance of a land use permit within the R-10 Single Family Residential zoning district. The R-10 zoning district includes specific requirements pertaining to lot and building size. As shown in **Table 4.9-2**, the project would be consistent with all development standards of the R-10 zone district.

The Zoning Ordinance includes a Transportation Demand Management (TDM) chapter (Chapter 82-32), which establishes parking requirements for all land uses. Section 82-32.008 of the chapter states that a project may qualify for fewer than required parking spaces dependent on the County’s review and approval of the project’s TDM program.

As described in **Chapter 3, Project Description**, the applicant submitted a TDM program with the application. As discussed in **Section 4.13, Traffic and Circulation**, the County has reviewed the proposed TDM program and has recommended several additional

measures. The County will conduct a final review of the TDM program as it considers approval of a Project Variant. County review and acceptance of a TDM program reducing the need for parking spaces would constitute compliance with the County parking ordinance.

Therefore, neither Project Variant would conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigation an environmental effect.

c) Would the project conflict with an adopted Habitat Conservation Plan?

The closest Habitat Conservation Plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), whose closest boundary is located approximately 5 miles east of the project site across a highly urbanized area (the City of Walnut Creek). Therefore, neither Project Variant would impact or conflict with any HCP.

4.10 NOISE

This section describes existing noise levels in the project area and evaluates construction and operational noise impacts. Information in this section is based on an equipment noise analysis prepared by Rosen Goldberg Der & Lewitz in September 2009, and an updated equipment analysis by Charles M. Salter Associates, Inc. in September 2010. **Appendix N** includes both noise analyses and associated manufacturer's specifications of proposed equipment.

For the purposes of this analysis, Project Variant A and Project Variant B were considered to have the same level of impact to noise. Noise generating activities (i.e., construction, operations, traffic) would be similar under both Project Variants.

4.10.1 Noise and Vibration Concepts

Noise

Noise can be defined as unwanted sound. Noise is commonly measured with an instrument called a sound level meter. The sound level meter "captures" sound with a microphone and converts it into a number called a sound level. Sound levels are expressed in units called decibels (dB).

To correlate the microphone signal to a level that corresponds to the way humans perceive noise, the so-called "A-weighting" filter is commonly applied. "A-weighting" de-emphasizes low-frequency and very high-frequency sound in a manner similar to human hearing. The use of A-weighting is required by most local agencies as well as other federal and state noise regulations (e.g., the California Department of Transportation, U.S. Environmental Protection Agency, U.S. Department of Labor, Occupational Safety & Health Administration and U.S. Department of Housing and Urban Development). The abbreviation dBA is often used when the A-weighted sound level is reported.

Because of the time-varying nature of environmental sound, there are many descriptors that are used to quantify the sound level. Although one individual descriptor alone does not fully describe a particular noise environment, taken together, they can more accurately represent the noise environment. Descriptors commonly used in environmental studies include the following:

- L_{max} : The maximum instantaneous noise level, used to identify the loudness of a single event, such as an airplane flyover or car/truck passing.
- L_{eq} , Equivalent noise level, a measurement of average noise over some specified period of time.

- L_{90} : The noise level exceeded 90 percent of the time, usually considered to represent ambient or background noises.
- L_{dn} or CNEL Day/Night Average Sound Level or Community Noise Equivalent Level. L_{dn} quantifies noise over a 24 hour period, and includes a weighting system of penalties up to 10 dBA for noises occurring during late evening and very early morning hours, which are typically considered the periods of greatest sensitivity to noise.

A decrease or increase of noise of 3 dBA is considered at the threshold of human hearing. A 5 dBA change is more clearly noticeable. A 10 dBA increase would be perceived as a doubling in loudness (or, in the case of a 10 dBA decrease, a halving of loudness).

Vibration

Vibration is the physical manifestation of energy carried through the earth and structures. The effect of vibration on structures and individuals varies depending on the soil type, ground strata, and receptor location. Vibration is generally felt rather than heard, such as the floor and walls vibrating as a result of a passing subway train.

4.10.2 Existing Conditions

The primary source of noise at the project site and surrounding areas is vehicular traffic along Boulevard Way.

Noise generated from the project site is currently limited to the activities associated with the three existing single family homes and parsonage building. Due to the nature of these land uses, the existing noise generated from the project site is minimal. Potential sensitive noise receptors in the project area include surrounding and nearby residential uses.

To quantify existing noise levels, a noise monitoring survey was conducted over two days in August 2009. **Figure 4.10-1** shows where noise measuring equipment was located during the survey. The survey included one 24-hour noise measurement site along Boulevard Way (Location A), and five short-term measurement sites (1-5). In both surveys, the dominant noise source was traffic along Boulevard Way.

Figure 4.10-2 summarizes the 24-hour measurement. As shown in the figure, noise levels exceed 60 dBA from 6:00 AM until about 10:00 PM every day, with the highest noise levels between 3:00 and 4:00 PM. The 24-hour measurement was used to determine the time frame for short-term noise measurements.

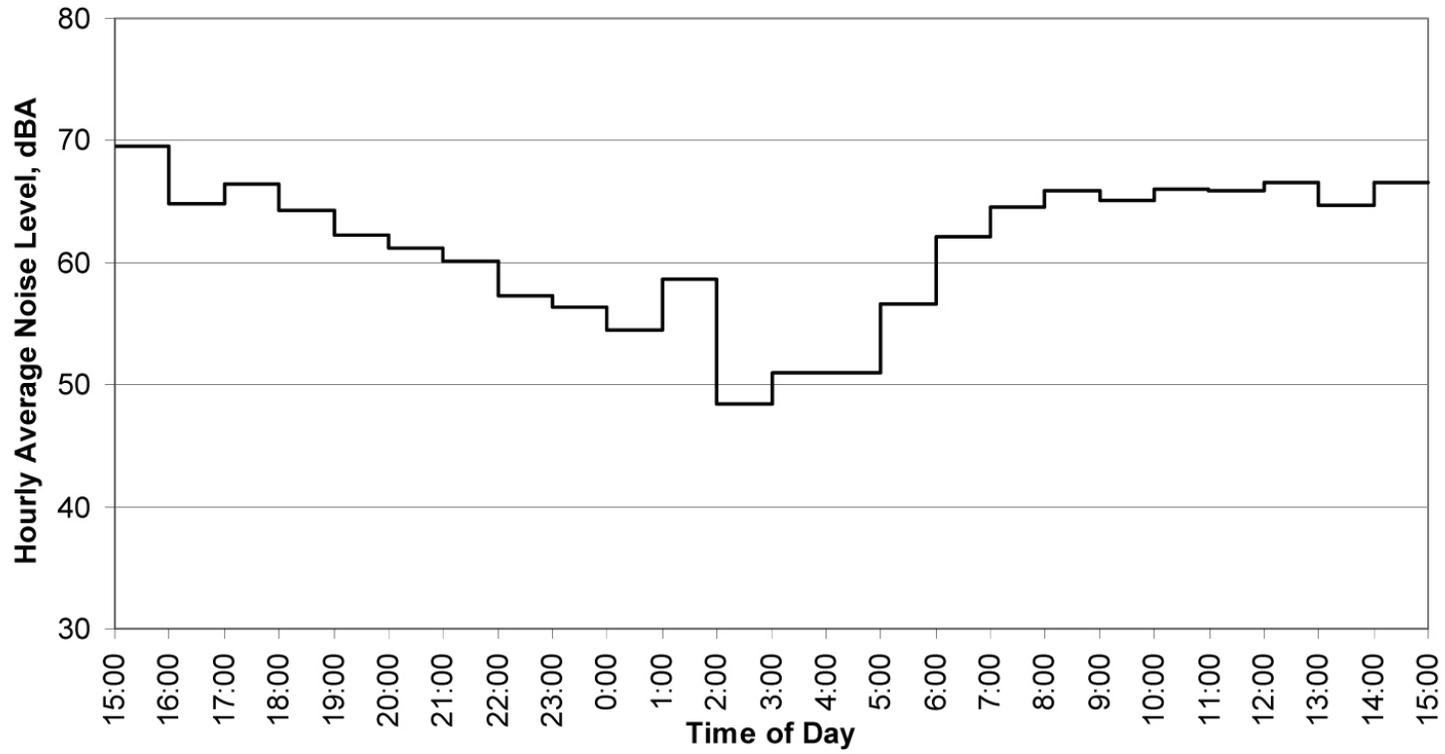


Noise Measurement Locations

Figure

4.10-1

Source: Rosen, Goldberg, Der & Lewitz, Inc., 2009.



Noise Measurement Results at Location A (August 12-13, 2009)

Figure

4.10-2

As shown in **Table 4.10-1**, the short-term noise measurements were taken between 3:00 and 4:15 PM. From these 15 minute measurements, noise analysts correlated the data with the 24-hour measurement to compute the L_{dn} at these locations. Noise is highest at locations 1 and 5, closest to Boulevard Way (a source of traffic-related noise). As expected, Locations 2, 3, and 4 have the lowest noise levels insofar as they are located farther from Boulevard Way.

Table 4.10-1 Noise Measurement Results (August 12, 2009)

	Location	Time	A-Weighted Noise Level, dBA	
			L_{eq}	Computed L_{dn}
1	At driveway to Parsonage and Boulevard Way	3:00-3:15 P.M.	56	58
2	Southeast corner of project site.	3:30-3:45 P.M.	45	47
3	Along southern property line	3:30-3:45 P.M.	46	48
4	Between Le Boulevard Apartments and Parsonage	4:00-4:15 P.M.	48	50
5	Molly Way and Boulevard Way	4:00-4:15 P.M.	61	63

* L_{dn} calculated based on correlation with simultaneous measurement at 24-hour monitor.

Note: to quantify the noise level over a 24-hour period, the Day/Night average sound level (L_{dn}) or Community Noise Equivalent Level (CNEL) is used.

Source: RGDL, Inc., 2009.

4.10.3 Regulatory Setting

California’s Model Community Noise Ordinance (Construction Noise)

The State of California’s Model Community Noise Ordinance (Office of Noise Control 1977) contains noise level limits of 75 dBA for mobile construction equipment and 60 dBA for stationary construction equipment at single-family residential areas.

Project Consistency Analysis

Although these standards have not been adopted by the County, the noise study used the California’s Model Community Noise Ordinance limits to assess the construction noise impacts at adjacent residences. The County does not have quantitative noise performance standards for construction activities.

Without mitigation, construction would cause a temporary increase in noise levels that would have significant noise impacts on surrounding residential areas. Implementation

of **Mitigation Measure 4.10-1** would impose specific hours for construction and would include other measures to attenuate sound during the construction period such as temporary barriers, truck routing, and location of stationary equipment. Implementation of these measures would ensure consistency with California's Model Noise Ordinance. See **subsection 4.10.4, Impacts and Mitigation Measures**, for a complete discussion of potential noise impacts.

Contra Costa County General Plan

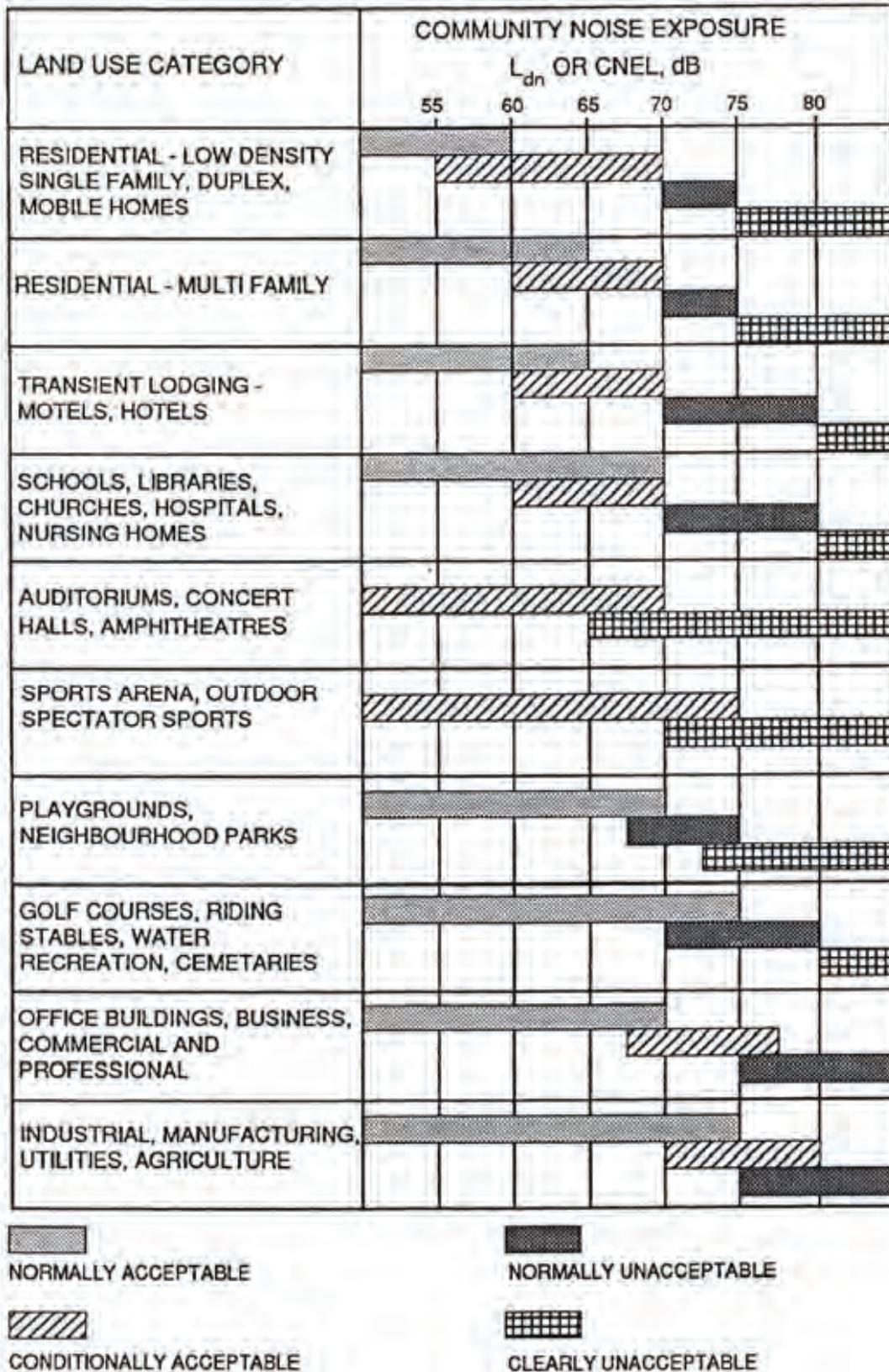
The major objective of the Noise Element of the General Plan is to provide guidelines to achieve noise/land use compatibility. The Noise Element contains the following policies designed to meet this objective:

- 11-1: New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines [shown in **Figure 4.10-3**]. These guidelines, along with the future noise levels shown in the future noise contours maps, are used by the County as a guide for evaluating the compatibility of "noise sensitive" projects in potentially noisy areas.
- 11-2: The applicable standard for outdoor noise levels in residential areas is a DNL [L_{dn}] of 60 dB. However, [L_{dn}] of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints.
- 11-6: If an area is currently below the maximum "normally acceptable" noise level, an increase in noise up to the maximum should not be allowed necessarily.
- 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

County regulations assign appropriate noise levels for indoor and outdoor activities at various land use categories. **Figure 4.10-3** indicates that churches are considered "normally acceptable" when exposed to an L_{dn} of 70 dBA or less.

Although the County does not provide specific thresholds for determining when a project will generate adverse community response, the Noise Element provides general guidelines regarding how noise increases are perceived by people.

An important factor in assessing a person's subjective reaction is to compare the new noise environment to the existing noise environment. In general, the more a new noise level exceeds the prior existing level, the less acceptable it is. Therefore, a new noise source will be judged more annoying in a quiet area than it would be in a noisier location.



Land Use Compatibility For Community Noise Environments

Figure 4.10-3

Source: Contra Costa County General Plan 2005-2020, Noise Element.

Knowledge of the following relationships is helpful in understanding how changes in noise and noise exposure are perceived.

- *Except under special conditions, a change in sound level of 1 dB cannot be perceived;*
- *Outside of the laboratory, a 3 dB change is considered a just-noticeable difference;*
- *A change in level of at least 5 dB is required before any noticeable change in community response would be expected; and*
- *A 10 dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.*

Based on this information, 5 dBA or greater increase would be considered a substantial permanent (i.e., associated with ongoing project operations) increase in noise levels because it would result in a noticeable change in community response.

Project Consistency

As discussed in **subsection 4.10.4**, neither Project Variant would result in a substantial permanent increase in ambient noise levels, and would generally maintain the noise level standards identified in policies 11-1, 11-2, and 11-6.

Without mitigation, construction would cause a temporary increase in noise levels that would have a significant noise impact on the surrounding residential development. Implementation of **Mitigation Measure 4.10-1** would restrict hours of construction, consistent with policy 11-8.

4.10.4 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the *CEQA Guidelines* identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As stated in Appendix G, a project would have a significant impact related to noise if it would result in:

- a) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels;
- b) For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels;

- c) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
 - For this study, a permanent change in noise level of less than 5 dBA is considered less-than-significant. A permanent 5 dBA increase is significant only if the future noise exceeds the "normally acceptable" noise level. A permanent 6 dBA change is significant regardless of the noise level;
- d) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- e) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project; or
- f) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the six significance criteria stated above shows that no impacts would result for two of the criteria.

a) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

b) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not in the vicinity of a public airport or private airstrip and would therefore not be exposed to high noise levels from such sources. The closest airport to the project site is Buchanan Field Airport, located approximately 8 miles north of the project site. Therefore, there would be no exposure to noise from public or private airport facilities.

Discussion of Less-than-Significant Impacts

Analysis of details and site characteristics in the context of the six significance criteria stated above shows that less-than-significant impacts would result for two of the criteria.

c) Would the project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

d) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Operations, including vehicular traffic and mechanical equipment operation, would have the potential to generate an increase in ambient noise levels.

Other programmed activities listed in **Table 3-1** (see **Chapter 3, Project Description**), include classes, celebrations, and devotional gatherings that would occur inside the sanctuary building and would not result in potential noise impacts. Neither Project Variant includes any programmed activities for exterior areas.

Operational Noise Related to Traffic

Throughout operation, vehicles arriving at and departing from the project site would generate noise, although the increase would not be widely perceptible.

In terms of traffic volume, a noticeable increase (5 dBA) requires a doubling of the traffic volume on Boulevard Way. As discussed in **Section 4.13, Traffic and Circulation**, traffic on Boulevard Way is not expected to increase significantly because the majority of the congregation lives within 0.5-mile of the new sanctuary and would walk or use alternate transportation to reach the site.

Furthermore, both Project Variants would include a Transportation Demand Management (TDM) Plan, as described in **Chapter 3, Project Description**, which would minimize increases in vehicular traffic by encouraging carpooling, bicycling, and walking to and from the project site. Any change in traffic volume associated with either Project Variant is therefore expected to be minimal and would therefore not result in a perceptible increase in ambient noise.

Operational Noise from Mechanical Equipment

Mechanical components of both Project Variants include 7 pairs of HVAC-related condensers¹ and an emergency electric power generator.² These components would be contained within an equipment well located on the northern side of the sanctuary building. The nearest sensitive receptor to the equipment well would be the Le Boulevard apartments.

¹ The condensers would be model Daikin REYQ240PTJU.

² The generator would be an EnGen model Generac SG250.

According to manufacturer-provided specifications, the condensers generate a noise level of 63 dBA at 3 feet. The equipment well would be located approximately 72 feet from Le Boulevard apartments. Based on the noise specifications, the 7 pairs of condensers, operating at 100 percent capacity, would generate approximately 43 dBA of noise at Le Boulevard apartments.

The emergency generator would only operate when there is a blackout, although regular testing of the generator would occur for 1 to 2 hours during the day time. The generator would be located approximately 51 feet from Le Boulevard apartments, and would be installed in a manufacturer-provided enclosure which has a guaranteed maximum noise level of 44 dBA at a distance of 23 feet. Based on the equipment specifications, the generator would produce approximately 37 dBA at Le Boulevard apartments.

When the condensers and generator operate simultaneously, the mechanical equipment would generate approximately 44 dBA at Le Boulevard apartments.

The minimal increase in traffic volume, together with the noise generated by the operation of mechanical equipment would generate 44 dBA of noise, which would be indistinguishable from the existing conditions.

Discussion of Significant Impacts

e) Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project?

Impact 4.10-1: Construction activities could generate a temporary increase in noise in the project vicinity. (Less than Significant with Mitigation)

Construction activities could generate a temporary increase in noise levels in the project vicinity, which includes noise sensitive land uses. Although the County does not provide specific guidance for determining construction noise impacts, the General Plan Noise Element policy 11-8 states that:

“Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during more sensitive evening and early morning periods.”

Mitigation Measure 4.10-1 would minimize construction noise impacts at nearby residential properties and ensure consistency with Noise Element policy 11-8. This would reduce the impact of temporary construction noise to a less-than-significant level.

Mitigation Measure 4.10-1: The DCD shall ensure that applicant adheres to the following mitigation measures in order to generate the least noise impacts during construction:

- All construction activities shall be limited to the hours of 8:00 AM to 5:00 PM, Monday through Friday, and shall be prohibited on state and federal holidays;
- The applicant shall hold a pre-construction meeting with the job inspectors and the general contractor/onsite manager to confirm that all noise mitigation measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed prior to beginning construction;
- The applicant shall notify neighbors within 300 feet of the construction area, at least 30 days in advance of extreme noise-generating activities, about the estimated duration of the activity;
- The applicant shall designate a construction noise coordinator who will be responsible for implementing the noise control measures and responding to complaints. This person's name and contact information shall be posted clearly around the project site and shall also be distributed to properties within 200 feet of the site boundaries. The construction noise coordinator shall be available during all times during construction activities and shall maintain a log of complaints. A copy of the log shall be provided to the DCD monthly on the 30th day of each month;
- The applicant shall require construction contractors to limit noise generating construction activities as required by the DCD. No construction activities shall be allowed on weekends without prior authorization of the Zoning Administrator, and no extreme noise generating activities shall be allowed on weekends and holidays;
- The applicant shall require construction contractors to implement the following measures to reduce daytime noise due to construction activities:
 - Equipment and trucks used for construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where

feasible, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible.

- Stationary noise sources shall be located as far from adjacent receptors as possible, and shall be muffled and enclosed within temporary sheds, insulation barriers, or other measures to the extent feasible.
- Prior to the start of construction, the applicant shall construct a temporary sound barrier along the northern and southern property lines to provide the maximum protection for the residential uses to the north and south. The barriers can be constructed out of wood or other materials as long as they have a minimum surface weight of approximately 2.5 pounds per square foot. Possible materials include 1-1/8-inch-thick plywood or fully overlapping 1x redwood boards (1-1/2-inch-thick total). The barriers would likely be 6 to 8 feet tall but this would be refined and approved by a qualified acoustician prior to the issuance of grading permits. Issues to consider when determining the ultimate height, length, and location of the barriers are the actual construction practices, including equipment to be used and the location and duration of noisier activities. The topography will also need to be considered in the final determination of barrier heights and effectiveness.

Significance after Mitigation: Less than significant. Adherence to the measures listed in **Mitigation Measure 4.10-1** would reduce temporary construction noise impacts to a less-than-significant level by requiring certain construction techniques, shielding, and limiting noise-generating construction activities to an appropriate distance from sensitive receptors.

f) Would the project expose persons to or generate excessive ground borne vibration levels?

Impact 4.10-2: Construction and operational activities could temporarily expose persons or structures to excessive groundborne vibration. (Less than Significant with Mitigation)

Construction Vibration

Construction, primarily demolition, grading, and excavation, could generate vibration within the project vicinity. Neither Project Variant proposes any pile driving or blasting, two activities that are associated with relatively high levels of vibration.

The greatest potential for ground vibration would occur with the removal of existing pavement (such as at White Horse Court), demolition, and excavation. Vibration would be generated by various pieces of construction equipment and processes. The closest sensitive receptors to the project site include adjacent residential properties fronting Warren Road and the Le Boulevard apartments.

