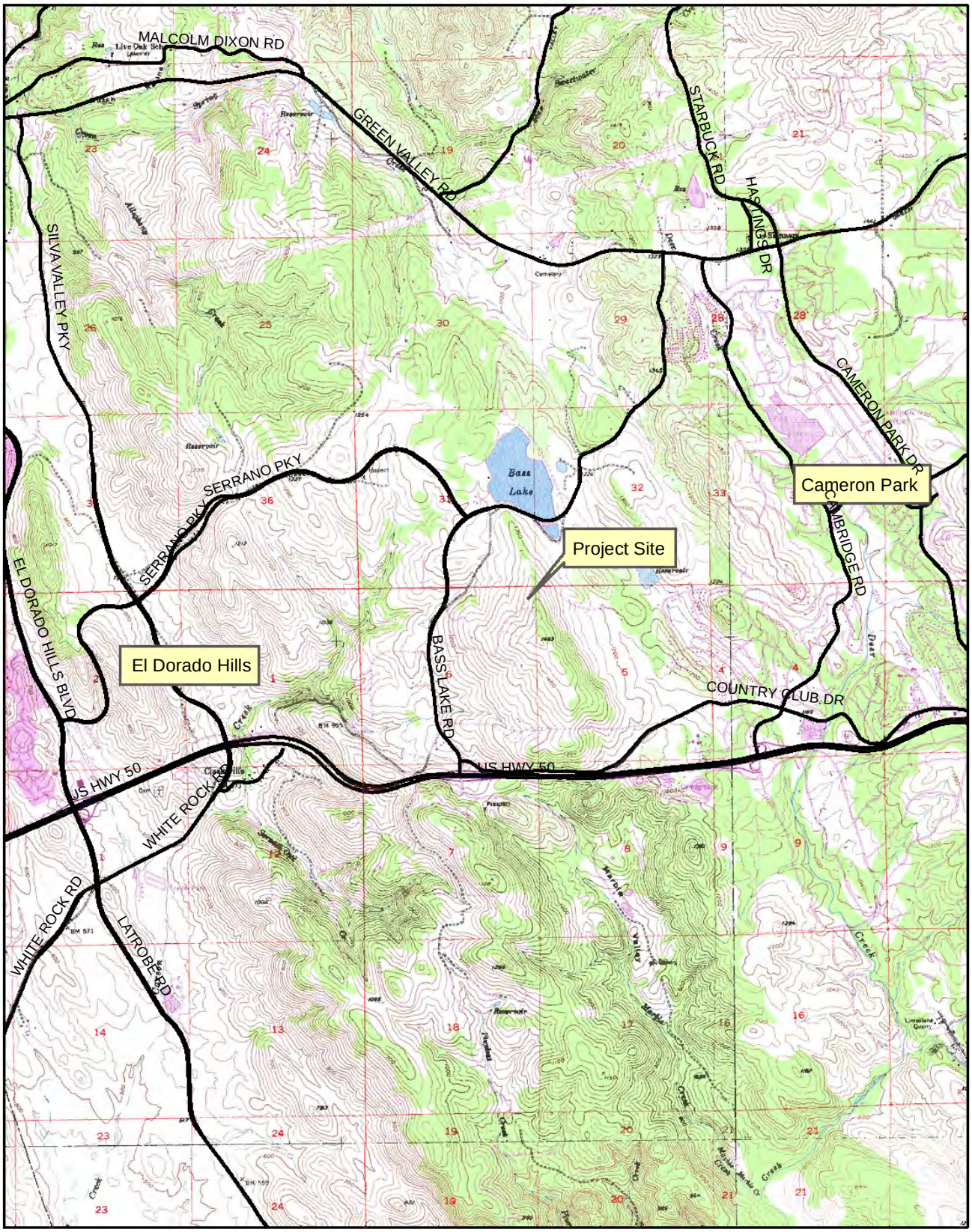


TM05-1402/PD05-0015/Z05-0018/Cheplick
Location Map
Exhibit A

N

0 0.5 1 2 Miles

POR. SECS. 5 & 6, T.9N., R.9E., M.D.M.

119:09

N

1 " = 400 '

Bk 115 Pg 04

Bk 115 Pg 40

Bk 115 Pg 25

Bk 115 Pg 28

HAWK VIEW RD

599.49'

1386.38'

878.38'

508.00'

2658.45'

RYE C

WALDWICK CIR

BIRMINGHAM C

Bk

P 10

392.41'

338.30'

1135.18'

1277.18'

939.67'

1040.85'

894.53'

309.66'

328.25'

164.91'

517.58'

163.93'

354.10'

PM 1/96/1
4
10.0 A

PM 1/96/2
3
10.0 A

PM 1/96/3
2
10.0 A

PPM 1/96/4
37
8.641 A

PPM 13/22/C
68
8.822 A

PPM 13/22/B
55
9.987 A

PPM 13/22/A
53
9.743 A

59

PPM 13/22/C, 1.178 A

69

SADDLEBACK DR

233.70'

PPM 17/1/C
45
9.095 A

HOLLOW OAK DR

249.25'

PPM 17/1/B
NA 47
9.192 A

799.87'

P 37

HOLLOW OAK DR

P 34

SAMUEL WAY

P 35

P 36

336.00'

404.74'

940.72'

PPM 13/22/D
57
9.583 A

PPM 4/143/D
59
9.583 A

CRYSTAL VIEW DR

525.74'

532.63'

231.50'

681.36'

562.71'

PM 17/1/A
23
10.0 A

722.85'

61
9.654 A

514.27'

757.00'

67
9.008 A

PM 11/137/D
74

51

HOLLOW OAK DR

PPM 4/143/A
51
8.542 A

585.73'

670.73'

PM 4/143/B
19
10.005 A

807.34'

PM 4/143/C
21
10.01 A

492.50'

724.00'

P 07

COVELLO CIR

BOCANA RD

ALCADAR CT

CASTANA DR

AVENTINE RD

ABRUJO RD

P 16

P 18

PAVONIA C

P 15

P 02

P 06

P 17

MONTERO RD

P 05

P 14

P 13

343.00'

NA 75

51

ILVER DOVE WAY

PPM 11/137/B
71
9.208 A

PPM 11/137/C
65
9.589 A

74
10.0 A

1314.98'

1318.41'

798.67'

372.26'

ANGELS VIEW

304.72'

251.92'

RS 19/39/1
31
10.0 A

494.83'

656.56'

435.41'

221.15'

RS 19/39/2
32
10.0 A

RS 19/39/3
30
10.0 A

RS 19/39/4
29
10.0 A

1055.71'

1037.64'

590.13'

653.82'

653.33'

541.36'

438.07'

750.08'

312.01'

658.30'

413.49'

437.83'

380.84'

1232.16'

BASS LAKE RD

P 08

THIS MAP IS NOT A SURVEY, it is prepared by the El Dorado Co. Assessor's office for assessment purposes only. Area calculations and characteristics are not guaranteed. Users should verify items such as dimensions and acreage.