Construction presents the potential for temporary exposure to elevated levels of groundborne vibration. Although the County has not adopted any standard relative to construction-related vibration, “excessive” is defined here as the potential to cause damage to off-site, nearby structures or to cause annoyance.

To gauge whether construction-related vibration can result in damaging effects, acousticians utilize a measurement called “Peak Particle Velocity” (PPV). PPV measures the maximum amplitude of a vibration-inducing event. PPV is useful in assessing potential damage to buildings or structures insofar as it measures the maximum amplitude of an event such as blasting, jack-hammering or other short-term sources of vibration. For this analysis a PPV of 0.5 inches per second (ips) was used because this is a commonly accepted level at which vibration-related damage could occur.³

Vibration during construction could occur as a result of grading and excavation. **Table 4.10-2** shows the PPV of the equipment to be used in construction.

Table 4.10-2 Typical Levels of Vibration for Construction Equipment

Construction Activity	PPV at 25 feet (ips)	PPV at 15 feet (ips)	PPV threshold
Large Bulldozer	0.089	0.19	0.5
Loaded Trucks	0.076	0.16	0.5
Jack Hammer	0.035	0.05	0.5

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment, 1995.

As shown in the table, PPV levels induced by construction equipment would be well below the 0.5 ips threshold. Moreover, given that vibration scales are logarithmic in nature, vibration energy attenuates substantially with increased distance. Therefore, PPV levels at 50 and 100 feet from the vibration causing activity would be substantially below these levels.

Mitigation Measure 4.5-2a, (see **Section 4.5, Geology and Soils**) requires a pre-construction inspection and documentation of existing structures to document evidence of existing damage, cracks, corrosion, etc. This information will be used to assist in determining whether any damage occurs as a result of construction, whether from excavation, vibration, or other activities.

³ A 0.5 ips threshold would protect more fragile structures against cosmetic and architectural damage.

In terms of the potential for construction vibration to cause annoyance, the County has typically sets limits on the allowable times of day when construction activities could occur. Such limits generally require noise and vibration producing construction activities to be limited to daytime hours, when sensitivity to such annoyance is typically lowest. Accordingly, **Mitigation Measure 4.10-1** imposes limits on hours of construction, thereby also limiting the hours during which vibration could occur.

Operational Vibration

Daily operation of the sanctuary building's mechanical components, including 7 pairs of condensers and an emergency generator, could generate groundborne vibration. However, implementation of **Mitigation Measure 4.10-2** would reduce operational vibration impacts to a less-than-significant level by requiring compliance with American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guidelines. ASHRAE is considered the industry standard for mechanical system design standards.

Mitigation Measure 4.10-2: The DCD shall ensure that the applicant isolates the equipment in the mechanical well per the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guidelines.

Significance after Mitigation: Less than significant. **Mitigation Measure 4.10-1** would limit construction hours, thereby minimizing impacts relative to construction noise and vibration. **Mitigation Measure 4.10-2** would ensure that the mechanical equipment would not generate excessive vibration. These measures would reduce any vibration related impacts to a less-than-significant level.

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4.11 POPULATION AND HOUSING

This section describes and evaluates the effects on population and housing. The analysis is based upon existing and projected demographic information for the Saranap area as drawn from appropriate sources, such as the Contra Costa County General Plan (General Plan), the U.S. Census, and estimates from the Association of Bay Area Governments (ABAG) Projections 2009.

Project Variant A and Project Variant B are entirely equivalent in terms of potential impacts to population and housing, as the differences between the variants have no influence on population or housing issues. Accordingly, there is no need for parallel analysis of the Project Variants in this section.

Comments related to the proposed removal of housing units were received in response to the Notice of Preparation (NOP) for this Environmental Impact Report (EIR). These comments are summarized in **Appendix A** and addressed in **subsection 4.11.3** below.

4.11.1 Existing Conditions

Population Trends

The project site is located in Saranap, a community of unincorporated Walnut Creek located in Central Contra Costa County (Central County).¹ Historical population trends for Saranap, Central County, and the County are shown in **Table 4.11-1**. It is clear in **Table 4.11-1** that the population growth rate in Saranap is much slower than the population growth rate in the County as a whole.

The Association of Bay Area Governments (ABAG) estimates that the County population as a whole will increase by approximately 19.7 percent from 2010 to 2025. Based on its historically relatively slow growth rate, it is likely that population growth in Saranap would be much lower.

Housing

Households Trends

Historical households trends for Saranap, Central County, and the County mirror the population growth trends shown in **Table 4.11-1**. The population and household growth

¹ Contra Costa County is divided into three subcounties: East Contra Costa County, Central Contra Costa County, and West Contra Costa County. The project site is located in Central Contra Costa County.

rates in all three regions slowed down from 2000 to 2010 when compared to growth rates from 1990 to 2000. According to ABAG Projections 2009, the number of households in the County is expected to grow by 12.6 percent between 2010 and 2025. Based on its historically relatively slow growth rate, it is likely that household growth in Saranap would be much lower.

Table 4.11-1 Changes in Population and Households

Jurisdiction	1990	2000	% Change (1990 -2000)	2010	% Change (2000-2010)
Saranap^a					
Population	4,430	4,710	+6	4,864	+3
Households	1,903	2,000	+5	2,019	+1
Central Contra Costa County					
Population	413,858	459,252	+11	471,183	+3
Households	161,453	179,136	+11	183,836	+3
Contra Costa County					
Population	803,732	948,816	+18	1,049,025	+11
Households	300,288	344,129	+15	375,364	+9

Source: U.S. Census Bureau 1990, 2000, and 2010.

Notes:

^a No regional entity publishes population projections specific to Saranap. In an effort to capture only the population trends in Saranap, this section uses the population reported by the U.S. Census Bureau for the census tract in which the project site is located, census tract 3410. Census tract 3410 includes all of Saranap, as well as portions of Walnut Creek and Lafayette. The American Community Survey does not include data at the census tract level. Therefore, there is no more information available for Saranap.

Existing Housing Stock

Between 2000 and 2010, the housing stock in Central County, including Saranap, increased by 9 percent from 183,777 to 193,660 units. Increases in housing stock were nominal in Saranap, where the total number of housing units increased 2 percent from 2,051 in 2000 to 2,096.²

Table 4.11-2 summarizes characteristics of the housing stock in Saranap in 1990 and 2000, showing an increasing trend towards single-family homes, and a decrease in

² US Census 2000, 2010.

multi-family dwellings. In 1990, single-family units comprised approximately 68 percent of the housing stock, while multi-family units comprised the remaining 32 percent. By 2000, single-family residences had increased to 72 percent of the housing stock, while multi-family units decreased to 28 percent.

According to the California Department of Finance, the vacancy rate in Contra Costa County as a whole was approximately 3.0 percent in 2008. The vacancy rate in Lafayette was 1.95 percent and the vacancy rate in Walnut Creek was 3.57 percent.

Table 4.11-2 Changes in Housing Stock, Saranap – 1990 to 2000

Type of Unit	1990		2000	
	# of Units	% of Total	# of Units	# of Total
Single Family Detached Units	1,277	64	1,314	64
Single Family Attached	82	4	153	8
Multifamily 2-4 Units	46	2	55	2
Multifamily 5+ Units	604	30	490	26
Total	2,009	100%	2,051	100%

Note: The U.S. Census is conducted every 10 years. Limited 2010 census data are available as of March 2011. Additional data will be released at a later time. The American Community Survey does not include data at the census tract level.

Source: U.S. Census, 1990 and 2000.

4.11.2 Regulatory Setting

Contra Costa County General Plan

The General Plan contains the following relevant policies related to population and housing.

Land Use Element

3-27 Existing residential neighborhoods shall be protected from incompatible land uses and traffic levels exceeding adopted service standards.

Housing Element

The County updated its Housing Element in 2009. The Housing Element identifies state, regional, and local housing policies, as well as recognized housing needs of the County's residents, housing resources, and housing constraints. As defined by the State Housing Element law, the Housing Element is required to be "an assessment of housing needs and an inventory of resources and constraints relevant to the meeting of these needs."

State law requires that the Housing Element includes an analysis of population, household characteristics, employment trends, regional housing needs, and an inventory of suitable land for residential development.

The Updated Housing Element contains the following relevant policy associated with population and housing:

- 7.1 Establish and maintain development standards that support housing development while protecting quality of life goals.

Project Consistency

The proposed sanctuary building is compatible with the project site's land use designation in the General Plan. As stated in **Chapter 3, Project Description** and **Section 4.13, Traffic and Circulation**, the majority of the congregation lives within 0.5-mile of the facility and walks or uses alternate transportation to reach the site. Therefore, traffic levels in the existing residential neighborhood would not increase such that they would exceed adopted level of service standards.

4.11.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As stated in Appendix G, a project would have a significant impact related to population and housing if it would:

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

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the three significance criteria stated above shows that no impacts would result for one of the criteria.

a) Would the project induce substantial population growth in the area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Neither Project Variant would include the construction of new homes or businesses, and therefore would not directly affect population growth.

Neither Project Variant would require the extension of roads or other infrastructure and would not indirectly induce substantial population growth.

As described in **Chapter 3, Project Description** and **Appendix B**, the sanctuary building is sized to meet the needs of the current congregation, which has remained relatively stable at approximately 350 members for more than 20 years. The main prayer hall is designed to hold a maximum of 400 people to accommodate the needs of the current member base and their guests, and would not accommodate a substantially larger congregation.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in context of the three significance criteria state above shows that less-than-significant impacts would result for two of the criteria.

b) and c) Would the project displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?

Both Project Variants would result in the removal of three existing homes on the project site. One of the homes is currently vacant and two of the homes are rented to members of the church, who are aware of the pending demolition. There is an approximate vacancy rate of 3.0 percent County-wide and 3.57 percent vacancy rate in Walnut Creek. These indicate that sufficient replacement rental housing is available in the vicinity. Therefore, no impact related to the displacement of people or housing would occur.

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4.12 PUBLIC SERVICES

This section provides a description of existing public services in Contra Costa County, including fire protection, police protection, and schools, and regulations related to such services.

Project Variant A and Project Variant B would have similar levels of impact to public services, as the difference between the variants has no possibility of affecting demand for public services.

4.12.1 Existing Conditions

Fire Protection

The Contra Costa County Fire Protection District (CCCFPD) provides fire protection services in the project area. CCCFPD's service area comprises 257 square miles, extending from the City of Antioch in the east to the City of Richmond in the west and the Town of Moraga to the south. The closest CCCFPD facility to the project site is Station 3, located about 1.5 miles to the south of the project site at 1520 Rossmoor Parkway. Station 1, at 1330 Civic Drive, is 1.7 miles from the project site.

Police Services

Police services at the project site are provided by the Contra Costa County Sheriff's Office. The closest station to the project site is the Valley Station, located 5.5 miles southeast in the Alamo area. The Valley Station currently serves the existing Sufism Reoriented facility at 1300 Boulevard Way and would also serve the project site.

Schools

The project site is in the Walnut Creek School District (WCSD). The WCSD serves approximately 3,200 Central Costa County students in kindergarten through eighth grade. The Acalanes Union High School District (AUHSD) serves students in grades nine through twelve; AUHSD's boundaries encompass the project site as well as portions of the communities of Orinda, Lafayette, Walnut Creek, Canyon, and Moraga.

4.12.2 Regulatory Setting

Senate Bill 50

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies to deny project approvals on the basis that public school

facilities (classrooms, auditoriums, etc.) are inadequate. School impact fees are collected at the time when building permits are issued. Payment of school fees is required by SB 50 for all new residential development projects and is considered full and complete mitigation of any school impacts. School impact fees are payments to offset capital cost impacts associated with new developments, which result primarily from costs of additional school facilities, related furnishings and equipment, and projected capital maintenance requirements. As such, agencies cannot require additional mitigation for any school impacts.

Contra Costa County General Plan

The Land Use, Public Facilities/Services, and Open Space Elements of the General Plan contain the following relevant public services and recreation policies:

Land Use Element

- 3-5 New development within unincorporated areas of the County may be approved, provided growth management standards and criteria are met or can be assured of being met prior to the issuance of building permits in accordance with the Growth Management Element.
- 3-6 Development of all urban uses shall be coordinated with provision of essential Community Services or facilities including, but not limited to, roads, law enforcement and fire protection services, schools, parks, sanitary facilities, water and flood control.

Public Facilities/Services Element

- 7-1 New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based upon the demand for these facilities which can be attributed to new development.
- 7-2 New development, not existing residents, should be required to pay all costs of upgrading existing public facilities or constructing new facilities which are exclusively needed to serve new development.
- 7-4 The financial impacts of new development or public facilities should generally be determined during the project review process and may be based on the analysis contemplated under the Growth Management Element or otherwise.

As part of the project approval, specific findings shall be adopted which relate to the demand for new public facilities and how the demand affects the service standards included in the growth management program.

Public Protection

- 7-57 A sheriff facility standard of 155 square feet of station per 1,000 population shall be maintained within the unincorporated area of the County.
- 7-59 A maximum response time goal for priority 1 or 2 calls of five minutes for 90 percent of all emergency responses in central business district, urban and suburban areas, shall be strived for by the sheriff when making staffing and beat configuration decisions.
- 7-60 Levels of service above the county-wide standard requested by unincorporated communities shall be provided through the creation of a County Service Area of other special government unit.

Fire Protection Policies

- 7-62 The County shall strive to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of 3 firefighters to be maintained in all central business district (CBD), urban and suburban areas.
- 7-63 The County shall strive to achieve a total response time (dispatch plus running and set-up time) of five minutes in CBD, urban, and suburban areas for 90 percent of all emergency responses.
- 7-64 New development shall pay its fair share of costs for new fire protection facilities and services.
- 7-70 The effectiveness of existing and proposed fire protection facilities shall be maximized by incorporating analysis of optimum fire and emergency service access into circulation system design.

Open Space Element

- 9-1 Permanent open space shall be provided within the County for a variety of open space uses.
- 9-36 To develop a sufficient amount of conveniently located, properly designed park and recreational facilities to serve the needs of all residents.
- 9-39 To achieve a level of park facilities of four acres per 1,000 population.
- 9-41 A well-balanced distribution of local parks, based on character and intensity of present and planned residential development and future recreation needs, shall be preserved.

Transportation Element

- 5-16 Emergency response vehicles shall be accommodated in development project design.

Project Consistency Analysis

The citations above from the County General Plan set forth the general policy that new development should pay for itself in terms of any incremental increases in demand. New residential development typically brings new people and housing to an area, thus typically increasing demands for fire and police services, as well as parks and schools.

Neither Project Variant has a residential component and would not otherwise increase population or permanent employment in the project area. As further detailed below in **subsection 4.12.3**, neither Project Variant would generate a need for new or expanded police services. Sufism Reoriented members residing in the Saranap community would continue to fund police services through the same means as other residents or businesses located in the area. Similar to most other County projects, both Project Variants would be subject to CCCFPD impact fees in accordance with the CCCFPD fee schedule.

As further detailed below, demands on parks and schools are expected to be negligible, as neither Project Variant contributes additional population or employment in the area.

4.12.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. Per Appendix G, a project would have a significant impact related to public services if it would:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:
 - i. Fire Protection;
 - ii. Police Protection;
 - iii. Schools;
 - iv. Parks;
 - v. Other public facilities.

Discussion of No Impacts

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services?

Fire Protection

Neither Project Variant would result in the need to physically expand fire protection facilities since neither would increase population. County policy has established that new development shall pay its fair share of costs for fire protection facilities and services. The Project Variant ultimately selected will be subject to CCCFPD new development impact fees in accordance with the CCCFPD fee schedule. Therefore, no associated physical environmental impact would occur.

Police Protection

County policies regarding police protection discussed above set forth two measures of performance: 1) for every 1,000 residents of the unincorporated County, 155 square feet of sheriff office space is required; and 2) sheriff response time should be within 5 minutes for 90 percent of certain priority calls.

Neither Project Variant would have any effect on either of the performance measures above. No new population would be added and there is nothing about either Project Variant or the public right-of-way improvements associated with the Project Variants that would infringe on the ability of County Sheriff officers to promptly respond to a call on or near the project site. Therefore, there would be resultant need to physically expand police facilities and thus no associated physical environmental impact would occur.

Schools

Both Project Variants are a religious facility and do not include residential development. The need for school services is generally associated with increases in residential population since households within the county may contain school-aged children. Since neither Project Variant would result in a population increase, nor a corresponding increase in school-aged children, there would be no impact to school facilities.

Parks

In Contra Costa County, open space, parks, and other similar public facilities are typically provided to serve its residential population. Neither Project Variant has a residential component, and therefore would not generate substantial new demand for open space, parks, or other similar public facilities. Accordingly, the Project Variant ultimately selected would result in no need to expand such facilities and thus would have no physical impact.

4.13 TRAFFIC AND CIRCULATION

The County's Measure C Growth Management Program (GMP) guidelines require local jurisdictions to prepare traffic studies for any project with the potential to generate 100 or more peak hour vehicle trips. As part of its application package, the applicant submitted documentation from a qualified traffic engineer to support a determination that no traffic study should be required, because neither Project Variant would generate 100 peak hour trips. **Appendix O.2** documents the applicant's proposed activities relative to peak period travel.

While the County does not dispute the assertions set forth in **Appendix O.2** regarding projected peak hour traffic falling beneath the GMP threshold, the County Public Works Department (County PWD) nonetheless directed the preparation of a quantitative traffic study as a means to better understand and document impacts on adjacent streets. **Appendix O.1** contains the traffic study prepared by Omni-Means LTD under County direction.

As noted in **Chapter 3, Project Description**, Project Variant B includes modifications that would, in some instances, result in differing traffic operating characteristics. The modifications are discussed in **subsection 4.13.3, Methodology**. Where applicable, impacts related to the Project Variants are discussed separately. **Appendix D** includes the relevant correspondence from County PWD.

4.13.1 Existing Conditions

Existing Roadways

Roadways that provide primary circulation in the vicinity of the project site include Boulevard Way, Kinney Drive, Warren Road, Garden Court, Iris Lane, Molly Way, Saranap Avenue, Flora Avenue, Tice Valley Boulevard, Olympic Boulevard, and Mt. Diablo Boulevard. **Figure 3-1** shows the locations of these roadways.

The right-of-way along Boulevard Way, Kinney Drive and Garden Court is generally 50 feet in width. A typical ROW consists of the paved roadway, shoulders or curbs/gutters, sidewalks, and any lands held in reserve by the County. As discussed below, the pavement section within the ROW varies considerably throughout the project area.

Boulevard Way extends between Olympic Boulevard and Mt. Diablo Boulevard, providing access primarily to residential and neighborhood-commercial areas in the Saranap area. Between Olympic Boulevard and Saranap Avenue, it is a two-lane roadway and lacks curbs, gutters, or sidewalks in many locations. The roadway width varies from 22-24 feet and the speed limit is 25 miles per hour (mph). At Saranap

Avenue, the roadway widens to four travel lanes (two in each direction) with curb, gutter, and sidewalks. This design continues to Mt. Diablo Boulevard, providing access to residential, retail, and commercial areas.

The County's Roadway Network Plan (RNP), part of the County's General Plan, designates Boulevard Way as an arterial street. On-street vehicle parking is generally prohibited on Boulevard Way between Olympic Boulevard and Saranap Avenue; however, off-pavement parking has been observed along portions of Boulevard Way.

Kinney Drive is a residential-collector street that extends in a westerly direction from Boulevard Way. A two-lane street without sidewalks, Kinney drive provides access exclusively to residential areas. On-street vehicle parking is not allowed.

Garden Court extends north of Boulevard Way and just east of Kinney Drive. Garden Court is a residential cul-de-sac approximately 350 feet long.

Warren Road extends east from Boulevard Way to Dewing Lane. Warren Road is a two-lane, 20-foot-wide street that serves residential areas south of the project site. The County's RNP designates Warren Road as a residential collector street.

Iris Lane extends north from Boulevard Way and is a purely residential street. Located east of Garden Court, the 22-foot wide, two-lane street provides access to residential areas directly north of the project site.

Molly Way is a one-way "loop" street that provides access to comparatively newer residential development. It is located north of Boulevard Way and west of Saranap Avenue. A sidewalk is present along the north side of Boulevard Way extending from the Molly Way egress to Saranap Avenue. No on-street vehicle parking is allowed on Molly Way.

Saranap Avenue extends north from Boulevard Way east of the project site. A two-lane roadway, Saranap Avenue provides access to residential and commercial areas between SR-24 and Boulevard Way. Curb, gutter, and sidewalk are present along its entire length between Boulevard Way and the freeway. On-street vehicle parking is allowed in this segment. The County's RNP designates Saranap Avenue as a collector street.

Flora Avenue extends south of Boulevard Way to Warren Road and is located east of the project site. Flora Avenue is a wide two-lane street that provides access to commercial and residential areas with pedestrian sidewalks on both sides of the street for most of its length. The County RNP designates Flora Avenue as a collector street.

Olympic Boulevard is a major arterial street that extends in an east-west direction south of the project site. East of Boulevard Way, Olympic Boulevard is a four-lane street with raised medians and left-turn storage lanes providing access to downtown Walnut Creek. West of Boulevard Way, Olympic Boulevard is a wide, two-lane arterial street extending through Pleasant Hill Road to Reliez Station Road in the City of Lafayette.

Tice Valley Boulevard extends in a north-south direction and forms the fourth (northbound) leg of the Boulevard Way/Olympic Boulevard intersection. A four-lane arterial street, Tice Valley Boulevard provides access to a mix of residential, commercial, and institutional uses as it extends south from Boulevard Way into the City of Walnut Creek and the Rossmoor retirement community.

Mt. Diablo Boulevard is east of the project site and provides access to commercial-retail areas as well as access to SR-24. A four-lane arterial street, Mt. Diablo Boulevard extends east from Boulevard Way into downtown Walnut Creek.

Regional access to the proposed project site is provided by Interstate 680 (I-680) and State Route 24 (SR 24). These facilities are located east and north of the project site, respectively. Vehicle access to I-680 can be gained at the Olympic Boulevard/I-680 north-south interchange. Access to SR 24 can be gained via Boulevard Way to Mt. Diablo Boulevard.

Existing Traffic Levels

Level of Service Methodology

Intersection Level of Service (LOS) provides a quantitative measure of traffic operational performance. LOS uses a letter-grade scale ranging from “A” (least amount of traffic delay) to “F” (greatest amount of traffic related delay). These ratings correspond to a volume/capacity (v/c) ratio and/or vehicle delay in seconds.

At unsignalized intersections, stated intersection LOS usually refers to the minor street or stop-sign controlled driveway movement. LOS can also characterize intersection capacity. This is typically measured as the “volume to capacity ratio” or V/C ratio. A V/C ratio greater than 1 indicates that the volume of vehicles moving through a particular intersection exceeds the capacity of the given intersection.

Table 4.13-1 presents descriptions for each of the LOS categories.

Study Intersections

Study intersections were chosen in consultation with Contra Costa County Engineering staff. The selection of study intersections is also consistent with guidance from the Contra Costa Transportation Authority (CCTA), which states that any major intersection experiencing a 50-vehicle trip increase from a proposed project must be analyzed for future operating conditions. Intersection turning movement counts were conducted and/or obtained for the following seven existing intersections:

- Boulevard Way / Olympic Boulevard / Tice Valley Boulevard
- Boulevard Way / Warren Road
- Boulevard Way / Kinney Drive
- Boulevard Way / Saranap Avenue

Table 4.13-1 Level of Service (LOS) Criteria

Level of Service	Type of Flow	Description	Turning Movements	Delay (Unsignalized Intersection)	Volume/Capacity Ratio
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	Less than 10 seconds	Less than 0.6
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	Between 10 and 20 seconds	.61 - .7
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	Between 20 and 35 seconds	.71- .8
D	Near Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles of stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	Between 35 and 55 seconds	.81- .9
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	Between 55 and 80 seconds	.91 – 1.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	Greater than 80 seconds	Greater than 1.0

Source: Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000, Contra Costa Transportation Authority (CCTA), Technical Procedures Update, Final, July 9, 2006

- Boulevard Way / White Horse Court (existing private driveway)
- Boulevard Way / Flora Avenue
- Boulevard Way / Mt. Diablo Boulevard

Table 4.13-2 below presents existing LOS at these intersections. As shown, all of the study intersections along Boulevard Way are operating at LOS B or better during the AM and PM peak hours, and none of the intersections meet the criteria for signalization.¹ Two intersections located just west of the project site exhibit unique characteristics that can create vehicle or pedestrian conflicts. These include the Boulevard Way/Kinney Drive/Garden Court and Boulevard Way/Warren Road intersections. A brief description of each intersection follows:

Table 4.13-2 Existing Conditions at Project Area Intersections

#	Intersection	Control Type	AM Peak Hour			PM Peak Hour		
			V/C Ratio or Delay	LOS	Signal Warrant Met?	V/C Ratio or Delay	LOS	Signal Warrant Met?
1	Boulevard Way/Olympic Boulevard/Tice Boulevard	Signal	0.43 (VC)	A	NA	0.44	A	NA
2	Boulevard Way/Warren Road	2 way stop	10.3 (delay)	B	No	10.7	B	No
3	Boulevard Way/Kinney Drive	2 way stop	10.7 (delay)	B	No	10.8	B	No
4	Boulevard Way/Saranap Avenue	2 way stop	10.9 (delay)	B	No	11.2	B	No
5	Boulevard Way/White Horse Court	2 way stop	10.6 (delay)	B	No	10.1	B	No
6	Boulevard Way/Flora Avenue	2-way stop	9.9 (delay)	A	No	9.6	A	No
7	Boulevard Way/Mt. Diablo Blvd.	Signal	0.48 (VC)	A	NA	0.66	B	NA

Source: Omni-Means, LTD., 2009.

¹ California Manual on Uniform Traffic Control Devices, 2006.

- The **Boulevard Way/Kinney Drive/Garden Court** intersection is non-standard in its approach alignment and traffic control. At this location, Boulevard Way forms the northbound and westbound approach legs of the intersection. However, since Boulevard Way is designated as an arterial street and carries the majority of through-traffic flow through the intersection, both approach legs are uncontrolled, and transition through a sharp curve.
 - **Kinney Drive** forms the eastbound approach leg of the intersection and is stop-sign controlled. Eastbound motorists stopped on Kinney Drive can have a difficult time determining if approaching motorists (westbound) on Boulevard Way will continue west on Kinney Drive or transition south around the curve.
 - **Garden Court** forms the southbound approach of the intersection and is stop-sign controlled. This southbound approach is offset approximately 20-25 feet to the east and requires careful progression for inbound/outbound motorists.
- The **Boulevard Way/Warren Road** intersection is a standard, minor street stop-sign-controlled intersection. Warren Road is stop-sign controlled at Boulevard Way forming a “T-type” intersection. Field observations indicate that existing foliage and utility poles on the north side of the intersection require motorists turning left from Warren Road onto Boulevard Way to extend slightly into the intersection to see oncoming north-south traffic. The narrow pavement width of Boulevard Way in this stretch (approximately 20 feet) exacerbates this problem.

Project Area Roadways

In addition to the intersection analysis, 24-hour average daily traffic (ADT) counts were conducted on Kinney Drive and Boulevard Way at the following four roadway segments as well as the existing driveway:²

1. Boulevard Way: 2-lane arterial, between Warren Road and Kinney Drive
2. Kinney Drive: 2-lane collector, west of Boulevard Way
3. Boulevard Way: 2-lane arterial, between Garden Court and Iris Lane
4. Boulevard Way: 2-lane arterial, between Molly Way and Saranap Avenue
5. Project Driveway: existing private road, off Boulevard Way

Existing daily roadway segment traffic operations have been quantified utilizing roadway ADT-based LOS thresholds. **Table 4.13-3** contains a summary of the existing roadway segment LOS conditions. The table shows that each roadway has a “target” or acceptable LOS of “D” per Contra Costa County policy, and also shows that all studied roadway segments are currently meeting this target.

² Baymetrics Traffic Resources, Average Daily Traffic (ADT) counts, Boulevard Way and Kinney Drive, March 25-29, 2009.

Table 4.13-3 Existing Roadway Level of Service

Roadway Segment	Roadway Type	“Target” LOS	Average Daily Traffic	LOS, based on ADT
Boulevard Way, Warren Road to Kinney Drive	2-lane arterial	D	4,230	A
Kinney Drive, west of Boulevard Way	2-lane collector	D	1,800	A
Boulevard Way, from Garden Court to Iris Lane	2-lane arterial	D	4,440	A
Boulevard Way, from Molly Way to Saranap Avenue	2-lane arterial	D	4,590	A

Source: Omni-Means LTD, 2009.

Bicycle and Pedestrian Facilities

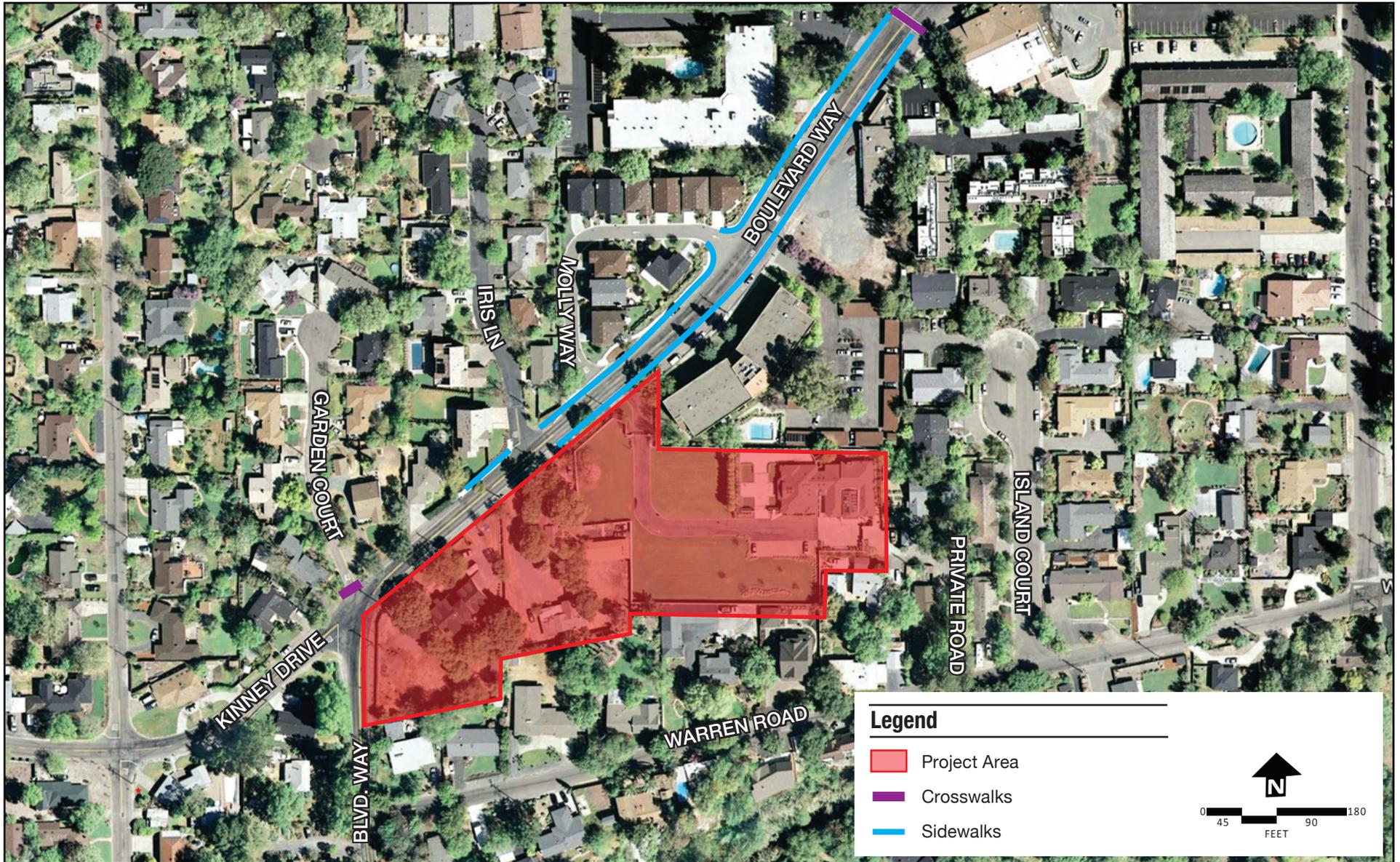
Pedestrian and bicycle facilities in the project vicinity are incomplete, with varying shoulders, sidewalks, crosswalks, and bicycle facilities. **Figure 4.13-1** shows the location of sidewalk and bicycle facilities.

- Along Boulevard Way between Olympic Boulevard and Garden Court, the roadway has unimproved shoulders and minimal off-street walking areas.
- Between Garden Court and Saranap Avenue, some sidewalks are present in front of the Le Boulevard apartment building and the housing along Molly Way. To the east, sidewalks extend from about Saranap Avenue easterly to Mt. Diablo Boulevard.
- Boulevard Way has pedestrian crosswalks at Boulevard Circle, Rule Court, and Saranap Avenue.

There are no separate bicycle facilities in the immediate project vicinity, although Boulevard Way is considered a “Class III” or on-street bike route with no separate bicycle lane. The residential streets north and west of the project site do not include any bicycle routes or facilities. About 0.5 miles south of the project area, Olympic Boulevard includes a separate bicycle lane.

Transit Facilities

CCTA provides bus transit service in the project area through its “County Connection” bus system. Route #1 serves the project area with bus stops along Boulevard Way. Route #1 operates between 5:55 AM and 7:30 PM on weekdays only with headways every 60 minutes.



Existing Crosswalks and Sidewalks

Figure

4.13-1

Congestion Management Plan

In December 2009, CCTA adopted a Congestion Management Plan (CMP), as required by California state law.³ The CMP groups County roadways into two categories: “Routes of Regional Significance” and “Non-Regional Routes,” and establishes LOS thresholds to be used in evaluating impacts to these facilities.

- Routes of Regional Significance include State Route 24 and Interstate 680.
- Non-regional routes include Boulevard Way, Olympic Boulevard, Tice Valley Boulevard, and Mt. Diablo Boulevard. LOS D is the established threshold for non-regional routes.

Pertinent components of the CMP include:

- (a) Traffic level-of-service (LOS) standards that apply to a system of designated routes
- (b) A performance element that includes performance measures to evaluate current and future multimodal system performance for the movement of people and goods.
- (c) A seven year capital improvement program (CIP) that maintains or improves the performance of the multi-modal system or mitigates regional transportation impacts
- (d) A program to analyze the impacts of local land use decisions on the regional transportation system
- (e) A travel demand element that promotes transportation alternatives to the single-occupant vehicle.

Contra Costa County General Plan

The Transportation & Circulation Element of the General Plan contains the following relevant policies:

Transportation & Circulation Element

- 5-4 Development shall be allowed only when transportation performance criteria are met and necessary facilities and/or programs are in place or committed to be developed within a specific period of time.
- 5-8 Direct frontage and access points on arterials and collectors shall be minimized.
- 5-13 Physical conflicts between vehicular traffic, bicyclists, and pedestrians shall be minimized.
- 5-15 Curbs and sidewalks shall be provided in appropriate areas.

³ California Government Code Section 65088 et seq.

- 5-25 Planning and provision for a system of safe and convenient pedestrian ways, bikeways and regional hiking trails shall be continued as a mean of connecting community facilities, residential areas, and business districts, as well as points of interest outside the communities utilizing existing public and semi-public right-of-way.
- 5-31 Local road dimensions shall complement the scale and appearance of adjoining properties.

The findings of this analysis, as presented below and in **Appendix O.2**, demonstrate that both Project Variants meet established performance criteria, consistent with the requirements of General Plan policy 5-4.

Consistent with General Plan policy 5-8, both Project Variants include only one primary entrance on an arterial (Boulevard Way). **Mitigation Measures 4.13-1** and **4.13-2** would ensure consistency with General Plan policies 5-13, 5-15, and 5-25.

Regarding General Plan policy 5-31, Project Variant A would result in no change to the dimensions of adjacent roadways. Project Variant B would result in an expansion of the half-width of Boulevard Way closest to the project. This expansion—to a total of 17 feet (12 feet of paved width, 5 feet of shoulder, plus sidewalks)—would represent a change from existing conditions, but would enhance the safety of pedestrians and motorists.

4.13.2 Methodology

Traffic Modeling Considerations

As detailed in **Chapter 3, Project Description**, the overwhelming majority of programming at the project site would occur during evening and weekend hours, contributing minimal trips during typical weekday morning and late afternoon peak hours.

The applicant currently conducts nearly all of its programming at 1300 Boulevard Way, about 0.25-mile from the project site. Existing traffic counts on project area roadways (as shown in **Tables 4.13-2** and **4.13-3** above) thus include traffic related to the existing sanctuary that occurs during peak hours.

Trips associated with operations at the applicant's current site were included in the modeling of future conditions, as it is reasonable to assume a similar use would occupy the existing facility upon the applicant's sale or lease of the property.

Field Observations

As the applicant's existing facility is located in such close proximity to the proposed site, analysts were afforded the opportunity to personally observe traffic, pedestrian, and parking operations at the existing facility.

The traffic study in **Appendix O.1** reflects this reconnaissance data of driveway traffic counts and parking surveys conducted on a typical weekday with no special event activities. Existing driveway counts and parking surveys were also conducted during the peak special event of the year (Annual Celebration) to obtain a "worst case" scenario. Accordingly, the impact analysis looks at both typical daily traffic impacts as well as those occurring during a high-attendance special event.

Typical daily peak hour data collection

Table 4.13-4 shows weekday peak hour and weekday peak activity trip generation for existing uses. During typical weekday AM (7:45-8:45 AM) and PM (5:00-6:00 PM) peak commute periods with no special event activities, the existing facility at 1300 Boulevard Way is generating 6 AM peak hour trips (4 inbound, 2 outbound) and 21 PM peak hour trips (10 inbound, 11 outbound), based on observed driveway counts.

During this same time period, pedestrian observations were also conducted to gauge foot travel to/from the facility. During the AM peak hour, this equated to three pedestrian trips, while during the PM peak hour there were eight pedestrian trips.

Data collection during periods of highest use

Trip generation counts were also taken on a weekday, when typical classes can generate attendance by all members. The highest attended activity at the 1300 Boulevard Way facility occurs on a Friday evening from 8:00 p.m. to 9:30 p.m. starting in October and continuing through June each year. As shown in **Table 4.13-4**, existing uses are currently generating 44 trips between 7:30-8:30 PM and 46 trips during the 9:30-10:30 PM time period.

During this evening time period, pedestrian activity was observed. Approximately 75 pedestrians were observed walking to/from the facility using the site's main driveway off Boulevard Way (pedestrian counts did not include access from other areas). From the 75 pedestrians, 45 were observed crossing Boulevard Way in a north-south direction at the Saranap Avenue crosswalk. The remaining 30 pedestrians were observed walking along Boulevard Way with the primary inbound flow from west to east. Very few pedestrians were observed walking from the east from the Flora Avenue area. It is noted that these pedestrian observations did not account for all pedestrian traffic to/from the site due to limitations in the field (multiple access, limited daylight).

Table 4.13-4 Existing Sanctuary Trip Generation

Surveyed Time Period	In	Out	Total	In	Out	Total
Typical Weekday, Non-Peak Activity Period						
Weekday AM & PM Commute Hour	7:45 -8:45 AM			4:30-5:30 PM		
March 25, 2009 (Wednesday)						
Vehicle Trips	4	2	6	10	11	21
Pedestrian Activity	-	-	3	-	-	8
Typical Weekday Peak Activity Period (8:00-10:00 PM)						
	7:30-8:30 PM			9:00-10:00 PM		
March 27, 2009 (Friday)						
Vehicle Trips	41	3	44	4	42	46
Pedestrian Activity	-	-	75	-	-	NA
Special Event						
Weekday Peak Activity 8:00-10:00 PM	7:00-8:00 PM			9:30-10:30 PM		
March 20, 2009 (Friday)						
Vehicle Trips	80	23	103	28	90	118
Pedestrian Activity	-	-	176	-	-	NA

Source: Omni-Means Engineers and Planners, AM and PM peak hour (7:00-9:00 AM-4:00-6:00 PM) weekday vehicle counts and pedestrian surveys at 1300 Boulevard Way, 3-25-09. Weekday peak activity vehicle counts and pedestrian surveys during a non-event period (7:00-10:00 PM 3-27-09) and special event period (7:00-10:00 PM 3-20-09).

Data collection during Annual Celebration

To determine a “worst case” scenario for vehicle trip generation and parking demand, existing trip generation was observed during the peak annual event (the “Annual Celebration” event, which occurred on the weekend of March 20-22, 2009). The highest attended event of the Annual Celebration occurs on a Friday evening between 8:00-10:00 PM. Based on attendance data supplied by the applicant for that evening, approximately 395 people attended the event. During this time period, Omni-Means observed that 103 total vehicle trips between 7:30-8:30 PM and 118 total vehicle trips between 9:30-10:30 PM. These vehicle trips were comprised of drive-alone and carpool.

Pedestrian observations were also conducted during the same annual event period. Based on limited field surveys, approximately 176 pedestrians were observed walking to/from the facility.

Development of Project Variant B

The County Public Works Department (County PWD) reviewed plans to ensure any improvements affecting the public right-of-way comport with County standards and practices.

As described in **Chapter 3, Project Description**, DCD, County PWD, and the applicant participated in an ongoing dialogue regarding proposed improvements to Boulevard Way immediately adjacent to the project site. County PWD provided comments to the project applicant in a May 4, 2010 letter, attached as **Appendix D**. Project Variant B was developed in response to the following County PWD recommended conditions of approval:

- Expanding the north/east bound lane of Boulevard Way to 17 feet of total width, including a 12 foot travel lane and a 5 foot shoulder. (Project Variant A plans assume maintenance of the existing width.)
- Maintaining existing traffic controls at the intersection of Boulevard Way/Garden Court/Kinney Drive:⁴
 - Boulevard Way: no controls
 - Garden Court: stop sign at Boulevard Way intersection
 - Kinney Drive: stop sign for traffic moving eastbound at the Boulevard Way intersection.
- Construction of pedestrian improvements, including:
 - A 5-foot-wide sidewalk from the main driveway to Warren Road.⁵
 - Two crosswalks:
 - Across Garden Court, at its intersection with Boulevard Way and Kinney Drive
 - Across Boulevard Way, in a to-be-determined location between Garden Court and Molly Way.
- Addition of a bus pull-out area east of the main driveway

⁴ The applicant submitted an alternative right-of-way configuration plan for County consideration. This plan, prepared for the applicant by Design, Community, and Environment or DC&E, is included in **Appendix C**. In this EIR, **Chapter 5, Alternatives**, evaluates the comparative impacts of the DC&E plan to Project Variant B.

⁵ The project site does not extend to Warren Road. This recommended condition requires construction of a standard curb ramp and sidewalk within the public right-of-way of a neighboring parcel along Boulevard Way, requiring an encroachment permit from County PWD.

- Redesign of the Boulevard Way frontage to allow for adequate sight distance for vehicles exiting from the main driveway, assuming oncoming traffic is moving at a speed of 35 miles per hour (also known as a “design speed” or “sight distance” of 35 mph).⁶ To achieve a 35 mph sight distance, the proposed perimeter wall and landscaping need to be relocated about 30 feet further away from the Boulevard Way right-of-way.

4.13.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. A project would have a significant impact on transportation/traffic if it would:

- a) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- b) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- c) Result in inadequate emergency access;
- d) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- e) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities; or
- f) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Beyond the CEQA Appendix G thresholds, CCTA sets forth additional criteria that must be considered in traffic impact analyses in Contra Costa County. CCTA’s additional criteria are determined in part by the type of roadway most closely associated with the project under investigation. In this case, the roadway most closely associated with the

⁶ The posted speed limit on this portion of Boulevard Way is 25 miles per hour.

project site is Boulevard Way. CCTA classifies Boulevard Way as a non-regional route. Thus, CCTA's criteria for non-regional routes, listed below, are also considered in this analysis.

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the nine significance criteria stated above shows that no impacts would result for three of the criteria.

a) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

This impact discussion takes into consideration both a criterion from CEQA Appendix G as well as two of the three CCTA criteria for non-regional routes described above.

This discussion is equally applicable to Project Variant A and Project Variant B insofar as both scenarios generate an equivalent amount of traffic that would utilize local roadways.

The applicable congestion management program is CCTA's CMP, adopted in December 2009. As discussed in **subsection 4.13.2** above, pertinent components of the CMP involve the use of County-approved LOS standards and the requirement for preparation of traffic impact analyses for projects with the potential to increase traffic on County roadways.

Projected traffic falls beneath the GMP and CMP thresholds for preparation of a traffic impact analysis. Nonetheless, a traffic impact analysis comporting with County requirements has been prepared as part of this EIR. Moreover, the traffic impact analysis uses LOS standards as established by CCTA for the various roadway types potentially affected by the Project Variants. As further discussed below in **Impact 4.13-1**, the inclusion of Project Variant-related traffic on top of existing traffic would not result in the degradation of LOS at any intersection or roadway to an unacceptable level.

Moreover, the CMP includes an element that encourages the reduction of use of single-occupant vehicles for travel on County roadways. To this end, the applicant has submitted a transportation demand management or TDM program as part of both Project Variants. The TDM plan is submitted in part to justify a reduction in the amount of required on-site parking spaces. The TDM program includes but is not limited to the following components, all of which would reduce single-occupancy vehicle travel to the project site:

- A pledge from more than 160 members of the organization living in close proximity to the project site to always walk, bike, or carpool to major activities on the project site;
- A program of parking monitors that would limit parking to identified carpools;
- A shuttle service to a parking lot at the Meher Schools;
- On-site bicycle facilities.

In considering approval either Project Variant, the County will also consider the TDM program. If either Project Variant is ultimately approved, the County will include adherence to and monitoring of the TDM program as conditions of approval.

Therefore, the neither project variant would result in conflict with the applicable congestion management program.

b) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

This discussion is equally applicable to Project Variant A and Project Variant B.

The project site is surrounded by developed areas in all directions. The closest airport to the project site is Buchanan Field, located more than 8 miles away in the City of Concord. Moreover, no known private use airstrips are located within 2 miles of the project site. Based on the project site's significant distance from public airports and private airstrips, the proposed use would not introduce any foreseeable hazards to aircraft or to people residing or working in the project area.

c) Would the project result in inadequate emergency access?

Public right-of-way

As shown in **Figure 3-8**, Project Variant B includes the widening of the paved portion and shoulder of Boulevard Way in the project vicinity. The widening is not necessary to ensure adequate emergency access, but it would nevertheless enhance emergency vehicle access in the project vicinity.

Neither Project Variant A nor Project Variant B includes any other substantial modifications to the public right-of-way that could possibly reduce or limit emergency access relative to existing conditions.

Private driveway

A private driveway off Warren Road provides secondary access to the site for emergency vehicles. The Contra Costa County Fire Protection District (CCCFPD), in a letter dated April 26, 2010 (**Appendix C**), requires provision of adequate space on the

project site for a fire truck to turn around. A diagram attached to **Appendix C** demonstrates the plan includes adequate space for this fire truck turn-around. This aspect of the plan is the same in both Project Variants.

CCCFPD indicated that the secondary driveway was adequate at its present width to provide emergency access. Accordingly, emergency internal circulation considerations meet County standards.

However, CCCFPD has stipulated that if the adjacent Odell property were to be purchased by the applicant, the applicant would be required to expand the width of the secondary driveway to 20 feet to improve emergency access. This stipulation will be developed as a condition of approval. As further discussed in **Section 4.3, Biological Resources**, the potential future widening of this secondary driveway would require the removal of seven trees and lead to possible damage to other trees. Please see **Impact 4.3-1** and the associated mitigation measure for further detail.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the nine significance criteria stated above shows that less-than-significant impacts would result for one of the criteria.

d) Would project related traffic substantially degrade operations of project area intersections and roadways, thus posing a conflict with Level of Service standards set forth in the County CMP?

This impact discussion takes into consideration both a criterion from CEQA Appendix G as well as two of the three CCTA criteria for non-regional routes described above.

Expected traffic would not vary between the two Project Variants. These variants differ only in terms of public right-of-way improvements and thus have no effect on projected traffic levels.

As noted in the Methodology discussion above, traffic impacts were computed conservatively, by analyzing both typical weekday operations and a maximum-attendance special event.

As discussed below, Project Variant trips in combination with trips from other near term projects would not result in a substantial worsening of LOS at area intersections. All roadway segments would remain at LOS A, and all area intersections would continue to operate at LOS A or B.

Near-Term (No Project) Traffic Conditions

Near-term (approved/pending) traffic conditions represent existing plus approved project traffic that would be generated in the next 3 to 5 years. Approved/pending development includes projects that have either been approved by Contra Costa County

or the City of Walnut Creek and are not yet constructed, or have a reasonable chance of being approved and constructed prior to either Project Variant. It is assumed that these projects are not yet part of the “background environment” included as existing conditions in the County’s traffic model. Inclusion of these approved/pending projects is a reasonable and conservative approach for gauging traffic impacts of either Project Variant at the sanctuary’s opening year.

Based on discussions with Engineering and Planning staffs from both Contra Costa County and the City of Walnut Creek, the following approved/pending projects have the potential to affect traffic flows in the project study area⁷:

City of Walnut Creek

Metropole (Mixed-Use)	181 Dwelling Units, 21,000 SF Office & Retail
John Muir Medical Center	682,297 SF Hospital, 83,000 SF low-intensity hospital
555 Ygnacio Valley Road	87 Dwelling Units
Iron Horse Trail Office Plaza	6,750 SF Office
Downtown Library	32,500 SF
Specific Plan	118,940 SF Retail, 46 Dwelling Units, 97,300 SF Office
Broadway Plaza Retail	107,000 SF Retail (Neiman Marcus)

Contra Costa County

Park Place Office	18,000 SF Office
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Peak hour (morning and evening) approved project trips were added to existing intersection volumes based on trip assignments found in previous transportation studies conducted for those projects. Where necessary, approved vehicle trips were extrapolated through adjacent project study intersections not included in the prior transportation studies.

Table 4.13-5 shows near-term, no project intersection LOS with approved/pending traffic added to existing peak hour traffic volumes. As calculated, all seven project study intersections would continue to operate at acceptable levels (LOS B or better).

⁷ For ease of computation, these projects are listed at their maximum proposed square footages and do not account for any reductions that may have been imposed during processing and/ or approval, and do not net out demolition of existing square footage. Accordingly, the near-term impacts analysis is conservative because it overstates the amount probable future development. Cumulative long-term development and associated traffic impacts are presented in **subsection 6.2.13**.

Table 4.13-5 Near-Term Conditions: Intersection Levels-of-Service

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			Existing	Near-Term	Existing	Near-Term
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.43	A 0.44	A 0.44	A 0.46
2	Boulevard Way/Warren Road	TWSC	B 10.3	B 10.4	B 10.7	B 10.8
3	Boulevard Way/Kinney Drive	TWSC	B 10.7	B 10.7	B 10.8	B 10.9
4	Boulevard Way/Saranap Avenue	TWSC	B 10.9	B 11.0	B 11.2	B 11.3
5	Boulevard Way/White Horse Court	TWSC	B 10.6	B 10.7	B 10.1	B 10.2
6	Boulevard Way/Flora Avenue	TWSC	A 9.9	A 10.0	A 9.6	A 9.6
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.48	A 0.49	B 0.66	B 0.69
8	Boulevard Way/Project Drive (future)	TWSC	----	----	----	----

Source: Omni-Means LTD, using Intersection LOS based on HCM 2000 methodology (Synchro-Sim traffic software) for signalized and unsignalized intersections.

Near-Term (No Project) Roadway Operation

Table 4.13-6 shows near-term (no project) roadway operation and LOS. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at LOS A with the addition of traffic from recently approved/pending projects.

Trip Generation

Daily and weekday peak hour vehicle trip generation has been based on driveway counts conducted at the existing facility off Boulevard Way (1300 Boulevard Way) and the most recent program description and activity schedule submitted to Contra Costa County as part of the required Transportation Demand Management (TDM) plan and detailed in Chapter 3, Project Description.

Table 4.13-6 Near-Term Conditions: Roadway Segment LOS

Roadway Segment	Configuration	Existing		With Near-Term Approved Projects	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-lane arterial	4,230	A	4,440	A
Kinney Dr. west of Boulevard Way	2-lane collector	1,800	A	1,800	A
Boulevard Way: Garden Ct. to Iris Lane	2-lane arterial	4,440	A	4,660	A
Boulevard Way: Molly Way to Saranap Ave	2-lane arterial	4,590	A	4,820	A

Source: Omni-Means LTD, 2009.

Traffic analysis was conducted for three time periods:

1. **Typical Weekday:** Monday through Friday (all year) 9:00 AM. – 6:00 PM.
25 persons expected to access facility
2. **Typical Non-Special Event Peak Activity Period:** Friday Evening (Oct. - June) 8:00 – 9:30 PM.; 357 persons expected to access facility
3. **Annual Special Event (March)** Friday or Saturday Evening 8:00-10:30 PM.;
400 persons expected to access facility

Table 4.13-7 summarizes daily and peak hour (and off-peak hour) trip generation based on the schedule of programs at the proposed facility.

Table 4.13-7 Trip Generation

Surveyed Time Period	In	Out	Total	In	Out	Total
Typical Weekday, Non-Peak Activity Period						
Weekday AM & PM Commute Hour	7:45 -8:45 AM			4:30-5:30 PM		
Vehicle Trips	17	8	25	12	13	25
Typical Weekday Peak Activity Period (8:00-10:00 PM)						
	7:30-8:30 PM			9:00-10:00 PM		
Vehicle Trips	49	3	52	5	49	54
Special Event						
Weekday Peak Activity 8:00-10:00 PM	7:00-8:00 PM			9:30-10:30 PM		
Vehicle Trips	80	24	104	29	90	119

Source: Omni-Means LTD, AM and PM peak hour (7:00-9:00 a.m.-4:00-6:00 p.m.) weekday vehicle counts at 1300 Boulevard Way, 3-25-09.

Traffic Impacts with Either Project Variant

Trip Assignment

Traffic analysts assigned weekday peak hour trips onto the local street network based on field observations of activity at the 1300 Boulevard Way site as well as to demographic information on the organization's membership provided by the applicant. Consideration was also given to freeway access, project driveway location, and adjacent residential areas. Based on these factors, trip assignment would be as follows:

Boulevard Way to/from the east:	65%
Saranap Avenue to/from the north:	25%
Boulevard Way to/from the east:	40%
Boulevard Way to/from the west:	35%
Kinney Drive to/from the west:	20%
Boulevard Way to/from the south:	15%
Total Trip Assignment:	100%

Near-Term Plus Project Variant Intersection Operations, Peak Hour

Table 4.13-8 shows the addition of peak-hour trips added to near-term (no project) traffic volumes and resultant LOS at study intersections. With either Project Variant traffic, all study intersections would continue to operate at acceptable levels during the morning and afternoon peak hours. In fact, the LOS grade at each intersection remains the same with the addition of Project Variant traffic.

Table 4.13-8 Near-Term Plus Project Variant Traffic Intersection Operations, Peak Hour

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			Near Term, No Project	Near Term, Plus either Project Variant	Near Term, No Project	Near Term, Plus either Project Variant
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.44	A 0.44	A 0.46	A 0.46
2	Boulevard Way/Warren Road	TWSC	B 10.4	B 10.4	B 10.8	B 10.8
3	Boulevard Way/Kinney Drive	TWSC	B 10.7	B 10.8	B 10.9	B 11.0
4	Boulevard Way/Saranap Avenue	TWSC	B 11.0	B 11.0	B 11.3	B 11.3
5	Boulevard Way/White Horse Court *	NA	----	----	----	----
6	Boulevard Way/Flora Avenue	TWSC	A 10.0	A 10.0	A 9.6	A 9.7
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.49	A 0.50	B 0.69	B 0.69
8	Boulevard Way/Project Drive (future)	TWSC	----	A 9.9	----	B 10.2

Source: Omni-Means LTD, 2009.

*This intersection would be removed with either Project Variant.

Near-Term Plus Project Variant Intersection Operations, Non-Peak Hour

The traffic impact analysis also investigated typical weekday peak activity period and special event traffic activity. As discussed previously, these activities occur outside of peak traffic periods, when traffic volumes are comparatively light.

During these periods, vehicle activity into and out of the project site via the new driveway (Intersection #8 above) would be greater than during peak traffic periods, but total through-traffic on Boulevard Way would be substantially lower. During the non-peak hour time periods, the new Boulevard Way/Project Driveway would operate at

LOS A. Adjacent residents travelling on Boulevard Way would notice increased vehicle and pedestrian activity during these time periods, consistent with the existing operations at 1300 Boulevard Way.

Near-Term Plus Project Variant Roadway Operation

Table 4.13-9 shows near term plus Project Variant roadway operation and LOS. As shown in the table, the four analyzed roadway segments would continue to operate at LOS A with the addition of Project Variant traffic volumes.

Table 4.13-9 Near-Term Plus Project Variant Traffic Roadway Operations, Peak Hour

Roadway Segment	With Near-Term Approved, No Project		With Near-Term Approved Plus either Project Variant		Project-Related Change in ADT
	ADT	LOS	ADT	LOS	% Increase
Boulevard Way: Warren Road to Kinney Drive	4,440	A	4,460	A	1%
Kinney Drive: west of Boulevard Way	1,800	A	1,840	A	2%
Boulevard Way: Garden Court to Iris Lane	4,660	A	4,715	A	1%
Boulevard Way: Molly Way to Saranap Avenue	4,820	A	4,905	A	2%

Source: Omni-Means LTD, 2009.

Effects on Local Streets

Projects that generate fewer than 100 peak hour trips have little effect on the level of service experienced on local streets that are currently operating at an acceptable level. Nevertheless, the County directed that a traffic study be prepared for the Project Variants and also requested that a qualitative discussion be included in the EIR to provide an assessment of the percentage increase in traffic. This discussion is not relevant to the impact thresholds, and does not describe any CEQA impacts of the project. It is provided at the County's request.

There has been little research conducted on this topic, and there are no established guidelines in County Code or other relevant guidance documents. Researchers at the University of California's Institute of Transportation Studies have attempted to gauge when a substantive traffic impact may occur on a relatively low volume residential street. Researchers have identified a number of factors that affect how small increases in traffic are perceived on lower-volume residential streets, including street width, the presence of or prohibition against on-street parking, street grade, existing average vehicle speeds, and safety records.

In the immediate project area, most residential streets are relatively flat and have little or no on-street parking. Speed limits are similar to or less than the 25 mph speed limit on Boulevard Way. Street widths vary: Warren Road is comparatively narrow, while Garden Court and Kinney Drive are only slightly smaller in width than Boulevard Way.

As **Table 4.13-9** shows, segments of Boulevard Way and Kinney Drive would experience 1 to 2 percent increases in average daily traffic (ADT) as a result of either Project Variant. These resultant ADT volumes are well within the carrying capacity of these streets and these Project Variant-related traffic increases would not be considered significant in nature.

Given the proximity and existing long-term operation of Sufism Reoriented's current facility at 1300 Boulevard Way, the operation of either Project Variant at 1364 Boulevard Way would be similar to what is now experienced in the neighborhood. As documented in **Appendix O** and discussed in this section, even during the highest attendance events, the system of carpools, pedestrians, and shuttles minimizes the effect of spillover traffic into the surrounding neighborhoods.

Discussion of Significant Impacts

e) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Impact 4.13-1: The proposed reliance on a TDM program would increase the number of pedestrians and bicyclists along the Boulevard Way frontage of the project site, thereby necessitating a sidewalk along this frontage.

As set forth in **Table 3-2**, the Project Variants differ in terms of public right-of-way improvements. Project Variant A does not include any sidewalks along the Boulevard Way frontage; Project Variant B does include such sidewalks.

Since a key element of the proposed TDM program is the signed pledge by more than 160 members of Sufism Reoriented to walk to weekly events at the proposed sanctuary building, pedestrian activity along the Boulevard Way frontage of the project site is likely to increase substantially. Project Variant A does not include a sidewalk extending along all of the Boulevard Way frontage, potentially forcing pedestrians into the side of the street and thereby contributing to safety concerns. Therefore, mitigation is needed for Project Variant A to ensure safe pedestrian circulation in the project area.

Mitigation Measure 4.13-1: If Project Variant A is ultimately selected and approved, the County Department of Conservation and Development and County Public Works Department shall verify that final plans incorporate a sidewalk on the

Boulevard Way frontage similar to that incorporated in Project Variant B. Plans shall show the sidewalk along all project frontage and extending to Warren Road. Sidewalk plans shall conform to prevailing County standards.

In addition, if Project Variant A is approved, prior to the approval of any building or grading permit, the County Department of Conservation and Development and County Public Works Department shall verify that final plans for the public right-of-way area show a north-south crosswalk at a location mutually acceptable to the aforementioned County departments and the applicant. The crosswalk shall conform to any pertinent state or County regulations regarding crosswalk location and safety. As appropriate, final plans for the crosswalk shall incorporate features to help reduce conflicts between vehicles and pedestrians. Such features may include but are not limited to signage advising motorists of the crosswalk, lighting at the crosswalk, and the use of contrasting color and/or reflective paint to improve nighttime visibility of the crosswalk area.

Significance after Mitigation: Less than significant. The inclusion of sidewalks along the project frontage extending to Warren Road and a new crosswalk will create a continuous dedicated area for pedestrians and will adequately mitigate any increased risk associated with increased pedestrian activity in the project area.

f) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

Impact 4.13-2: Project Variant A would not allow for adequate stopping sight distance, thus creating a potential safety concern.

Under both Project Variants, the proposed new driveway would be located approximately 175 feet east of Kinney Drive. Given this proximity, the traffic impact analysis (**Appendix O**), examined “stopping sight distance.” Stopping sight distance is the distance required by the driver of an oncoming vehicle traveling at an assumed speed to stop the vehicle after an object in the road becomes visible. According to Caltrans, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad (in this case, the proposed new driveway) and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either turn left or right without requiring through traffic to alter its speed.⁸

Existing site distances were thus examined both west and east of the proposed driveway. To the west of the proposed project driveway, sight distance would be 175 feet – limited by the apex of the curve on Boulevard Way. The current posted speed

⁸ Caltrans, Highway Design Manual, Chapter 400, Topic 405, Intersection Design Standards, July 1, 2008.

limit on this road is 25 mph, but for conservative purposes, sight distance was calculated based on slightly higher speeds. Assuming a design speed of 35 mph, the stopping sight distance would be 250 feet. That would be inadequate space for a vehicle traveling from the west on Boulevard Way to come to a complete stop to allow for another vehicle to exit the proposed driveway.

East of the proposed driveway (towards Walnut Creek), vehicle sight distance exceeds 700 feet. This is more than adequate sight distance for vehicles traveling from the east toward the proposed driveway.

Therefore, mitigation is required to ensure that adequate sight distance is provided to the west of the proposed driveway.

Mitigation Measure 4.13-2: If Project Variant A is ultimately selected and approved, the County Department of Conservation and Development and County Public Works Department shall verify that final plans reflect the inclusion of adequate sight distance to the west of the project driveway. This can be achieved by relocating the proposed perimeter wall from its current location to the same location as shown in the plan for Project Variant B (Figure 3-8) and keeping the area north of the wall free of potential visual obstructions (trees or other tall vegetation).

Significance after Mitigation: Less than significant. The inclusion of the above mitigation measure, would ensure vehicle and pedestrian safety through the project area, by providing a stopping sight distance of 250 feet, which is based on a design speed of 35 mph, 10 miles over the posted area speed limit of 25 mph.

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4.14 UTILITIES AND SERVICE SYSTEMS

This section describes the existing utility and service systems serving the project area including water supply, wastewater, and solid waste services.

Information recited regarding project area utilities and service systems was based on publicly available documents and personal communications with service providers. The most recent (2005) Urban Water Management Plan is incorporated by reference. For a discussion of issues and impacts related to stormwater infrastructure, please see **Section 4.8, Hydrology and Water Quality**.

For the purposes of this analysis, Project Variant A and Project Variant B were considered to have the same level of impacts related to utilities and service systems, as the water demand, wastewater generation, and solid waste generation under both Project Variants would be similar.

4.14.1 Existing Conditions

Water Supply

Water to the project site is provided by the East Bay Municipal Utility District (EBMUD). EBMUD supplies water for parts of Alameda and Contra Costa counties. EBMUD's primary source of water is the Mokelumne River. According to EBMUD, the project site is served by the Walnut Creek Water Treatment Plant (WCWTP) and the Leland Reservoir in Lafayette.

In November 2005, EBMUD adopted an Urban Water Management Plan (UWMP), a long-term planning document reporting on EBMUD's current and projected water usage, water supply programs, and recycling and conservation programs (based on Association of Bay Area Government projections). According to the EBMUD's adopted UWMP, the agency is projected to have sufficient water supplies for the increasing demand in their service area through the year 2030, under normal water year conditions.¹

Wastewater Collection and Treatment

Central Contra Costa Sanitary District (CCCSD) provides wastewater treatment services in the project area. CCCSD conveys wastewater from the point of discharge to the

¹ Under drought conditions, supplemental water sources would be needed to accommodate water demands.

CCCSD Treatment Plant, and discharges treated effluent into Suisun Bay in compliance with the San Francisco Bay Regional Water Quality Control Board requirements. The CCCSD treatment plant is currently operating under its total capacity of 55 million gallons per day (gpd) by 17.3 mgd.² Per CCCSD wastewater generation standards for estimation, the three homes and the parsonage on the project site generate approximately 900 gpd of wastewater.³

Solid Waste

The Central Contra Costa Solid Waste Authority (CCCSWA) provides solid waste and residential recycling services for areas within Contra Costa County. CCCSWA holds franchise agreements with Allied Waste, a division of Republic Services Inc. for the collection, transfer, and disposal of residential and commercial solid waste, and with Valley Waste Management for the collection and marketing of residential recycling, green waste and food scraps.

Solid waste collected by Allied Waste is transported to the Contra Costa Transfer and Recovery Facility, located at 951 Waterbird Way in Martinez. The waste is then transported to the Keller Canyon Landfill, located at 901 Bailey Road in Pittsburg. The Keller Canyon Landfill is a Class II facility, which has a maximum permitted capacity of approximately 75 million cubic yards (mcy) and a remaining capacity of approximately 63.4 mcy.⁴ The landfill covers 2,600 acres, of which 244 acres are permitted for disposal.⁵ Although the landfill has a maximum permitted throughput of 3,500 tons per day, the site currently handles approximately 2,500 tons of waste per day⁶, which accounts for approximately 71 percent of its maximum capacity.

² Personal communication with Tammy Fong, Engineering Assistant, Central Contra Costa County Sanitary District. July 31, 2009.

³ 225 gpd per single family household x 3 homes to be demolished = 675 gpd from existing homes plus 225 gpd from the parsonage.

⁴ <http://www.calrecycle.ca.gov/SWFacilities/Directory/07-AA-0032/Detail/>. Accessed July 6, 2010.

⁵ http://alliedwasteservicesofcontracostacounty.com/disposal_sites_kellercanyon.cfm. Accessed July 6, 2010.

⁶ http://alliedwasteservicesofcontracostacounty.com/disposal_sites_kellercanyon.cfm. Accessed July 6, 2010.

4.14.2 Regulatory Setting

California State Senate Bills 610 and 221

The purpose and legislative intent of Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) is to preclude projects from being approved without specific evaluations being performed and documented by the local water provider proving that water is available to serve the project. The laws took effect on January 1, 2002.

SB 610 (codified at Section 10910 – 10915 of the California Water Code) requires the preparation of a Water Supply Assessment (WSA) for large-scale development projects, typically defined as any project involving a water demand increase equivalent to that associated with 500 or more dwelling units. The WSA evaluates the water supply available for new development based on anticipated demand. For the broad range of projects that are subject to this law, the statutory WSA must be requested by the lead agency from the local water provider at the time the lead agency determines that an EIR is required for the project under CEQA.

SB 221 (codified at California Government Code Section 66473.7) requires verification from applicable public water systems that a sufficient long-term water supply is available to meet projected demand associated with a proposed subdivision comprising water demand equivalent to 500 or more dwelling units.

Model Water Efficient Landscape Ordinance - Assembly Bill 1881

This legislation required cities and counties to adopt by January 1, 2010 either the California Department of Water Resources updated Model Water Efficient Landscape Ordinance (MWELo) or a different ordinance that is at least as effective. Assembly Bill 1881 (AB 1881) includes provisions such as landscape maintenance practices, minimizing overspray and runoff, establishing landscape water budgets, and encouraging the use of recycled water. New developments that require a building or landscape permit, plan check, or design review and contain 2,500 square feet or more of landscaping area are subject to the MWELo. This includes publicly-owned land such as parks, schools, and city properties, private developments (retail, industrial, and commercial properties), and master-planned communities containing single-family and/or multi-family homes.

At this time, the County is enforcing the state's Model Water Efficiency Landscape Ordinance. County Code requires that landscape plans for new development to be reviewed for landscaping water efficiency measures. Consistency with AB 1881 would be determined by the Contra Costa County Department of Conservation and Development prior to the issuance of permits to construct.

Assembly Bill 939

Assembly Bill 939 (AB 939), the California Integrated Waste Management Act of 1989, mandated reductions in the amount of solid waste entering landfills, spurring most California jurisdictions to develop extensive recycling programs and other measures intended to divert waste from landfilling. The Bill mandated a minimum 50 percent diversion of material from landfills by 2000. Unincorporated Contra Costa County achieved a 54 percent waste diversion rate in 2006, the latest year for which the Department of Resources Recycling and Recovery (CalRecycle) has certified waste reporting data.⁷

Contra Costa County General Plan

The Public Facilities/Services Element of the General Plan identifies county-wide policies related to utility services:

Public Facilities/Services Element

- 7-1: New development shall be required to pay its fair share of the cost of all existing public facilities it utilizes, based on the demand for these facilities which can be attributed to new development.
- 7-2: New development, not existing residents, should be required to pay all costs of upgrading existing public facilities or constructing new facilities which are exclusively needed to serve new development.
- 7-4: The financial impacts of new development or public facilities should generally be determined during the project review process and may be based on the analysis contemplated under the Growth Management Element or otherwise. As part of the project approval, specific findings shall be adopted which relate to the demand for new public facilities and how the demand affects the service standards included in the growth management program.
- 7-21: At the project approval stage, the County shall require new development to demonstrate that adequate water quantity and quality can be provided. The County shall determine whether (1) capacity exists within the water system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

⁷<http://www.calrecycle.ca.gov/Profiles/Juris/JurProfile2.asp?RG=R&JURID=617&JUR=Contra+Costa%2FIronhouse%2FOakley+Regional+Agency>. Accessed August 20, 2010.

- 7-26: The need for water system improvements shall be reduced by encouraging new development to incorporate water conservation measures to decrease peak water use.
- 7-29: Sewer treatment facilities shall be required to operate in compliance with waste discharge requirements established by the Regional Water Quality Control Board. Development that would result in the violation of waste discharge requirements shall not be approved.
- 7-33: At the project approval stage, the County shall require new development to demonstrate that wastewater treatment capacity can be provided. The County shall determine whether (1) capacity exists within the wastewater treatment system if a development project is built within a set period of time, or (2) capacity will be provided by a funded program or other mechanism. This finding will be based in information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.
- 7-37: The need for sewer system improvements shall be reduced by requiring new development to incorporate water conservation measures which reduce flows into the sanitary sewer system.
- 7-88: Solid waste disposal capacity shall be considered in County and city land use planning and permitting activities, along with other utility requirements, such as water and sewer service.
- 7-92: Waste diversion from landfills due to resource recovery activities shall be subject to goals included in the County Integrated Waste Management Plan. Public agencies and the private sector should strive to meet these aggressive goals.

Project Consistency

Water: A WSA is not required because the water demand associated with the proposal is not equivalent to 500 or more dwelling units. EBMUD has indicated that it anticipates having sufficient water supply to serve the project site, consistent with policy 7-21. Drought tolerant landscaping would be planted on the project site, which would conserve water consistent with policy 7-26.

Solid Waste: Unincorporated Contra Costa County is meeting the requirements of AB 939, which is consistent with policies 7-88 and 7-92 related to solid waste.

Wastewater: If either Project Variant requires upgrades to existing sanitary sewer lines, it would pay its fair share cost to improvements consistent with policies 7-1, 7-2, 7-4. However, as described below, neither Project Variant requires any off-site sewer line improvements at this time. Both Project Variants are consistent with policy 7-37 since

sewer system improvements are not required. The CCCSD has determined that adequate wastewater treatment capacity exists for either Project Variant. Therefore, both Project Variants are consistent with policy 7-33. Neither Project Variant includes development that would result in the violation of waste discharge requirements, consistent with policy 7-29.

4.14.3 Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines identifies criteria to be used in evaluating potential impacts related to utilities and service systems. As stated in Appendix G, a project would have a significant impact upon utilities and service systems if it would:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- b) Not be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs;
- c) Not comply with federal, state, and local statutes and regulations related to solid waste;
- d) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- f) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or be in need of new or expanded entitlements; or
- g) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

See **Section 4.8, Hydrology and Water Quality**, for a discussion of the effects on stormwater runoff and existing stormwater drainage facilities (related to question (g) listed above).

Discussion of No Impacts

Analysis of the details and site characteristics in the context of the seven significance criteria stated above shows that no impacts would result for three of the criteria.

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Wastewater generated by the proposed sanctuary would originate from religious facility sources. No industrial wastewater would be generated. Sewer lines would be relocated onsite to accommodate for the underground portion of the religious facility and no changes to the wastewater treatment plant would be required to treat the religious facility flows. Consequently, no impacts related to the Regional Water Quality Control Board's wastewater treatment requirements would be expected.

b) Would the project not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

c) Would the project not comply with federal, state, and local statutes and regulations related to solid waste?

The analysis evaluates waste from both construction and operation of both Project Variants.

Construction waste

Construction waste would be hauled to the Acme Landfill in Martinez.

Either Project Variant would be required to comply with County Ordinance 2004-16, which requires owners of all construction or demolition projects that are 5,000 square feet in size or greater to demonstrate that at least 50 percent of the construction and demolition debris generated on the jobsite are reused, recycled, or otherwise diverted.

In order to comply with Ordinance 2004-16, the applicant would be required as a condition of approval to prepare and submit a Debris Recovery Plan to the County's Department of Conservation and Development prior to the issuance of a building or demolition permit. The plan will address major materials generated by a construction project of this size, including brush and other vegetative material, dimensional lumber, metal scraps, cardboard, packaging, and plastic wrap, and shall address opportunities to recycle such materials or divert them away from the Landfill. Prior to final inspection, the applicant shall submit a Debris Recovery Report that demonstrates that at least 50 percent of jobsite debris was diverted from disposal by providing receipts or gate-tags from facilities or service providers used for recycling, reuse and disposal of jobsite debris. Both Project Variants would be required to comply with all applicable regulations related to solid waste and this impact would be less than significant.

The Acme Landfill is currently estimated to utilize about 35 percent of its permitted capacity.⁸ The addition of construction debris from the project site would not result in a net increase of solid waste that would exceed the capacity of the Acme Landfill. Furthermore, construction is not expected to result in the generation of unique types of solid waste that would conflict with existing regulations applicable to solid waste disposal. No mitigation is required.

Operation waste

CalRecycle does not have a standard generation rate for religious facilities, nor has CalRecycle published any waste disposal or generation rates that are comparable to proposed religious facility.

CalRecycle publishes both residential and business disposal rates. The former are based on rates observed in various regions of the state. The latter are based on studies completed by CalRecycle and are sorted by industry type. In the absence of a rate of disposal for religious uses, a reasonably comparable business rate was identified. Accordingly, a disposal rate for service/educational uses is used here, insofar as it is the best-available data to use in this analysis.

CalRecycle assumes a disposal rate of 0.8 tons of waste per year per employee. For the sake of this analysis, a total of 25 employees is assumed, corresponding with the estimated number of people expected to conduct various daily administrative and operational activities at the project site (see **Table 3-1 in Chapter 3, Project Description**). Under this assumption, either Project Variant would generate about 20 tons of waste per year (or 0.05 tons per day – 109 pounds per day).

The receiving landfill for operational waste, Keller Canyon, is at 15 percent of its permitted capacity and is permitted to remain in operation through December 31, 2030. The landfill is permitted to accept 3,500 tons of waste per day. The incremental addition of 0.05 tons per day is well within the capacity of this facility.

Discussion of Less-than-Significant Impacts

Analysis of the details and site characteristics in the context of the seven significance criteria stated above shows that less-than-significant impacts would result for two of the criteria.

⁸ <http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=7&FACID=07-AA-0002>. Accessed March 10, 2011.

d) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

The proposed sanctuary building would increase wastewater generation above present levels in the project area. Using standard generation rates, CCCSD estimates that the sanctuary building would generate approximately 1,000 gpd of wastewater. Demolition of the existing residences and construction of the sanctuary building would result in a net increase of 325 gpd of wastewater generated on the project site. The proposed sanctuary building would connect to a 6-inch sewer pipe in Boulevard Way that is currently at 14.1 percent of its capacity. The existing sewer pipeline serving the project site therefore has adequate capacity to support the additional wastewater flow generated by the proposed sanctuary building.

The proposed sanctuary building would result in a less than 0.01 percent increase of the existing capacity of the wastewater treatment plant. According to CCCSD, there is sufficient capacity at the treatment plant to accommodate wastewater flows. Therefore, the proposed sanctuary building (and thus neither Project Variant) requires the construction or expansion of existing wastewater treatment facilities and impacts to wastewater treatment facilities are considered less than significant. No mitigation is required.

Discussion of Significant Impacts

f) Would sufficient water supplies be available to serve the project from existing entitlements and resources, or be in need of new or expanded entitlements?

Impact 4.14-1: The proposed sanctuary building would generate an increase in demand for water supply over existing uses on the project site. (Less than Significant with Mitigation Incorporated)

The projections for water supply and demand within EBMUD's UWMP are based on uniformly applied growth projections derived from City and County general plans. Since the proposed sanctuary building would be consistent with the type and intensity of development allowed on this site by the County General Plan (with a land use permit), the proposal would be consistent with EBMUD's UWMP. Thus, the proposed sanctuary building would result in no additional water demand nor require additional water supply capacity beyond what has already been projected and planned for as part of the UWMP.

Planned water infrastructure as part of the UWMP would be able to accommodate the water demand of the proposed sanctuary building. Therefore, the proposed sanctuary building and thus neither Project Variant would require any new or expanded water facilities.

Per its 2005 UWMP, EBMUD anticipates meeting the projected water demand for its service area through 2030 for normal water years, but notes that EBMUD's current water supply is insufficient to meet customer needs during multiple-year droughts.⁹ In the event of a single drought year, EBMUD would follow the actions outlined in EBMUD's "Urban Water Shortage Contingency Plan." In the event of multiple drought years, EBMUD will impose a Drought Management Program which will ration the amount of water used. Customer water reduction goals during drought years are set based on customer categories—commercial and institutional sectors are expected to reduce water demand by 20 percent during multiple drought years.¹⁰ **Mitigation Measure 4.14-1** would ensure that impacts related to water supplies would be reduced to a less-than-significant level.

Mitigation Measure 4.14-1: In the event of multiple drought years, the applicant shall comply with EBMUD's Drought Management Program and reduce water usage by 20 percent. In the event of critical shortages (shortages of 25 percent or more), the applicant shall comply with reduction goals based on customer categories set by EBMUD.

Significance after Mitigation: Less than significant. Implementation of **Mitigation Measure 4.14-1** would mitigate impacts related to water supplies during drought years to a less-than-significant level.

⁹ East Bay Municipal Utilities District (EBMUD). 2005. Urban Water Management Plan, pp 4-1.

¹⁰ East Bay Municipal Utilities District (EBMUD). 2005. Urban Water Management Plan, Table 3-3.

5.0 ALTERNATIVES

5.1 BACKGROUND

In accordance with CEQA Guidelines Section 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the project – in this case, to both of the Project Variants. The primary purpose of this section is to provide decision makers and the general public with a range of reasonable project alternatives that could feasibly attain most of the basic project objectives, while avoiding or substantially lessening any significant adverse environmental effects associated with the Project Variants. Important considerations for these alternatives analyses are noted below.

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
 - Failure to meet most of the basic project objectives;
 - Infeasibility; or
 - Inability to avoid significant environmental effects.

The CEQA Guidelines require that every EIR consider a “No Project Alternative.” In most EIRs, the No Project Alternative is assumed as one in which no development would occur on the project site. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving the project.

Revisions to CEQA in 1998 added another requirement to the No Project Alternative discussion, which requires an analysis of what could reasonably be expected to occur in the foreseeable future based on consistency with current general plan and zoning designations, given available infrastructure. For this EIR, this means the Contra Costa County General Plan, last updated in 2005 (the “General Plan”) and Title 8 of the Contra Costa County Code (the “Zoning Code”).

The CEQA Guidelines require that an EIR designate an “environmentally-superior” alternative. If the alternative with the least environmental impact is the No Project Alternative, the EIR must also designate which of the other alternatives causes the least environmental damage. In addition, Section 15126.6(c) of the CEQA Guidelines states

that an EIR should include a discussion of alternatives that were considered for analysis but subsequently rejected, due to a lack of feasibility, failure to meet most of the basic objectives, or failure to lessen or avoid any of the significant environmental effects of the project. **Sections 5.3** and **5.4** below provide this discussion.

5.2 SCREENING OF ALTERNATIVES

Prior to developing the alternatives, the physical and environmental constraints related to the site and nearby sites were considered. Regulatory constraints were also considered. Additionally, the applicant's stated project objectives were also considered.

These objectives are:

- Create a new sanctuary that is of a size that can feasibly accommodate the activities of Sufism Reoriented in a manner that allows all activities to be conducted at one facility, without requiring some activities to be terminated or constrained to provide space for other activities
- Create a new sanctuary at a location that:
 - is within walking distance of at least 167 members of Sufism Reoriented who live near the existing facility and have pledged to walk to the facility
 - is in close proximity to all members, who need frequent and easy access to the sanctuary to conduct their religious activities
 - assures the continued viability of the Meher Schools (which were founded by Sufism Reoriented, represent the church's primary service project for the community, and depend upon the volunteer efforts of members of Sufism Reoriented), by locating the new sanctuary close enough to the schools to allow volunteers to travel easily between the schools, the new sanctuary and their homes
 - is large enough to allow the Spiritual Director's home to be on the same grounds as the church; and
 - can feasibly be accessed via the use of bicycles and other alternative transportation means.
- Develop a design for the new sanctuary so that:
 - the site that reflects the spiritual values of Sufism Reoriented, placing a strong emphasis on beauty, spaciousness and a sense of openness and light
 - the building creates a sacred space for worship and embodies the central symbols of Sufism Reoriented's faith, with design elements having spiritual significance

- the buildings and landscaped grounds promote a sense of quiet and contemplation as an expression of faith
- Create a new facility and modern building that is compliant with current codes and that does not burden future members with costs that are excessive or not routinely imposed upon development in the area.
- Allow development that implements the General Plan land use designation for the site, in a manner that also recognizes the requirements of the Religious Land Use and Institutionalized Persons Act.

Based on the impacts identified in this EIR and the objectives listed above, the following alternatives were considered:

- No Project, No Build
- No Project, Development Pursuant to Existing General Plan and Zoning
- Reduced Project Alternative
- Construction on Existing Sufism Reoriented site at 1300 Boulevard Way
- Modified Right-of-Way Improvements

Pursuant to CEQA, alternatives shall be limited to those that would avoid or substantially lessen any of the significant effects of a project. The EIR needs to examine only the alternatives that the Lead Agency determines could feasibly attain most of the basic objectives of a project.

5.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

5.3.1 Alternative 1: No Project – No Build

With the No Project-No Build Alternative, no new religious facility would be constructed on the project site; no further development of any type would occur within the project area. The existing residential units on site would be rehabilitated and rented or sold for occupancy.

5.3.2 Alternative 2: No Project – Existing General Plan and Zoning Alternative¹

The No Project-Existing General Plan Alternative assumes development of a portion of the project site, shown in **Figure 5-1**. For the purposes of this analysis, a total of 15 new residential units are assumed, including 5 single-family homes and 10 “duet” units. Further explanation is provided below regarding how this density of development was derived.

The General Plan designation for the site (SH) allows for residential densities between 5.0 and 7.2 single-family units per net acre. Per the General Plan, lot sizes in the SH designation can range up to 8,729 square feet in area. The General Plan assumes a population density of 12.5 to 22 people per acre.

The existing Zoning for the site is R-10 Single-Family Residential District (R-10). In this district, the County Code allows detached single family dwellings, second dwelling units (providing such units comply with Chapter 82-24 of the County Code), certain congregate care facilities, public parks, and certain agricultural uses.

Section 84-8.602 of the County Code establishes a minimum lot size of 10,000 square feet for single family dwellings and other permitted structures in the R-10 district. Taking existing General Plan and Zoning regulations into a consideration, the following physical characteristics of the site were considered in evaluating potential future development.

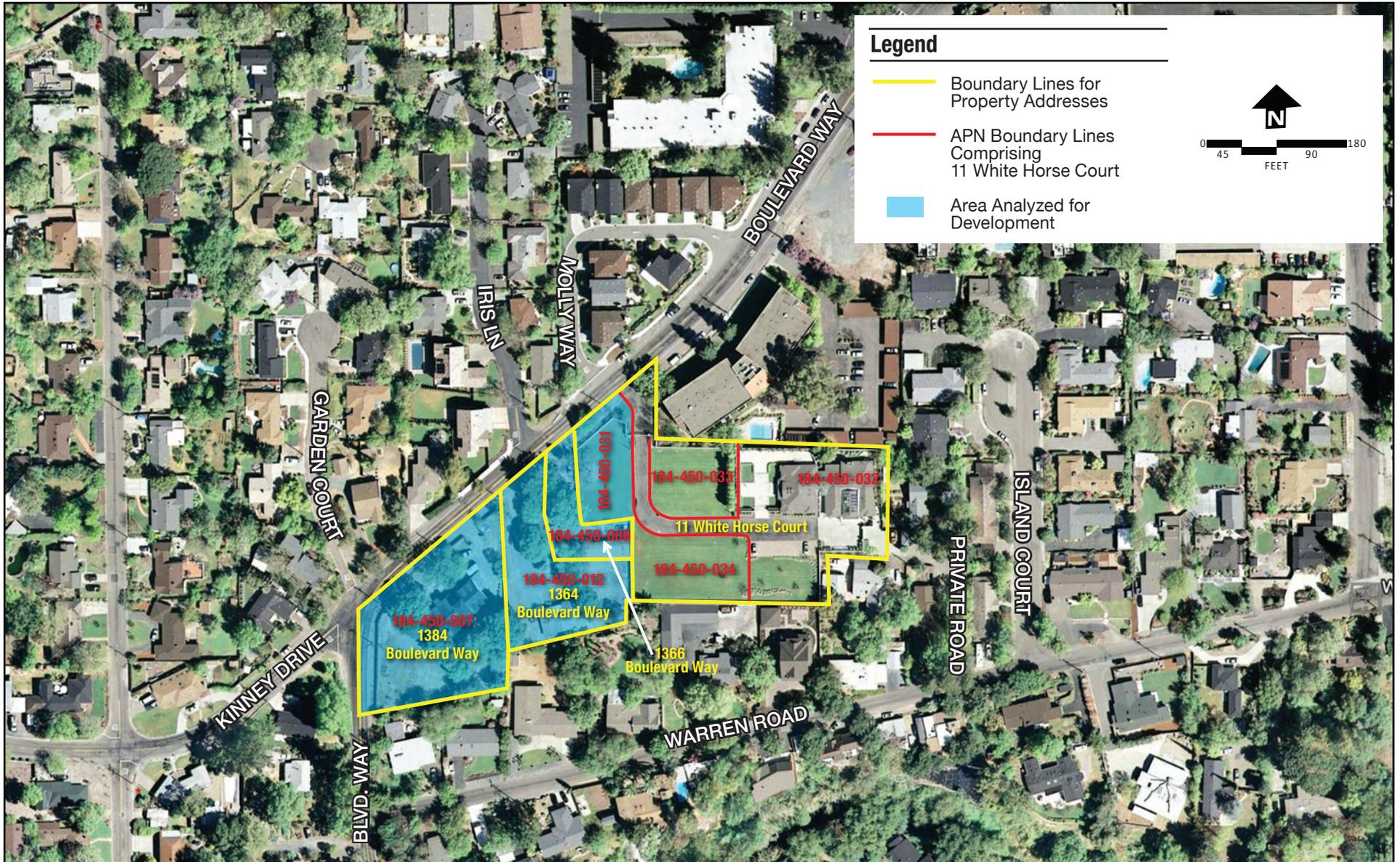
Property size: The project site as a whole comprises about 3.3 acres. Of this total, about 2 acres are associated with the three single family residences fronting Boulevard Way; the remaining 1.3 acres is associated with the parsonage.

Existing Parcelization of the Parsonage property: The Parsonage property is comprised of 4 separate parcels, all under the same ownership (Sufism Reoriented). Based on the configuration of the parcels, this alternative analysis conservatively assumes that only parcel 184-450-031 would be developed.

Combined, the total acreage of the sites currently occupied by the three single-family residences plus this single parcel associated with the Parsonage property would be about 2.2 acres (95,900 square feet).

¹ Analysis of development according to the existing General Plan designations is required by CEQA Guidelines section 15126.6 (e) (2):

The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time of environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” (CEQA Guidelines section 15126.6, [e]).



No Project - Existing General Plan and Zoning Alternative

Figure

Topography: Overall, the project site has a very gentle slope, less than 2.5 percent. Site topography thus poses little constraint to the development of the site.

Sensitive Resources: As documented in other sections of this EIR, the site does not contain sensitive biological resources or habitat areas, nor any wetlands, riparian areas, or other water courses.

Setting/Surrounding Uses: The project site is surrounded by a mixture of high, medium, and lower density uses

- High Density: Le Boulevard apartments have a density of about 30 units per acre. The County General Plan Designation for the site is MH (Multiple Family Residential, High)
- Medium Density: Across Boulevard Way from the project site, the homes on Molly Way are at a density of about 12 units per acre. The General Plan designation for this area (MM) allows densities of up to 21 units per acre.
- Low Density: Single family housing to the south along Warren Road is built at densities ranging from 3-5 units per acre; the General Plan designation for this area (SM) allows up to 5 units per acre.

Based on these factors, it would be reasonable to assume that approximately 2.0 acres of the site would be available for development consistent with current General Plan and Zoning regulations. For the purposes of this analysis, it is assumed that the 2.0 acres of developable property (the lots associated with the three single family residences plus a portion of the Parsonage property) could yield 9 to 10 single-family units by right. Notably, the “SH” designation of the General Plan allows for duet/duplex units as well as single family homes, with an anticipated population density of 12.5 to 22 people per acre.

Assuming half of the land area would be redeveloped with duplexes and the other half with small-lot single family homes, the total number of new dwelling units would range between 9 and 15. With an assumed household size of 2.5 persons, the total population in this area would range between 22.5 and 37.5 on the two acre site. The population density per acre, then, would range between 11.25 and 18.75, which is within the population density assumed for “SH” districts within the County General Plan.

For the purposes of this alternatives analysis, a total of 15 new residential units are assumed, including 5 single-family homes and 10 “duet” units.

5.3.3 Alternative 3: Modified Right-of-Way Alternative

The Modified Right-of-Way Alternative is identical to Project Variant A with the exception of the design of the frontage along Boulevard Way.

As discussed in **Section 3.4** of the EIR (Project Description), Project Variant B was developed to reflect recommendations of the County Public Works Department. Project Variant B includes several modifications to the public right-of-way area adjacent to the project site.

As an alternative to Project Variant B, the applicant commissioned its own study of potential right-of-way modifications. This study, conducted by Design, Community, and Environment (DC&E) recommended modifications to the Boulevard Way/Garden Court/Kinney Drive intersection. For the purposes of this discussion, this document refers to this plan as the “Modified Right-of-Way” plan.

Figure 5-2 shows the Modified Right-of-Way plan, including proposed modifications to the location of stop signs, as detailed below.

Boulevard Way

Northbound: Cars traveling northbound on Boulevard Way would reach a stop sign at the 4-way intersection.

Kinney Drive

Eastbound: Existing stop sign would be removed. Special right-turn lane would be created for southbound turns onto Boulevard Way.

The Modified Right-of-Way plan includes crosswalks over all four legs of the Boulevard Way/Garden Court/Kinney Drive intersection; a fifth crosswalk is proposed across Boulevard Way at Molly Way.

The County reviewed the Modified Right-of-Way plan, and suggested the removal of the crosswalk at the eastern leg of the Boulevard Way/Garden Court intersection.

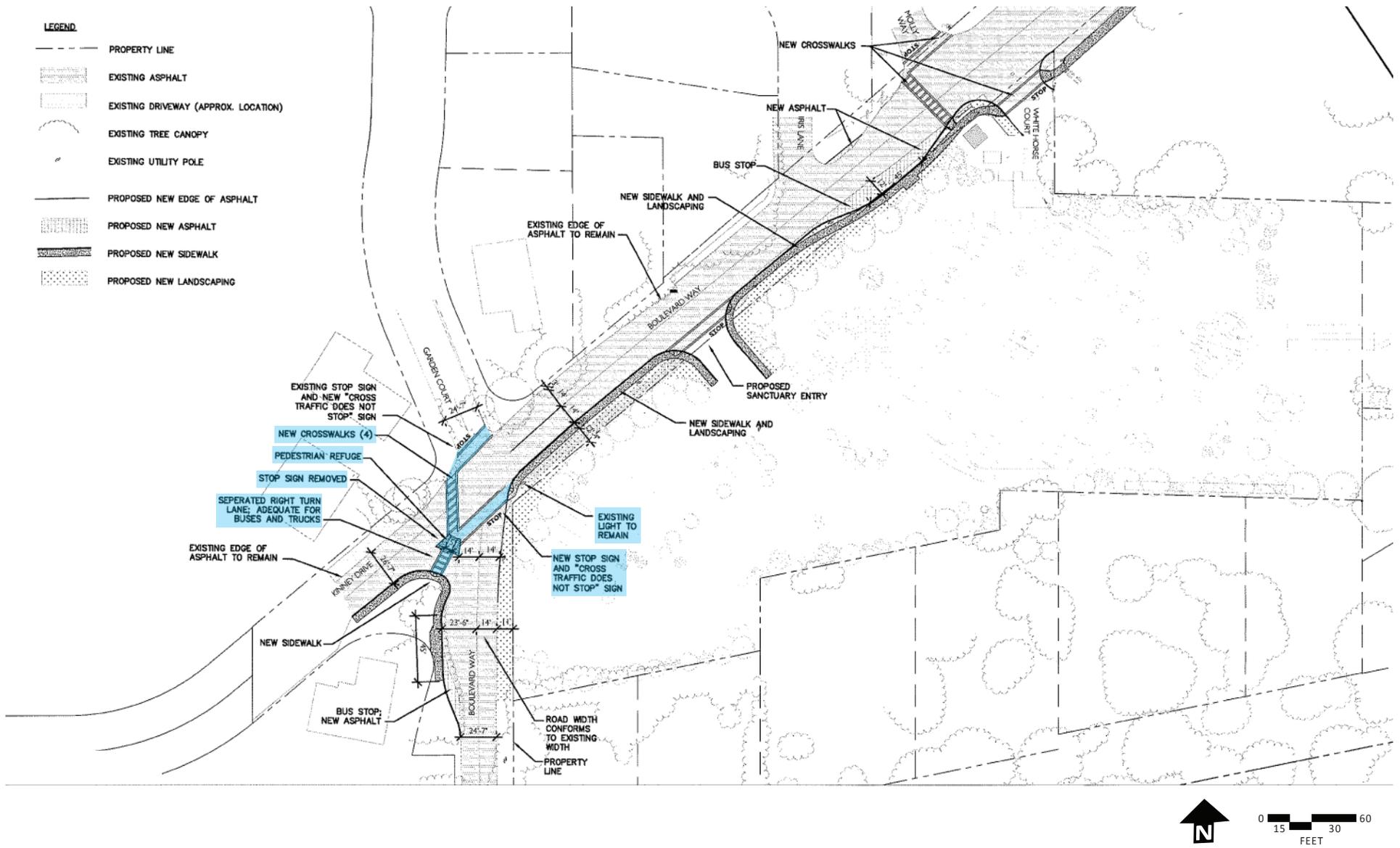
The Modified Right-of-Way plan makes no substantial change to on-site improvements. Accordingly, this Alternative achieves all of the project objectives in a manner similar to the project as proposed.

5.4 ALTERNATIVES REJECTED FOR FURTHER ANALYSIS

5.4.1 Reduced Development Alternative/Alternate Site

The Reduced Development Alternative would reduce the size of the proposed sanctuary to a point where significant unavoidable impacts would be avoided. As discussed in this Draft EIR, neither Project Variant would result in any significant and unavoidable impacts.

New Sanctuary for Sufism Reoriented EIR



Modified Right-of-Way Plan

Figure

Source: Design, Community & Environment, 2010.

Both Project Variants would result in potentially significant impacts related to construction period air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, and traffic and circulation. All of these impacts except for construction period air quality are independent of the size of the facility and therefore a reduced project size would not avoid or lessen their effect. The potentially significant impacts are addressed through standard mitigation for protection of nesting birds, provision of best practices for storm water control, provision of pedestrian safety measures, modifications to proposed construction methods, and standard construction methodologies.

Construction period air quality impacts, as discussed in depth in **Section 4.2, Air Quality**, are largely related to exhaust associated with the proposed off-hauling of excavated soils to an acceptable area landfill (the Acme Landfill in Martinez, a 24 mile round trip from the project site). With mitigation included in **Section 4.2**, all impacts related to air pollutant emissions related to all phases of project construction can be reduced to a less-than-significant level.

Key project objectives could not be satisfied if the size of the sanctuary building were reduced to a level where impacts would consistently be below those of the Project Variants. These objectives— developing a centralized facility for all of Sufism Reoriented’s activities; and developing that facility in proximity to where the vast majority of member reside and also in proximity to the Meher Schools – could not be achieved with a smaller design. Moreover, developing the sanctuary building outside the Saranap neighborhood would limit the ability to capitalize on the proximity of the project site to the bulk of the membership. The proposed transportation demand management (TDM) plan would likely be less effective in a location outside the Saranap neighborhood. As such, a project located outside the neighborhood would be likely to result in a larger, permanent increase in automobile emissions related to a larger number of vehicles traveling to such a site. Therefore, neither a smaller alternative nor an alternative site is considered feasible.

5.4.2 Redevelopment at 1300 Boulevard Way Alternative

The Redevelopment at 1300 Boulevard Way Alternative would require construction of all proposed components at the existing Sufism Reoriented site at 1300 Boulevard Way.

This alternative was rejected insofar as the site is too small to permit construction of facilities of a size sufficient to accommodate all of Sufism Reoriented’s activities. The existing site measures 0.6 acres or about 27,500 square feet. Both Project Variants measure about 66,000 square feet, meaning that a building of this size on that site would by necessity be several stories tall, particularly if structured parking were included, even assuming one story of the building were below grade.

Expanding the existing facility by acquiring parcels near 1300 Boulevard Way has been explored in the past. However, condominium units to the west and south of 1300 Boulevard Way are fully occupied and owned by members of Sufism Reoriented. If those properties were purchased to expand the existing facility, those members would be displaced, defeating the purpose of building a larger facility close to all members, and creating additional impacts related to population and housing. According to the applicant, previous efforts to purchase 1280 Boulevard Way failed due to the unavailability of suitable exchange property.

5.4.3 Campus Alternative

Also considered was a “campus” alternative. This would be comprised of redevelopment at 1300 Boulevard Way as well as at other sites owned by Sufism Reoriented in the vicinity, effectively distributing activities between several buildings. This idea was considered but rejected since it would not meet the primary project objective to consolidate operations at a single facility.

5.5 ANALYSIS OF SELECTED ALTERNATIVES

The discussions below address the comparative impacts of the Project Variants to the aforementioned alternatives.

In limited environmental topic areas, Project Variant B has distinct comparative impacts. These topic areas are aesthetics, hydrology, and transportation. Where substantial differences exist, the discussions below provide an appropriate comparison.

5.5.1 No Project – No Build Alternative

As described above, the No Project-No Build Alternative would not allow further development of any type to occur on the site. The existing three homes would be rehabilitated and would be occupied as single family dwellings.

Aesthetics

Under the No Project-No Build Alternative, there would be neither a temporary nor any permanent change to current views, current visual character, current daytime glare, and current nighttime lighting. With respect to aesthetics, this Alternative is therefore considered environmentally superior to either Project Variant.

Air Quality

No new development would occur with the No Project–No Build Alternative. As a result, none of the short-term construction-related emissions resulting from the anticipated

development would occur under this Alternative. Fewer long-term air-quality impacts would occur with this Alternative, although it is assumed that the three residences on Boulevard Way and the parsonage would continue to operate as-is, with some level of emissions related to transportation and energy use. Mitigation measures are identified in this EIR that would reduce the potential air quality impacts to a less-than-significant level. The No Project-No Build Alternative would eliminate the need for implementation of mitigation to offset such impacts. In this regard, the No Project-No Build Alternative is considered environmentally superior to both Project Variants.

Biological Resources

The No Project-No Build Alternative would have no impact to biological resources as no new development would occur. Mitigation measures are identified in this EIR that would reduce potential impacts to nesting species any roosting bats that might inhabit the vacant buildings and trees. The No Project-No Build Alternative would eliminate the need for implementation of mitigation measures to offset impacts to biological resources and would not contribute to cumulative impacts to biological resources. The No Project-No Build Alternative is therefore considered environmentally superior to both Project Variants with respect to biological resources.

Cultural Resources

There are no known cultural resources on the project site. The potential degradation or loss of unknown historic, archaeological, and paleontological resources would not occur with this Alternative as no ground disturbance would occur. The No Project-No Build Alternative is therefore considered environmentally superior to both Project Variants since it would not result in any adverse effect to any existing (unknown) cultural resources or those that might be uncovered during construction.

Geology, Soils, and Mineral Resources

No development would occur under the No Project–No Build Alternative. Therefore, none of the geologic/soils impacts associated with construction and operation would occur. Mitigation measures are identified in this EIR that would reduce potential geology and soils impacts to a less-than-significant level. The No Project-No Build Alternative would eliminate the need for implementation of such mitigation to offset these impacts. Therefore, the No Project-No Build Alternative is considered to be environmentally superior to both Project Variants.

Hazards and Hazardous Materials

Under the No Project–No Build Alternative, the existing single family homes on the site would not be demolished and would be occupied. This EIR includes mitigation measures which would reduce the impacts from the release of dust and asbestos due to

demolition to a less-than-significant level. This Alternative would eliminate the need for this mitigation measure and would, therefore, be considered environmentally superior to both Project Variants.

Hydrology and Water Quality

Implementation of the No Project—No Build Alternative would result in no alteration to the current drainage patterns on the site. Existing rates of offsite flow and contribution to flooding in downstream areas would continue. Some of these current flows contribute to existing “overflow” problems at some existing drainage facilities. The No Project—No Build Alternative is considered environmentally inferior to both Project Variants insofar as both Project Variants would improve the drainage and retention of storm water during rain events, such that the rate of offsite flow and contribution to flooding in areas downstream of the site would be reduced.

Land Use and Planning

The No Project-No Build Alternative would result in a continuation of the existing uses on site. This Alternative is considered similar in effect to both Project Variants as both uses are consistent with existing General Plan and zoning designations.

Noise and Vibration

Short-Term Construction Noise Impacts

With the No Project-No Build Alternative, there would be no short-term construction noise impacts, because no construction would occur within the project area. Mitigation is provided in this EIR that reduces all such impacts to a less-than-significant level. The No Project-No Build Alternative would eliminate the need for implementation of such mitigation to offset these impacts. Therefore this Alternative is considered superior to both Project Variants in terms of short-term construction noise.

Long-Term Noise Impacts

The No Project-No Build Alternative would result in a continuation of existing uses on the project site. The continuation of existing uses is considered similar to both Project Variants, since both uses would result in long-term operational noise levels that would be within the thresholds set forth in the County General Plan.

Population and Housing

Under the No Project-No Build Alternative, the existing residential uses on the site would be utilized as housing; the County's housing stock would not be reduced by three units. However, this reduction was deemed less-than-significant, and no mitigation was required to address any environmental effect. Therefore, both Project Variants and the No Project-No Build Alternative are considered environmentally similar.

Public Services

Under the No Project-No Build Alternative, the existing service population would not be altered and so would not alter existing demand for any public services. Neither Project Variant would result in environmental effects relative to Public Services. Therefore, the No Project-No Build Alternative is considered environmentally similar to both Project Variants.

Traffic and Circulation

The No Project-No Build Alternative would result in the continuation of existing uses on the site, including three residential uses fronting Boulevard Way. Residential uses have a higher peak hour demand on local roadways than the traffic patterns identified for the proposed sanctuary building. However, the level of service on all area roadways is acceptable under current conditions and would remain so under either Project Variant. Therefore, the No Project –No Build Alternative is considered environmentally similar to both Project Variants.

Utilities and Service Systems

The No Project-No Build Alternative would result in the continuation of existing uses on the project site. There would be no need to alter existing utilities service relative to what is currently provided on site. Both Project Variants would result in less-than-significant impacts (following mitigation). Therefore, the No Project-No Build Alternative is considered environmentally superior to both Project Variants.

Agricultural Resources, Mineral Resources, and Recreation

The project site does not contain any agricultural or forest resources or mineral resources and neither Project Variant would have an impact on recreation. The No Project-No Build Alternative is therefore considered to environmentally similar to both Project Variants with respect to agricultural resources, mineral resources, and recreation.

5.5.2 No Project-Existing General Plan

Under the No Project-Existing General Plan Alternative, the site would be developed with up to 15 residential units. Because this Alternative would utilize the entire buildable area of the site, several site-specific impacts of this Alternative would be similar to both Project Variants. With regard to offsite impacts, the main distinction is that residential uses have a different traffic pattern, and contribute more peak-period trips to area roadways (as further discussed below). This Alternative would therefore have a greater level of impact in terms of traffic.

Aesthetics

Overall aesthetic impacts of this Alternative would be generally similar to those of both Project Variants, as the pattern of land use under this Alternative would include development up to the allowed height limit of 35 feet, massing that would maximize the allowable footprint on site within the context of setbacks, appropriate buffers near the adjacent uses that front Warren Road, and lighting suited to residential needs.

Based on these assumptions, the No Project-Existing General Plan Alternative is considered similar to both Project Variants.

Air Quality

Under the No Project-Existing General Plan Alternative, the development of standard single and multi-family residential development and corresponding increase in the number of residents on site would increase the number of vehicle trips generated relative to existing conditions.

Construction period impacts are anticipated to be lower for this Alternative, insofar as substantial excavation is not assumed. Mitigation measures are identified in this EIR that would reduce air quality impacts to a less-than-significant level. The No Project, Existing General Plan Alternative would eliminate the need for implementation of mitigation to offset such impacts.

The long-term air quality impacts anticipated with this Alternative would be incrementally greater than those anticipated with either Project Variant, based on the increase in vehicle trips associated with the use of the site for residential development.

Overall, impacts related to this Alternative are considered environmentally superior to both Project Variants for short-term air quality, and environmentally inferior to both Project Variants for long-term air quality.

Biological Resources

The area slated for development under the No Project-Existing General Plan Alternative is considered to be similar to both Project Variants. A similar level of site clearance

(including some tree removal) would be necessary for the creation of new residential development at allowable densities. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to biological resources.

Cultural Resources

Development under the No Project-Existing General Plan Alternative would result in a similar expanse of ground disturbance (albeit less excavation) as either Project Variant. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to cultural resources.

Geology and Soils

New residential development would occur under the No Project-Existing General Plan Alternative. Although such new development would be unlikely to entail the excavation associated with either Project Variant, several geologic/soils impacts would nonetheless be likely to occur, similar to other new development in the area. Standard mitigation measures, many similar to those identified in this EIR that could reduce the Alternative's potential geology and soils impacts to a less-than-significant level. Therefore, the No Project-Existing General Plan Alternative is considered to be environmentally similar to both Project Variants.

Hazards and Hazardous Materials

No contaminated soils or groundwater are known to be present at the project site. Development under the No Project-Existing General Plan Alternative would result in a similar expanse of ground disturbance (albeit less excavation) as either Project Variant. Therefore, both Project Variants and the Alternative have a relatively similar potential to encounter unknown hazardous materials. Similarly, neither Project Variant nor the Alternative would be expected to utilize substantial quantities of potentially hazardous materials, such as landscaping chemicals, cleaning agents, or other such materials. Accordingly, this Alternative is considered environmentally similar to both Project Variants.

Hydrology and Water Quality

Development under this alternative would involve construction of 15 dwelling units. Assuming each unit was approximately 2,000 square feet in area, the units themselves would result in about 30,000 square feet of impervious area. With the addition of driveways and roadways, the total impervious area under this Alternative would likely exceed that of either Project Variant, given that both Project Variants incorporate pervious concrete and pervious pavers, materials not required or typically used in residential development. Stormwater runoff under the Alternative would thus be

similar to or potentially greater than that associated with the project. Therefore, this Alternative is considered environmentally inferior to both Project Variants in terms of hydrology and water quality considerations.

Land Use and Planning

The No Project-Existing General Plan Alternative would result in development allowed by the General Plan. This Alternative is considered similar in effect to both Project Variants as all uses are consistent with existing allowable uses under current General Plan and zoning designations. This Alternative is therefore considered to be similar to both Project Variants.

Noise and Vibration

Short-Term Construction Noise Impacts

Although both Project Variants and this Alternative would result in construction noise impacts, impacts associated with either Project Variant are assumed to be greater, insofar as the Alternative is expected to entail less excavation and thus an overall shorter construction period. Therefore, this Alternative is considered environmentally superior to both Project Variants with respect to short-term construction noise.

Long-Term Noise Impacts

The development of additional residential uses on the project site would result in noise associated with traffic and stationary uses. Both such uses and both Project Variants would each result in noise levels generally consistent with allowable levels as set forth in the County General Plan.

Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to long-term noise.

Population and Housing

The No Project-Existing General Plan Alternative would add 15 residential units, rather than reduce residential units in the area by a total of three. However, the removal of housing associated with both Project Variants would not result in any substantial displacement or any need for the construction of replacement housing. Accordingly the No Project-Existing General Plan Alternative is considered environmentally similar to both Project Variants.

Public Services

The No Project-Existing General Plan Alternative would result in increased demand for all public services. However, it is assumed that the demand can be met by existing infrastructure and capacities of most service providers. Based on communication with

the Contra Costa County Fire Protection District, build-out of this alternative would not impact fire and emergency services in the area.² The Contra Costa County Sheriff's Department has determined that the 15 residential units would result in an increase to police service demands and would somewhat diminish service levels in the area, but no new physical facilities would be required.³ Therefore, this Alternative is considered similar to both Project Variants.

Traffic and Circulation

The No Project-Existing General Plan Alternative would result in residential development that would have a different transportation pattern than the proposed religious use. Residential units typically generate substantial outbound morning peak-period traffic as people living in the units would leave for work and produce comparable inbound traffic in the late afternoon/early evening hours. As shown in **Section 4.13**, both Project Variants are expected to result in about 25 peak period trips during both morning and afternoon peak periods. The estimated 15 residential units are likely to generate a comparable number of peak period trips but in a different flow pattern. In the morning, nearly all trips would be expected to be outbound, while in the afternoon peak period, most trips would be inbound. Due to the change in traffic patterns given relatively free-flowing existing conditions observed at local intersections, this Alternative would not be expected to result in a significant impact at area intersections.

Therefore, the No Project-Existing General Plan Alternative is considered similar to both Project Variants in terms of effects on traffic levels of service on local streets.

Utilities and Service Systems

The No Project-Existing General Plan Alternative would result in increased demand for utilities and service systems. However, it is assumed that the demand can be met by the existing infrastructure and capacities of utility service providers. Therefore, this Alternative is considered environmentally similar to both Project Variants.

Agricultural Resources, Mineral Resources, and Recreation

The project site does not contain any agricultural or forest resources or mineral resources and neither Project Variant would have an impact on recreation. The No

² Personal communication with Chris Thorsen, Captain, Contra Costa County Fire Protection District. September 1, 2010.

³ Personal communication with Ted Leach, Fire Inspector, Contra Costa County Sheriff's Department, Inspection and Control Division. October 6, 2010.

Project-Existing General Plan Alternative is therefore considered environmentally similar to both Project Variants with respect to agricultural resources, mineral resources, and recreation.

5.5.3 Modified Right-of-Way Alternative

The Modified Right-of-Way Alternative was developed as an alternative to Project Variant B. The applicant contends that this Alternative will result in better operations at the Boulevard/Garden/Kinney intersection and will ultimately be beneficial to the neighborhood. Because this Alternative would retain the development of the sanctuary building as planned in Project Variant A, most site-specific impacts of this Alternative would be similar to Project Variant A.

Aesthetics

Under the Modified Right-of-Way Alternative, the only difference from Project Variant A is in the public right-of-way area and lands immediately adjacent fronting Boulevard Way. However, all such differences would be within the right-of-way area. The proposed wall along Boulevard Way would remain as shown in plans for Project Variant A (see **Figure 4.1-6a** for a visual simulation). Environmental impacts would thus be similar.

Air Quality

Under the Modified Right-of-Way Alternative, construction and operation of the sanctuary building would be that same as both Project Variants. Therefore, all of the short-term emissions resulting from the construction of the building and the long-term operational impacts would be the same under this Alternative. This Alternative is considered environmentally similar to both Project Variants with respect to short-term or long-term air quality impacts.

Biological Resources

The Modified Right-of-Way Alternative would affect biological resources in the same manner as both Project Variants as the building and the program activities for this Alternative are the same as both Project Variants. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to biological resources.

Cultural Resources

Soil grading and excavation activities would have the potential to damage any potential unknown historic, archaeological, and paleontological resources on the project site. The Modified Right-of-Way Alternative would result in essentially the same soil disturbing activities as both Project Variants. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to cultural resources.

Geology and Soils

The same sanctuary building would be developed under the Modified Right-of-Way Alternative. The Alternative involves no changes to building plans that would alter any of the geology and soils issues associated with both Project Variants. Thus, this Alternative's geology and soils impacts are considered environmentally similar to both Project Variants.

Hazards and Hazardous Materials

No contaminated soils or groundwater are known to be present at the project site. Development of the Modified Right-of-Way Alternative would result in a similar expanse of ground disturbance as both Project Variants. Therefore, both Project Variants and the Alternative have a relatively similar potential to encounter unknown hazardous materials. No other change relative to hazards/hazardous materials is associated with the Alternative. Accordingly, this Alternative is considered environmentally similar to both Project Variants.

Hydrology and Water Quality

The Modified Right-of-Way Alternative, unlike Project Variant A, would expand the paved width of Boulevard Way from 12 feet to 14 feet. Accordingly, as per the Drainage Report (**Appendix L**), the Modified Right-of-Way Alternative would result in more impervious area and more stormwater flow than Project Variant A – but less impervious area and less stormwater flow than Project Variant B. Therefore, this Alternative would be considered superior to Project Variant A and inferior to Project Variant B in terms of hydrology and water quality considerations.

Land Use and Planning

The Modified Right-of-Way Alternative would result in the development of the same sanctuary building. This Alternative is therefore considered environmentally similar to both Project Variants, as the sanctuary building use is consistent with existing General Plan and zoning designations.

Noise and Vibration

With the Modified Right-of-Way Alternative, the short-term construction noise impacts are considered to be similar to both Project Variants, as the extent and duration of construction would be similar. This Alternative would entail some street reconstruction off the project site (i.e., the proposed street improvements) but such improvements would not be expected to result in substantial additional noise impacts nor extend the construction schedule. Long-term noise impacts are considered to be similar to both Project Variants, based on the assumption that the daily operational activities of the proposed sanctuary building would be exactly the same as under both Project Variants

Accordingly, this Alternative is considered environmentally similar to both Project Variants with respect to noise impacts.

Population and Housing

Similar to both Project Variants, the Modified Right-of-Way Alternative would not introduce any new homes or associated population to the project area. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to population and housing.

Public Services

Similar to both Project Variants, the Modified Right-of-Way Alternative would not result in substantial increases in demand for any public service. Therefore, this Alternative is considered environmentally similar to both Project Variants.

Transportation

The Modified Right-of-Way Alternative would result in substantially different conditions for Boulevard Way relative to both Project Variants. As shown in **Figure 5-1**, the Modified Right-of-Way Alternative would introduce a new stop sign control for northbound traffic along Boulevard Way, add pedestrian crosswalks and refuge areas, create a right-turn pocket for Kinney Drive southbound to Boulevard Way, and create bus stop pockets along new project-fronting sidewalks. The collective impact of these improvements removes the need for the 35 mph sight distance as set forth in Project Variant B and **Mitigation Measures 4.13-1** and **4.13-2** as applied to Project Variant A. Cars traveling north/east bound on Boulevard Way would stop at the Kinney Drive/Garden Court intersection. Given the short distance of this intersection from the sanctuary driveway, such cars would be traveling at substantially lower speeds, thereby reducing potential conflicts with vehicles exiting or entering the sanctuary driveway.

In this sense, this Alternative would result in a substantially different “feel” for the project frontage of Boulevard Way. Under Project Variant B, northeast bound traffic rounding the curve at Boulevard Way would have a wider street and fewer visual

obstructions in the immediate field; the collective result of these improvements could lead to faster vehicle speeds on Boulevard Way (although the posted speed limit would remain at 25 miles per hour). Under the Alternative, the intersection modifications could have a calming effect on the speed and intensity of vehicles moving through the project area on Boulevard Way. This potential calming effect associated with the Alternative makes it environmentally superior to both Project Variants in terms of safety considerations.

Apart from the above changes to adjacent streets/right-of-way areas, both Project Variants and this Alternative propose the exact same number of new vehicle trips and emergency access patterns.

Utilities and Service Systems

Under the Modified Right-of-Way Alternative, construction and operation of the sanctuary building would be the same as both Project Variants. The demand for utilities can be met by the existing infrastructure and capacities of utility service providers. Therefore, this Alternative is considered environmentally similar to both Project Variants with respect to utilities.

Agricultural Resources, Mineral Resources, and Recreation

The project site does not contain any agricultural or forest resources or mineral resources and neither Project Variant would have an impact on recreation. Similarly, the Modified Right-of-Way Alternative would have no impact on these resources. Therefore, this Alternative is considered to be neither environmentally superior nor inferior to either Project Variant with respect to agricultural resources, mineral resources, and recreation.

5.5.4 Environmentally Superior Alternative

Table 5-1 provides a side by side comparison of the potential impacts of both Project Variants with the No Project–No Build Alternative, the No Project–Existing General Plan Alternative, and the Modified Right-of-Way Alternative.

The No Project-Existing General Plan Alternative is almost equivalent to both Project Variants, after mitigation. As this Alternative avoids the extensive excavation associated with the both Project Variants, it is considered superior in terms of construction period impacts. It is considered inferior to both Project Variants based on its greater impervious surface area and increased number of vehicle trips associated with residential use.

The Modified Right-of-Way Alternative is considered the environmentally superior Build Alternative. In all but two environmental topic areas, this Alternative's effects are equivalent to those of both Project Variants. The provision of expanded pedestrian improvements under this Alternative leads to superior traffic safety effects. Although the hydrology effects are considered inferior to Project Variant A due to the incremental increase in impervious surfaces, the Modified Right-of-Way Alternative would result in less impervious area and thus less stormwater flow than Project Variant B and would be considered superior to Project Variant B.

Table 5-1 Comparison of Impacts of the Alternatives to the Project Variants

Environmental Issue	Project Variants: Level of Environmental Impact	No Project – No Build Alternative	No Project – Existing General Plan Alternative	Modified Right-of-Way Alternative
Aesthetics	Less than significant	Superior	Similar	Similar
Air Quality (construction period)	Less than significant with mitigation	Superior	Superior	Similar
Air Quality (long-term)	Less than significant	Superior	Inferior	Similar
Biological Resources	Less than significant with mitigation	Superior	Similar	Similar
Cultural Resources	Less than significant with mitigation	Superior	Similar	Similar
Geology, Soils, and Mineral Resources	Less than significant with mitigation	Superior	Similar	Similar
Hazards/Hazardous Materials	Less than significant with mitigation	Superior	Similar	Similar
Hydrology	Less than significant with mitigation	Inferior	Inferior	Inferior to Project Variant A Superior to Project Variant B
Land Use	No Impact	Similar	Similar	Similar
Noise (short-term construction)	Less than significant with mitigation	Superior	Superior	Similar
Noise (long-term operation)	Less than significant	Similar	Similar	Similar
Population/Housing	Less than significant	Similar	Similar	Similar
Public Services and Public Utilities	No impact	Similar	Similar	Similar
Transportation/Circulation (roadway operations)	Less than significant	Similar	Similar	Similar
Transportation/Circulation(ped/ bike compatibility)	Project Variant A: Less than significant with mitigation Project Variant B: Less than significant	Similar	Similar	Superior
Utilities and Service Systems	Less than significant with mitigation	Superior	Similar	Similar
Agriculture, Minerals, & Recreation	No Impact	Similar	Similar	Similar

Source: Circlepoint, 2011.

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6.0 CUMULATIVE IMPACTS

This chapter summarizes the potential cumulative physical and growth-related environmental consequences associated with the New Sanctuary for Sufism Reoriented.

6.1 REGULATIONS AND STANDARDS

The California Environmental Quality Act (CEQA) requires an evaluation of a project's contribution to cumulative environmental impacts. According to Section 15355 of the CEQA Guidelines, cumulative impacts are defined as "two or more individual effects which, when taken together, are considerable, or which can compound or increase other environmental impacts." As stated in the Guidelines, an individual project may not have significant impacts; however, in combination with other related projects, the cumulative effects may be significant. When evaluating cumulative impacts, CEQA recommends one of two methods:

1. Projects to consider in the cumulative analysis include any past, present, and probable future projects producing related or cumulative impacts, including projects outside the control of the lead agency; or
2. The cumulative analysis would consider projections contained in an adopted local, regional, or statewide plan, or would use a prior environmental document which has been adopted or certified for such a plan.

The second method of evaluation was used for this analysis. The Contra Costa County General Plan EIR evaluated growth in Contra Costa County through 2020. The Contra Costa County General Plan EIR identified significant impacts that would occur due to buildout of the General Plan. This analysis incorporates significant impacts of the anticipated general plan buildout, combined with the New Sanctuary for Sufism Reoriented, which could contribute to cumulative impacts.

The spatial boundary for the study of a project's cumulative impacts varies depending on the resource of concern. For example, impacts related to geology and archeological resources are generally site specific, while air and noise impacts can encompass larger areas. Most of the impacts are site-specific and limited in terms of geography, and do not have the ability to compound impacts from past, existing or future projects beyond the project area. In these circumstances, CEQA directs that it is not necessary to address in detail the impacts from other projects:

“[w]here a lead agency is examining a project with an incremental effect that is not ‘cumulatively considerable,’ a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable” (CEQA Guidelines, §15130, subd. (a); and

“[a]n EIR should not discuss impacts which do not result in part from the project evaluated in the EIR”. (CEQA Guidelines, §15130, subd. (a)(1).

6.2 ANALYSIS OF CUMULATIVE IMPACTS

The following analysis describes the potential for the New Sanctuary for Sufism Reoriented, in combination with other projects, to result in cumulatively significant environmental impacts. In each instance, the evaluation identifies whether the cumulative impact would be significant, and whether either Project Variant’s contribution would be considerable.

6.2.1 Aesthetics

The cumulative setting for aesthetics includes any proposed development allowed by the Contra Costa County General Plan within the same viewshed as the sanctuary. The Saranap neighborhood is the project area viewshed. Most of the Saranap neighborhood is developed with single-family and multi-family residential development, and commercial uses.

As discussed in **Section 4.1, Aesthetics**, implementation of either Project Variant would not result in project-level significant impacts to scenic vistas, scenic resources within a scenic highway, or to the existing visual character or quality of the site and surroundings.

The General Plan EIR noted three cumulative impacts related to the loss of scenic quality:

- development of vacant areas would reduce natural open space and would change the County’s character;
- new development that is obtrusive, inconsistent with surrounding development or which is placed on a location of unique scenic value; and
- development of hillsides, ridges, and the Bay and Delta shoreline.

Neither Project Variant would develop a vacant area that would reduce natural open space. The site is already developed and would be redeveloped as a religious facility. Neither Project Variant would therefore contribute to the loss of scenic quality through the development of a vacant area.

Neither Project Variant would develop a hillside, ridge, or area containing shoreline of the Bay or Delta. Neither Project Variant would therefore result in a considerable contribution to this impact. Furthermore, the project site is not considered of unique scenic value; therefore, neither Project Variant would result in a considerable contribution to this impact.

As discussed **Section 4.1, Aesthetics**, the area in which the project site is located is a mixed-character suburban neighborhood. Buildings in the vicinity range from one to three stories in height and include a variety of architectural styles reflecting local building trends of the past several decades. Both Project Variants would meet all setback and height requirements of the zone district, and would therefore be of a size that is allowed within the R10 district. The plans are well designed and reflect an architectural style expresses the use of the facility as a religious institution. The plans call for landscaping that would provide a buffer for neighboring properties.

Religious uses are considered compatible with residential uses and would not result in noise or other intrusions that would inherently create conflicts with residential neighbors. Neither Project Variant would therefore result in a considerable contribution to the identified impact of new development that is intrusive or inconsistent with surrounding development.

6.2.2 Air Quality

The cumulative setting for air quality includes any proposed development within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The General Plan EIR noted that build-out would result in a significant and unavoidable impact on regional air quality. The County adopted overriding considerations as part of the adoption of the General Plan, and cited various technical, social, and economic benefit factors as the basis for overriding the impact to air quality.

As discussed in **Section 4.2 Air Quality**, the Bay Area is considered a non-attainment area for ground-level O₃ under both the federal CAA and the California CAA. The area is also considered non-attainment for PM₁₀ and PM_{2.5}. As part of an effort to attain and maintain ambient air quality standards for O₃ and PM₁₀, and PM_{2.5}, BAAQMD has established thresholds of significance for O₃ precursor pollutants (ROG and NO_x) and PM₁₀ and PM_{2.5}.

Both Project Variants, without mitigation, would exceed the BAAQMD-recommended construction threshold of significance for NO_x (54 pounds per day), resulting in a significant impact. According to the BAAQMD CEQA Guidelines, any project that would individually have a significant air quality impact would also have a significant cumulative air quality impact.

Implementation of **Mitigation Measures 4.2-2a** and **4.2-2b** requires the applicant to implement additional BAAQMD recommended mitigation measures to minimize NO_x emissions, including extending the excavation phase of the construction schedule to reduce the volume of daily emissions below the NO_x threshold (see **Table 4.2-7**). As there is no project-level significant impact, there would be no cumulatively considerable contribution to this cumulative impact.

6.2.3 Biological Resources

The cumulative setting for biological resources is the County. According to the General Plan EIR, future development in the county would result in the destruction of significant ecological resources, and the General Plan has actively identified these areas so that they can be protected from development.

The project site and Saranap neighborhood is a fully developed area that retains little or no natural habitat and exhibits a high level of disturbance. The area does not contain any of the significant ecological resources identified in the General Plan EIR, and therefore neither Project Variant would result in a considerable contribution to this impact.

As discussed in **Section 4.3, Biological Resources**, to the extent that the anticipated removal of trees and vacant buildings on the project site result in impacts to any bird and/or roosting bat species that may occupy such trees, implementation of **Mitigation Measures 4.3-1a** and **4.3-1b** would ensure that there are no active nests in existing trees or structures on the project site and that trees proposed for preservation are protected.

6.2.4 Cultural Resources

The cumulative context for cultural resources is planned developments within the county that could potentially affect archaeological or historical resources. As determined by the Contra Costa County General Plan EIR, development associated with the General Plan buildout would result in potentially significant impacts to known and unknown historical and archeological resources. As such, development of the project site, in combination with the planned projects of the General Plan EIR, would result in a significant cumulative impact to cultural resources.

No known historical, archaeological, or paleontological resources were identified on the project site, and therefore neither project variant would contribute to this cumulative impact. To the extent that construction activities unearth previously undiscovered resources, implementation of **Mitigation Measures 4.4-1** through **4.4-4** would ensure their proper identification and treatment. Neither Project Variant would therefore result in a considerable contribution to this cumulative impact.

6.2.5 Geology and Soils

The cumulative context for geology and soils includes any proposed development in the project vicinity. Geologic hazards related to future development are site specific and relate to the type of building and building foundation proposed, as well as the soil composition and slope on a specific project site.

The General Plan EIR noted that build out would increase the potential for new development in areas subject to seismic shaking, liquefaction, ground failure and landsliding, thereby increasing the associated risks to persons and property.

As discussed in **Section 4.5, Geology and Soils**, the project site is not subject to landsliding, liquefaction or ground failure and would not therefore contribute to these identified cumulative impacts.

Regarding potential seismic shaking, the site is not located in the vicinity of an active fault line or fault trace and would not therefore be subject to ground rupture. However, because of the seismically active nature of the region, both Project Variants are required to conform to all general plan conditions requiring analysis and design to ensure adequate performance during a seismic event. The incorporation of these design requirements ensure that neither Project Variant would make a considerable contribution to the increase in population exposed to posed injury, death, or property damage from seismic events in the region.

6.2.6 Greenhouse Gas Emissions

The cumulative setting for greenhouse gas emissions includes any proposed development within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Both construction period and operational period activities have the potential to generate GHG emissions.

Construction Impacts

The Project Variants would generate equal amounts of GHG emissions during temporary (short-term) construction activities. These emissions would be generated from various sources, such as site grading, excavation of soils, equipment engines, heavy-duty construction vehicles, equipment hauling materials to and from the project site, and motor vehicles used by the construction workers. Based on the UBEMIS2007 model for the Project Variants, it is estimated that temporary construction emissions would be 383

metric tons of CO₂e for the entire 18 month construction phase. This represents a one-time emission, in contrast to operational GHG emissions that would continue indefinitely.

The BAAQMD has not established thresholds for construction period GHG emissions. The URBEMIS2007 model output calculations for construction GHG emissions are included in **Appendix J**.

Operational Impacts

The cumulative contribution of either Project Variant is evaluated against the BAAQMD adopted threshold of 1,100 annual metric tons of CO₂e.

The sanctuary's incremental increases in GHG emissions associated with traffic and with direct and indirect energy use would contribute to regional and global increases in GHG emissions and associated climate change effects. **Table 6-1** shows estimated GHG emissions in metric tons per year. The methodology and assumptions used in calculating GHG emissions are described in **Section 4.6, Greenhouse Gas Emissions and Energy** and can be found in **Appendix J**.

Table 6-1 Operational Annual CO₂e Emissions

Source Type	Basis for Calculation	Project Annual Emissions (metric tons ^a per year)
Area Source	Natural gas and landscape equipment from URBEMIS2007	104.27
Mobile Sources	Traffic from URBEMIS2007	177.15
Electricity Usage	Estimated religious facilities using 9.81 kWh per year per square foot.	237.01
Water and Wastewater	From BAAQMD GHG Model	6.45
Solid Waste	From BAAQMD GHG Model	26.17
Total		551

Notes:

^a Metric tons are equal to 0.9072 U.S. tons

Source: Circlepoint, 2011.

As shown in **Table 6-1**, operation of either Project Variant would result in a total of 551 metric tons of CO₂e per year, falling substantially below the BAAQMD threshold of 1,100 metric tons per year.

The model incorporates several conservative assumptions to ensure that the analysis does not understate the potential rate of emission:

- 1) The calculation assumes the proposed 66,074 square foot sanctuary building is entirely new and does not provide any “discount” of current GHG emissions of the three existing residences that would be demolished.
- 2) The calculation does not provide a credit for the net increase of at least 129 trees associated with implementation of either Project Variant. Not only do trees sequester CO₂, but they also provide shade, which would help to regulate the building’s internal temperature, reducing energy usage in the proposed sanctuary building.
- 3) The sanctuary building would include a highly efficient HVAC system that could provide annual energy savings of approximately 50 percent as compared to a standard HVAC system on a similar above-ground building. Such a system would further reduce energy demand and the associated emissions of GHG.

Therefore, according to the BAAQMD CEQA Guidelines, the contribution to greenhouse gas emissions would not be cumulatively considerable.

Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed above, the incremental increase in operational GHG emissions associated with either Project Variant would be below the BAAQMD adopted GHG emission threshold. As such, the GHG emissions would be below the threshold established by the BAAQMD that is considered to allow the Bay Area to meet the requirements of AB 32, which establishes a target for reducing statewide GHG emissions to 1990 emission levels by 2020.

In accordance with AB 32, the State of California is in the process of implementing identified strategies to reduce emissions. Strategies included in the *Draft 2009 Climate Action Team Report to the Governor and Legislature* that would apply to both Project Variants were identified in **Table 4.6-1**. As shown in **Table 4.6-1**, both Project Variants would maintain consistency with the applicable climate change emissions reduction strategies identified by the California Climate Action Team. Thus, neither Project Variant would conflict with applicable plans and policies adopted to reduce GHG emissions.

6.2.7 Hazards and Hazardous Materials

The General Plan EIR identifies a significant impact related to risk of accidental release of hazardous materials associated with heavy industry and other land uses requiring the

use, transport, and storage of hazardous materials. The EIR also notes that new residential and commercial development would increase the number of people in proximity to these uses thereby increasing their risk of exposure.

Hazardous materials are strictly regulated by local, state and federal laws specifically to ensure that they do not result in a gradual increase to toxins in the environment. The County general plan includes policies that reinforce these regulations by requiring construction and operation pursuant to applicable standards and regulations, submittal of hazardous materials business plans, risk management and prevention program information, secondary containment, and creation of buffer zones for adjacent development. Implementation of these policies occurs as part of the development review and construction permitting process and was found to reduce potential impacts related to hazardous materials to a less-than-significant level.

Neither Project Variant involves the routine use of substantial quantities of hazardous or acutely hazardous materials and therefore would not contribute to the cumulative impacts identified in the General Plan EIR associated with proximity to such uses and potential health risk during accidental release of hazardous materials.

6.2.8 Hydrology and Water Quality

Water Quality

The 2005 General Plan EIR identified that an increase in urban runoff due to urban development would contribute pollutants and sediments to surface waters such as rivers and creeks. The General Plan determined that this increase in pollutants was a significant impact to the water quality of rivers and creeks.

The discharge of stormwater runoff from new development in California is highly regulated by local, state, and federal laws specifically to ensure that they do not result in the gradual degradation of water quality. The General Plan includes policies that specifically reinforce these regulations by establishing the County's active role in water quality programs. Point sources of pollution are required to be identified and controlled in order to protect adopted beneficial uses of water. Implementation of these policies, which occurs as part of the development review and construction permitting process, was found to reduce potential impacts to a less-than-significant level.

Both Project Variants incorporate storm water control features that would retain storm water on site during rain events, thereby reducing the quantity and improving the quality of offsite flow to Las Trampas Creek. These enhancements are in conformance with the County's C.3 guidelines and ensure that the contribution to this cumulative impact would not be considerable.

Flooding and Sea Level Rise

The 2005 General Plan EIR identified that future development within the 100-year floodplain would increase the number of persons and amount of property potentially exposed to flood conditions, including risks from flood hazards caused by sea level rise and levee or dam failure. As such, the General Plan includes policies that require all development proposed in areas of special flood hazards to conform to the County's flood-resistant design requirements related to building elevations, drainage requirements, etc. The policies also require that the review of development proposals occur in conjunction with the most recent dam failure inundation maps in order to determine evacuation routes.

The project site is not located within the 100-year or 500-year flood zone and therefore would not result in a considerable contribution to this impact.

6.2.9 Land Use and Planning

The cumulative context for land use and planning includes development anticipated under the County's General Plan in Central Contra Costa County (Central County). Development of either Project Variant in combination with other cumulative projects would contribute to the planned build-out of the Central County. As neither Project Variant requires a general plan amendment, neither would conflict with the pattern of use contemplated in the General Plan EIR.

The General Plan EIR identified impacts related to the adoption of the urban limit line (ULL) and the concentration of development within that boundary. The project site is located within the ULL and would not conflict with the intent of the ULL to preserve agricultural lands.

The General Plan EIR also noted that the effect of the ULL and growth management program could be to slow or constrain the pace of growth in unincorporated areas and intensify development in incorporated cities. Neither Project Variant would contribute to this impact, as it represents growth in the County, outside of the incorporated cities of Walnut Creek and Lafayette.

6.2.10 Noise

The General Plan EIR noted that build-out would result in increased ambient noise levels related to roadway traffic and construction, as well as airport activity, industrial activity and the extension of BART. For residential uses, the General Plan identifies 60 dB as the normally acceptable standard for exterior noise, and 45 dB or less for interior noise levels. The County published noise contour maps to identify anticipated future sound levels resulting from build-out of the General Plan.

The cumulative impact area for noise includes areas where noise from either Project Variant could be heard and could combine with noise from adjacent land uses. As all of the surrounding land uses would continue to be residential, the main source of cumulative noise would be from local roadways. The project site is not located in the vicinity of an airport, industrial site, or BART extension, and would not contribute noise to any of these identified cumulative impacts.

As discussed in **Sections 4.10** and **4.13**, traffic in the project vicinity is not expected to increase significantly, as the majority of the congregation lives within 0.5-mile of the new sanctuary and would walk or use alternate transportation to reach the site.

Additionally, both Project Variants would include a Transportation Demand Management (TDM) Plan which would minimize an increase in vehicular traffic by encouraging carpooling, bicycling, and walking to and from the project site. Any change in traffic volume associated with the project site is therefore expected to be minimal and would not result in perceptible increase in ambient noise. Therefore, the contribution to cumulative traffic noise would not be considerable.

6.2.11 Population and Housing

The cumulative setting for population and housing includes development allowed in the unincorporated area of Saranap by the County's General Plan, as well as the County as a whole.

The General Plan EIR noted that the County as a whole would grow in population over the planning period, concentrated in the incorporated cities. The General Plan EIR noted that the anticipated population growth could have an adverse impact on housing affordability and encouraged a variety of housing types to meet the growing demand.

Neither Project Variant includes any housing and would not therefore contribute to population growth in the County. Moreover, the majority of the members of Sufism Reoriented already live in the Saranap neighborhood, suggesting that neither Project Variant would result in indirect impacts related to a new influx of renters and buyers to the area following construction.

Both Project Variants include the demolition of three housing units; however, the housing units are market-rate and would not affect the affordability of housing identified in the General Plan EIR. Moreover, the current vacancy rate of 3.0 percent county-wide and 3.57 percent in Walnut Creek indicates that housing stock is not in short supply. The recent economic downturn has had a dramatic impact on housing in Contra Costa County, such that the demolition of the housing on the project site would not result in a considerable contribution to the availability of housing.

6.2.12 Public Services

The cumulative context for public services is any development within the service area of each public service provider. The Contra Costa County Fire Protection District provides fire protection services to unincorporated Contra Costa County and some incorporated cities within the County. The Contra Costa County Sheriff's Office provides police protection to the unincorporated areas of the County. Children residing in the vicinity of the project site are in the attendance area of the Walnut Creek School District and Acalanes Union High School District. The County's Public Works Services department maintains County parkland and recreational facilities.

The General Plan EIR indicated the buildout of the General Plan would lead to increased demand for fire protection, police protection, schools, and parkland in the County. Both Project Variants, in combination with other development within CCCFPD's service area, would result in a significant cumulative impact related to fire protection.

The General Plan EIR requires that all new development pay its fair share costs for new fire protection facilities and services. As required by mitigation, either Project Variant would pay CCCFPD's impact fees prior to the issuance of occupancy permits. Therefore, the contribution to the significant cumulative impact would not be cumulatively considerable.

As discussed in **Section 4.12**, neither Project Variant would result in any impacts to police protection services, schools, and parks. Therefore, neither Project Variant would contribute to the significant cumulative impact for these public services.

6.2.13 Transportation and Circulation

The cumulative impact area for transportation and circulation is the project vicinity and the intersections and roadways identified and studied in the traffic analysis (see **Section 4.13**).

Cumulative conditions in the project area were specifically estimated for the year 2030. Cumulative year estimates were developed for project area roadways based on projections of traffic growth derived from the County's transportation model. For the purposes of the Project Variants, the estimated growth in traffic on the Boulevard Way corridor by the year 2030 was calculated as 17 percent for the west bound direction and 26 percent for the east bound direction. Please see **Appendix O** for more detailed discussion of this growth factor.

Table 6-2 below summarizes conditions at project area intersections under year 2030 cumulative conditions, with and without the addition of Project Variant traffic.

Table 6-2 Year 2030 Cumulative Conditions

#	Intersection	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
		Year 2030, No Project	Year 2030, Plus either Project Variant	Year 2030, No Project	Year 2030 Plus either Project Variant
1	Boulevard Way/Olympic-Tice Blvd.	A 0.44	A 0.44	A 0.46	A 0.46
2	Boulevard Way/Warren Road	B 10.9	B 11.0	B 10.8	B 10.8
3	Boulevard Way/Kinney Drive	B 11.3	B 11.3	B 10.9	B 11.0
4	Boulevard Way/Saranap Avenue	B 11.6	B 11.7	B 11.3	B 11.3
5	Boulevard Way/White Horse Court*	----	----	----	----
6	Boulevard Way/Flora Avenue	B 10.3	B 10.3	A 9.8	A 9.8
7	Boulevard Way/Mt. Diablo Blvd.	A 0.51	A 0.52	B 0.69	B 0.69
8	Boulevard Way/Project Drive (future)	----	B 10.3	----	B 10.5

Source: Omni-Means Engineers and Planners, 2010.

*This intersection would be removed with either Project Variant.

As shown in **Table 6-2**, at the year 2030, assuming substantial growth in traffic along the Boulevard Way corridor, all of the intersections are operating at LOS A or B (acceptable conditions) before Project Variant-related traffic is considered. When Project Variant-related traffic is added, the level of service at each intersection remains unchanged in terms of letter grade. The contribution to cumulative traffic impacts in the project area would not be cumulatively considerable.

6.2.14 Utilities and Service Systems

The cumulative impact area for utility and service systems includes the project area within the Saranap neighborhood and the service areas of the local utility providers. East Bay Municipal Utility District (EBMUD) provides water for parts of Alameda and Contra Costa counties. The Central Contra Costa Sanitary District (CCCSA) provides wastewater and treatment services to cities and unincorporated areas within central Contra Costa County, such as Martinez, Pleasant Hill, Walnut Creek, Moraga, and San Ramon. Solid waste and recycling services are provided by the Central Contra Costa Solid Waste Authority (CCCSWA). The CCCSWA provides services to the cities of Orinda, Danville, Lafayette, Moraga, Walnut Creek, and unincorporated areas of central Contra Costa County.

The General Plan EIR indicated that future development would cause an increase in long term water demand that could not be accommodated by existing water agency plans.

The County requires that service providers confirm that they have sufficient capacity to serve proposed developments. The County also discourages developments outside of existing service boundaries of water districts to proactively address this impact.

As discussed in **Section 4.14, Utilities and Service Systems**, consultation with existing solid waste and waste water treatment providers indicated that neither Project Variant would result in the need for new utility facilities not already planned, and that the existing waste water treatment and solid waste facilities would be adequate to serve either Project Variant.

Regarding the provision of domestic water supplies, neither Project Variant would result in additional water demand or require additional water supply capacity beyond what has already been projected and planned for as part of EBMUD's Urban Water Management Plan. Per the 2005 UWMP, EBMUD anticipates meeting the projected water demand for its service area through 2030 for normal water years but notes that EBMUD's current water supply is insufficient to meet customer needs during multiple-year droughts. As described in **Mitigation Measure 4.14-1**, both Project Variants will conform with EBMUD's Drought Management Program by complying with reduction goals in the event of multiple drought years and critical shortages. Therefore, neither Project Variant would result in a considerable contribution to cumulative impacts related to water supply.

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7.0 CEQA REQUIRED DISCUSSIONS

As required by the California Environmental Quality Act (CEQA), this chapter provides a discussion of effects not found to be significant, unavoidable significant impacts, significant irreversible environmental changes, and impacts related to growth inducement. The focus of this chapter is on the environmental effects of construction and operation of the development of the project area and the resulting growth potentially generated by the proposed development.

7.1 EFFECTS FOUND TO BE NOT SIGNIFICANT

CEQA requires a brief discussion of the potential effects of a project that have been determined not to be significant and, therefore, not evaluated in detail in the Environmental Impact Report (EIR). This Draft EIR provides an analysis of all environmental issue areas listed in Appendix G of the CEQA Guidelines. **Chapter 4** identifies issues found not to be significant, which are also summarized below.

Aesthetics

Scenic Resources

State Route 24 (SR 24) and Interstate 680 (I-680) are both designated as state scenic highways within the project area. The project site is located approximately 1,500 feet from SR 24, and approximately 2,500 feet from I-680, and would have no direct effect on trees, rock outcroppings, or historic resources visible within these corridors.

Furthermore, the site is not visible from either highway, due to intervening development, trees, and soundwalls. Therefore, there would be no effect to views from these scenic corridors. No mitigation is necessary.

Agricultural Resources

There are no farmlands (Prime Farmland, Unique Farmland, or Farmlands of Statewide Importance) present on the project site or adjacent to the project area. The project site and adjacent lands are designated as Urban and Built-Up Land by the California

Department of Conservation's Farmland Mapping and Monitoring Program.¹ The project site is currently developed for residential uses and is not zoned for agricultural uses, timberland uses, nor is it under a Williamson Act contract.

Biological Resources

Riparian Habitat or Sensitive Natural Communities

The project site and surrounding area are developed and do not contain any riparian areas or other sensitive natural communities. Therefore, the proposed development would not result in impacts to such resources.

Federally Protected Wetlands

A formal wetland delineation and jurisdictional determination was prepared for the project site in accordance with the procedures outlined by the ACOE, as described in **subsection 4.3.1, Existing Conditions**. This delineation was conducted as part of the Biological Resources Assessment prepared by EDAW, and is included in **Appendix G**. No jurisdictional wetlands or Waters of the U.S., as defined by Section 404 of the federal CWA, were found to occur on the project site. Therefore, development of the proposed sanctuary building would not impact jurisdictional wetlands. Refer to **Section 4.8, Hydrology and Water Quality** for a discussion of off-site stormwater drainage into Las Trampas Creek, which is considered jurisdictional water.

Habitat Conservation Plan

The closest Habitat Conservation Plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), whose western boundary is located approximately 5 miles east of the project site across an urbanized area (the City of Walnut Creek). Therefore, there would be no impact or conflict with any HCP.

¹ Contra Costa County Important Farmland 2008. State of California Department of Conservation, Farmland Mapping and Monitoring Program. Available at: <<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/con08.pdf>>.

Geology and Soils

Fault Rupture

The project site is not located in an area identified as an Alquist-Priolo Earthquake Fault Zone. Therefore, development of the proposed sanctuary building would not expose people or structures to potential substantial adverse effects from a known earthquake fault zone.

Liquefaction

The project site is at low risk for liquefaction. The subsurface investigation performed on the project site did not encounter any layers of saturated non-cohesive silts or loose clean sands. Saturated sandy soils, where encountered, had significant clay content, were medium-dense to dense, and were not considered to pose a significant liquefaction risk.

Due to the type of soils present, the project site has a very low liquefaction hazard and would not expose people or structures to a significant liquefaction risk. No mitigation is required.

Landslides

The project site is mostly flat with a 2.5 percent slope. According to the Contra Costa County General Plan, the project site is not located in an area prone to landsliding. Since the project site is not susceptible to slope instability, development of the proposed sanctuary building would not expose people or structures to a significant risk of landslides.

Septic Systems

The project site would connect to the Central Contra Costa County Sanitary sewer system further discussed in **Section 4.14, Utilities and Service Systems**. The proposed sanctuary building would not utilize a septic system.

Hazards and Hazardous Materials

Handling Hazardous Materials near Schools

The proposed sanctuary building constitutes a religious use that would not entail the routine use, transport, or disposal of hazardous materials as part of day-to-day operations. Furthermore, the project site is not located within one-quarter mile of an existing or proposed school. The nearest school facility (the Pied Piper Pre-School) is located approximately 0.3-mile south of the project site.

Hazardous Materials Site

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As discussed in the Phase I ESA, prior soil staining from a petroleum spill related to the use of the site as a vehicle storage yard was fully remediated in 1999, and no further listing for the subject property exist.

Since the project site does not contain any known hazardous material contamination and no nearby properties contaminated with hazardous waste would likely impact the project site, there would be no impacts related to hazardous materials sites.

Airport Land Use Plan/Private Airstrip

The closest airport to the project site is Buchanan Field, located more than 8 miles away in the unincorporated Concord area of Contra Costa County. Moreover, no known private use airstrips are located within 2 miles of the project site. Based on the significant distance from public airports and private airstrips, the proposed sanctuary building would not introduce any foreseeable hazards to aircraft or to people residing or working in the project area. No mitigation is required.

Wildland Fires

The project site is currently developed and is located in a developed suburban area. The project area is surrounded by the urbanized and developed cities of Lafayette and Walnut Creek. Because of the site's distance from any wildland areas, there would be no exposure of people or structures to wildland fire hazards. No mitigation is required.

Hydrology and Water Quality

Inundation by Seiche, Tsunami, or Mudflow

The project site is separated from the San Francisco Bay shoreline by more than 15 miles and substantial intervening topography. Therefore, the possibility of damage from a tsunami is remote. Similarly, the project site is separated by about 4 miles and substantial topographical features from the Lafayette reservoir, the closest large body of water to the project site. The relatively flat topography of the project site and its immediate surroundings reduces the likelihood of mudflows to a minimal level. No mitigation is required.

100-Year Flood Zone

The Federal Emergency Management Agency (FEMA) publishes maps showing areas of flood risk. FEMA maps² show that the project site is not within a 100-year or 500-year flood zone. Therefore, the proposed development on the project site would not expose people or structures to risks associated with a 100-year flood event. No mitigation is necessary.

Depletion of Groundwater Table

The proposed sanctuary building and associated landscaping would not utilize groundwater for irrigation or drinking water, and would not therefore deplete groundwater. The municipal water provider serving this area is the East Bay Municipal Utility District (EBMUD).

As provided in the drainage report and the SWCP (**Appendices L and M**), both Project Variants would increase the overall porosity of the project site as a whole. Groundwater recharge would be enhanced since both Project Variants would increase the percent of pervious surface area on the project site relative to existing conditions. Accordingly, neither Project Variant would deplete groundwater or substantially interfere with its recharge.

Land Use and Planning

Physically Divide an Establish Community

The proposed sanctuary building would not physically divide an established community. Land uses along Boulevard Way include newer, two-story single-family homes, three-story apartment buildings, and commercial uses. There would be no division of the community by severing existing roads or connections between properties. Neither Project Variant would introduce any access changes to adjacent properties and would not disrupt or divide the existing fabric of the community.

Conflict with Land Use Plan, Policy, or Regulations

There are no specific plans or local coastal programs in effect for the project site.

The proposed sanctuary building is consistent with allowable uses in the operative County General Plan land use designation. The General Plan designates the entire project site as Single-Family Residential – High Density (SH). According to the General Plan, all residential classifications allow churches and other places of worship as

² FEMA Map 06013 C 0289F

secondary uses as they are “generally considered to be compatible” with residential development. Therefore, the proposed sanctuary building would be consistent with the General Plan land use designation.

As shown in **Table 4-9.1**, the proposed sanctuary building would be consistent with other pertinent policies of the County General Plan.

The proposed sanctuary building would conform to uses permitted by the zoning ordinance. Section 84-4.404 of the Zoning Ordinance in the Contra Costa County Ordinance Code allows for the use of religious facilities with the issuance of a land use permit within the R-10 Single Family Residential zoning district. The R-10 zoning district includes specific requirements pertaining to lot and building size. As shown in **Table 4.9-2**, the proposed sanctuary building would be consistent with all development standards of the R-10 zone district.

The Zoning Ordinance includes a Transportation Demand Management (TDM) chapter (Chapter 82-32), which establishes parking requirements for all land uses. Section 82-32.008 of the Chapter states that a project may qualify for a lower-than-required number of parking spaces, contingent on the County’s review and approval of a TDM program.

As described in **Chapter 3, Project Description**, the applicant submitted a TDM program with its application. As discussed in **Section 4.13, Traffic and Circulation**, the County has reviewed the proposed TDM program and has recommended several additional measures. The County will conduct a final review of the TDM program as it considers the proposal. County review and acceptance of a TDM program reducing the need for parking spaces would constitute compliance with the County parking ordinance.

Therefore, the proposed sanctuary building would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigation an environmental effect.

Conflict with Habitat Conservation Plan or Natural Community Conservation Plan

The closest Habitat Conservation Plan is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), whose closest boundary is located approximately 5 miles east of the project site across a highly urbanized area (the City of Walnut Creek). Therefore, development of the proposed sanctuary building would not conflict with any HCP.

Mineral Resources

There are no known mineral resources within the project area. The project site is currently developed with three single-family residences, accessory buildings, and a

property on 11 White Horse Court known as “the parsonage.” Urbanization of the project area has resulted in extensive excavation of topsoil, and it is unlikely that any valuable resources exist.

Noise

Exposure to Noise from a Public/Private Airport

The project site is not in the vicinity of a public airport or private airstrip and would therefore not be exposed to high noise levels from such sources. The closest airport to the project site is Buchanan Field Airport, located approximately 8 miles north of the project site. Therefore, there would be no exposure to noise from public or private airport facilities.

Population and Housing

Induce Substantial Population Growth

The proposed sanctuary building does not include the construction of new homes, and therefore would not directly affect population growth.

The proposed development does not include any new business development nor the extension of roads or other infrastructure, and would therefore not indirectly induce substantial population growth.

As described in **Chapter 3, Project Description** and **Appendix B**, the sanctuary building is sized to meet the needs of the current congregation, which has remained relatively stable at approximately 350 members for more than 20 years. The main prayer hall is designed to hold a maximum of 400 people to accommodate the needs of the current member base and their guests, and would not accommodate a substantially larger congregation.

Public Services

Fire Protection

The proposed sanctuary building would not result in the need to physically expand fire protection facilities since it would not increase population. County policy has established that new development shall pay its fair share of costs for fire protection facilities and services. The Project Variant ultimately selected will be subject to CCCFPD new development impact fees in accordance with the CCCFPD fee schedule. Therefore, no associated physical environmental impact would occur.

Police Protection

County policies regarding police protection discussed above set forth two measures of performance: 1) for every 1,000 residents of the unincorporated County, 155 square feet of sheriff office space is required; and 2) sheriff response time should be within 5 minutes for 90 percent of certain priority calls.

Neither Project Variant would have any effect on either of the performance measures above. No new population would be added and there is nothing about either Project Variant or associated public right-of-way improvements that would infringe on the ability of County Sheriff officers to promptly respond to a call on or near the project site. Therefore, the project would not result in the need to physically expand police facilities and thus no associated physical environmental impact would occur.

Schools

The proposed sanctuary building would be religious facility that does not include any new residential development. The need for school services is generally associated with increases in residential population since households within the county may contain school-aged children. Since the proposed sanctuary building would not result in a population increase, or a corresponding increase in school-aged children, there would be no impact to school facilities.

Parks

In Contra Costa County, open space, parks, and other similar public facilities are typically provided to serve residential populations. The proposed sanctuary building has no new residential development and therefore would not generate new demand for open space, parks, or other similar public facilities. Accordingly, there would be no need to expand such facilities and thus no associated physical impact.

Recreation

The proposed sanctuary building does not include any public recreational facilities nor would it require the construction or expansion of recreational facilities off site. The proposed religious facility does not include a residential component which could induce population or correspondingly increase demand on existing neighborhood/regional parks or other recreational facilities.

Traffic and Circulation

Conflict with Applicable Congestion Management Program

This impact discussion takes into consideration both a criterion from CEQA Appendix G as well as two of the three CCTA criteria for non-regional routes.

This discussion is equally applicable to Project Variant A and Project Variant B insofar as both scenarios generate an equivalent amount of traffic that would utilize local roadways.

The applicable congestion management program is CCTA's CMP, adopted in December 2009. As discussed in **subsection 4.13.2** above, pertinent components of the CMP involve the use of County-approved LOS standards and the requirement for preparation of traffic impact analyses for projects with the potential to increase traffic on County roadways.

Projected traffic falls beneath the GMP and CMP thresholds for preparation of a traffic impact analysis. Nonetheless, a traffic impact analysis comporting with County requirements has been prepared as part of this EIR. Moreover, the traffic impact analysis uses LOS standards as established by CCTA for the various roadway types potentially affected by the proposed sanctuary building. As further discussed below in **Impact 4.13-1**, the inclusion of proposed new traffic on top of existing traffic would not result in the degradation of LOS at any intersection or roadway to an unacceptable level.

Moreover, the CMP includes an element that encourages the reduction of use of single-occupant vehicles for travel on County roadways. To this end, the applicant has submitted a transportation demand management or TDM program. The TDM plan is submitted in part to justify a reduction in the amount of required on-site parking spaces. The TDM program includes but is not limited to the following components, all of which would reduce single-occupancy vehicle travel to the project site:

- A pledge from more than 160 members of the organization living in close proximity to the project site to always walk, bike, or carpool to major activities on the project site;
- A program of parking monitors that would limit parking to identified carpools;
- A shuttle service to a parking lot at the Meher Schools;
- On-site bicycle facilities.

In considering approval of the proposed sanctuary building, the County will also consider the TDM program. If approved, the County will include adherence to and monitoring of the TDM program as conditions of approval.

Therefore, there would be no conflict with the applicable congestion management program.

Effects to Air Traffic Patterns

This discussion is equally applicable to Project Variant A and Project Variant B.

The project site is surrounded by developed areas in all directions. The closest airport to the project site is Buchanan Field, located more than 8 miles away in the City of

Concord. Moreover, no known private use airstrips are located within 2 miles of the project site. Based on the project site's significant distance from public airports and private airstrips, the proposed use would not introduce any foreseeable hazards to aircraft or to people residing or working in the project area.

Emergency Access

Public right-of-way

As shown in **Figure 3-8**, Project Variant B includes the widening of the paved portion and shoulder of Boulevard Way in the project vicinity. The widening is not necessary to ensure adequate emergency access, and would not hinder emergency vehicle access in the project vicinity.

Neither Project Variant A nor Project Variant B includes any other substantial modifications to the public right-of-way that could possibly reduce or limit emergency access relative to existing conditions.

Private driveway

A private driveway off Warren Road provides secondary access to the site for emergency vehicles. The Contra Costa County Fire Protection District (CCCYPD), in a letter dated April 26, 2010 (**Appendix C**), requires provision of adequate space on the project site for a fire truck to turn around. A diagram attached to **Appendix C** demonstrates the plan includes adequate space for this fire truck turn-around. This aspect of the plan is the same in both Project Variants.

CCCYPD indicated that the private driveway was adequate at its present width to provide emergency access. Accordingly, emergency internal circulation considerations meet County standards.

However, CCCYPD has stipulated that if the adjacent Odell property were to be purchased by the applicant, the applicant would be required to expand the width of the private driveway to 20 feet to improve emergency access. This stipulation will be developed as a condition of approval. As further discussed in **Section 4.3, Biological Resources**, the potential future widening of this private driveway would require the removal of seven trees and lead to possible damage to other trees. Please see **Impact 4.3-1** and the associated mitigation measure for further detail.

Utilities and Service Systems

Wastewater Treatment Requirements

Wastewater generated by the proposed sanctuary building would originate from religious facility sources. No industrial-source wastewater would be generated. Sewer lines would be relocated onsite to accommodate for the underground portion of the

religious facility and no changes to the wastewater treatment plant would be required to treat the religious facility flows. Consequently, no impacts related to the Regional Water Quality Control Board's wastewater treatment requirements would be expected

Solid Waste

Construction Waste

Construction waste would be hauled to the Acme Landfill in Martinez.

The proposed development would be required to comply with County Ordinance 2004-16, which requires owners of all construction or demolition projects that are 5,000 square feet in size or greater to demonstrate that at least 50 percent of the construction and demolition debris generated on the jobsite are reused, recycled, or otherwise diverted.

In order to comply with Ordinance 2004-16, the applicant would be required as a condition of approval to prepare and submit a Debris Recovery Plan to the County's Department of Conservation and Development prior to the issuance of a building or demolition permit. The plan will address major materials generated by a construction project of this size, including brush and other vegetative material, dimensional lumber, metal scraps, cardboard, packaging, and plastic wrap, and shall address opportunities to recycle such materials or divert them away from the Landfill. Prior to final inspection, the applicant shall submit a Debris Recovery Report that demonstrates that at least 50 percent of jobsite debris was diverted from disposal by providing receipts or gate-tags from facilities or service providers used for recycling, reuse and disposal of jobsite debris. The proposed development would be required to comply with all applicable regulations related to solid waste and this impact would be less than significant.

The Acme Landfill is currently at 35 percent of its permitted capacity.³ Construction of the proposed sanctuary building would not result in a net increase of solid waste that would exceed the capacity of the Acme Landfill. Furthermore, neither Project Variant would result in the generation of unique types of solid waste that would conflict with existing regulations applicable to solid waste disposal. No mitigation is required.

Operational Waste

CalRecycle does not have a standard generation rate for religious facilities, nor has CalRecycle published any waste disposal or generation rates that are comparable to proposed religious facility.

CalRecycle publishes both residential and business disposal rates. The former are based on rates observed in various regions of the state. The latter are based on studies

³ <http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=7&FACID=07-AA-0002>. Accessed March 10, 2011.

completed by CalRecycle and are sorted by industry type. In the absence of a rate of disposal for religious uses, a reasonably comparable business rate was identified. Accordingly, a disposal rate for service/educational uses is used here, insofar as it is the best-available data to use in this analysis.

CalRecycle assumes a disposal rate of 0.8 tons of waste per year per employee. For the sake of this analysis, a total of 25 employees is assumed, corresponding with the estimated daily number of people expected to conduct various ancillary activities at the project site (see **Table 3-1 in Chapter 3, Project Description**). Under this assumption, the proposed sanctuary building would generate about 20 tons of waste per year (or 0.05 tons per day – 109 pounds per day).

The receiving landfill for operational waste, Keller Canyon, is at 15 percent of its permitted capacity and is permitted to remain in operation through December 31, 2030. The landfill is permitted to accept 3,500 tons of waste per day. The incremental addition of 0.05 tons per day is well within the capacity of this facility.

7.2 SIGNIFICANT UNAVOIDABLE IMPACTS

CEQA Guidelines section 15126.2(b) requires that the EIR discuss "significant environmental effects which cannot be avoided if the proposed project is implemented." Significant unavoidable impacts are those that would not be reduced to less-than-significant levels by the mitigation measures recommended in this EIR.

No such impacts were identified in this EIR. Mitigation is provided for all identified impacts, reducing all potential impacts to a less-than-significant level.

7.3 SIGNIFICANT IRREVERSIBLE IMPACTS

CEQA Section 15126.2(c) requires that an EIR discuss any environmental changes that would be irreversible if a project were implemented. CEQA defines irreversible environmental changes as the irretrievable commitment of resources and/or irreversible damage resulting from environmental accidents. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth inducing impacts that commit future generations to similar uses. The CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations to specific uses; irreversible changes from environmental actions; and consumption of non-renewable resources.

7.3.1 Changes in Land Use Which Would Commit Future Generations

The project site is located in the Saranap neighborhood within an unincorporated area of Contra Costa County. Currently developed for residential uses, the Contra Costa County General Plan designates the entire project site as Single-Family Residential – High Density (SH). According to the County General Plan, churches and other similar places of worship are considered allowable secondary uses, as religious facilities are “generally considered to be compatible” with single-family residential uses.

As the project area is currently developed for residential uses, development of the proposed sanctuary building would maintain the urbanized landscape in this portion of the area. The proposed sanctuary building would not commit future generations to or introduce changes in land use that would vary widely from the existing urban context.

7.3.2 Irreversible Changes from Environmental Actions

The proposal involves the construction and operation of a sanctuary building on approximately 3 acres in the unincorporated Saranap neighborhood of Contra Costa County. The commitment of nonrenewable resources, such as fossil fuels, necessary for construction and operation of the proposed building, would be irreversible.

7.3.3 Consumption of Nonrenewable Resources

Construction and operation of the proposed sanctuary building would require the consumption of nonrenewable resources, such as electricity, natural gas and petroleum products, and construction materials. The proposed sanctuary building would consume fewer energy resources than a comparably sized building, due to such features as the “cool” light-colored roof and the substantial undergrounded portion. The proposed building’s HVAC system would use approximately 50 percent of the energy that would be required for an above ground development of the same size.

7.4 GROWTH INDUCEMENT

CEQA requires a discussion of the ways in which a project could be growth inducing. The CEQA Guidelines Section 15126.2(d) identify a project as growth inducing if it would “foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” The CEQA Guidelines do not provide specific criteria for evaluating growth inducement and state that growth in any area is “necessarily beneficial, detrimental, or of little significance to the environment.” CEQA does not require separate mitigation for growth inducement as it is assumed that

these impacts are already captured in the analysis of environmental impacts (**Chapter 4** of this draft EIR). Furthermore, the CEQA Guidelines require that an EIR “discuss the ways” a project could be growth inducing and to “discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment.”

According to the CEQA Guidelines, a project would have potential to induce growth if it would:

- Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or General Plan land use designation.
- Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

In general, a project could be considered growth inducing if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way. However, the CEQA Guidelines do not require a prediction or speculation of where, when, and in what form such growth would occur.⁴

7.4.1 Economic, Population, and Housing Growth

Typically, the growth inducing potential of a project is considered significant if it fosters growth or a concentration of population in a different location or in excess of what is assumed in pertinent general plans or land use plans, or projections made by regional planning agencies, such as the Association of Bay Area Governments (ABAG). **Section 4.11, Population and Housing**, addresses the direct population growth as a result of the sanctuary building development on the project site. The proposed sanctuary building does not include the construction of new homes or businesses, and there would therefore be no substantial economic, population, or housing growth.

As described in **Chapter 3, Project Description** and **Appendix B**, the proposed sanctuary building is sized to meet the needs of the current congregation, which has remained relatively stable at approximately 350 members for more than 20 years. The main prayer hall, is designed to hold a maximum of 400 people to accommodate the needs of the current member base, and would not accommodate a substantially larger congregation. Therefore, the proposed sanctuary building would not result in substantial population growth in the project vicinity.

⁴ CEQA Guidelines, Section 15145.

Once the proposed sanctuary building is complete, the applicant's existing facility at 1300 Boulevard Way would allow a new entity to occupy that space. Occupation of the existing facility could create new jobs, however, it is unknown what type of business or organization would occupy that space. Furthermore, potential indirect growth resulting from future employment opportunities would be minimal due to the relatively small size of the existing facility. Notwithstanding, any new use at the 1300 Boulevard Way facility is subject to standard County review procedures.

Construction would result in a short-term increase in construction related job opportunities in the Contra Costa County area. However, construction workers can be expected to be drawn from the existing construction employment labor force, as construction of new development occurs throughout the County and within surrounding cities. Therefore, opportunities provided by construction of the project area would not likely result in the relocation of construction workers to the project region. Therefore, the employment opportunities provided by construction are not anticipated to induce indirect growth in the region.

7.4.2 Precedent-Setting Action

Development of the project site would not require a general plan amendment or a rezoning. The Contra Costa County General Plan designates the entire project site as Single-Family Residential – High Density (SH). According to the County General Plan, churches and other similar places of worship are considered allowable secondary uses, as religious facilities are “generally considered to be compatible” with single-family residential uses.

The Contra Costa County Zoning Map designates the entire site as Single-Family Residential (R-10). The Contra Costa County Zoning Ordinance states that religious uses are allowable in the R-10 zoning district with the issuance of a land use permit. Therefore, the proposed sanctuary building is consistent with the both the General Plan and Zoning Ordinance.

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9.0 LIST OF PREPARERS

Table 9-1 presents the organizations and individuals involved in the preparation of this Draft EIR.

Table 9-1 List of Preparers of the Draft EIR

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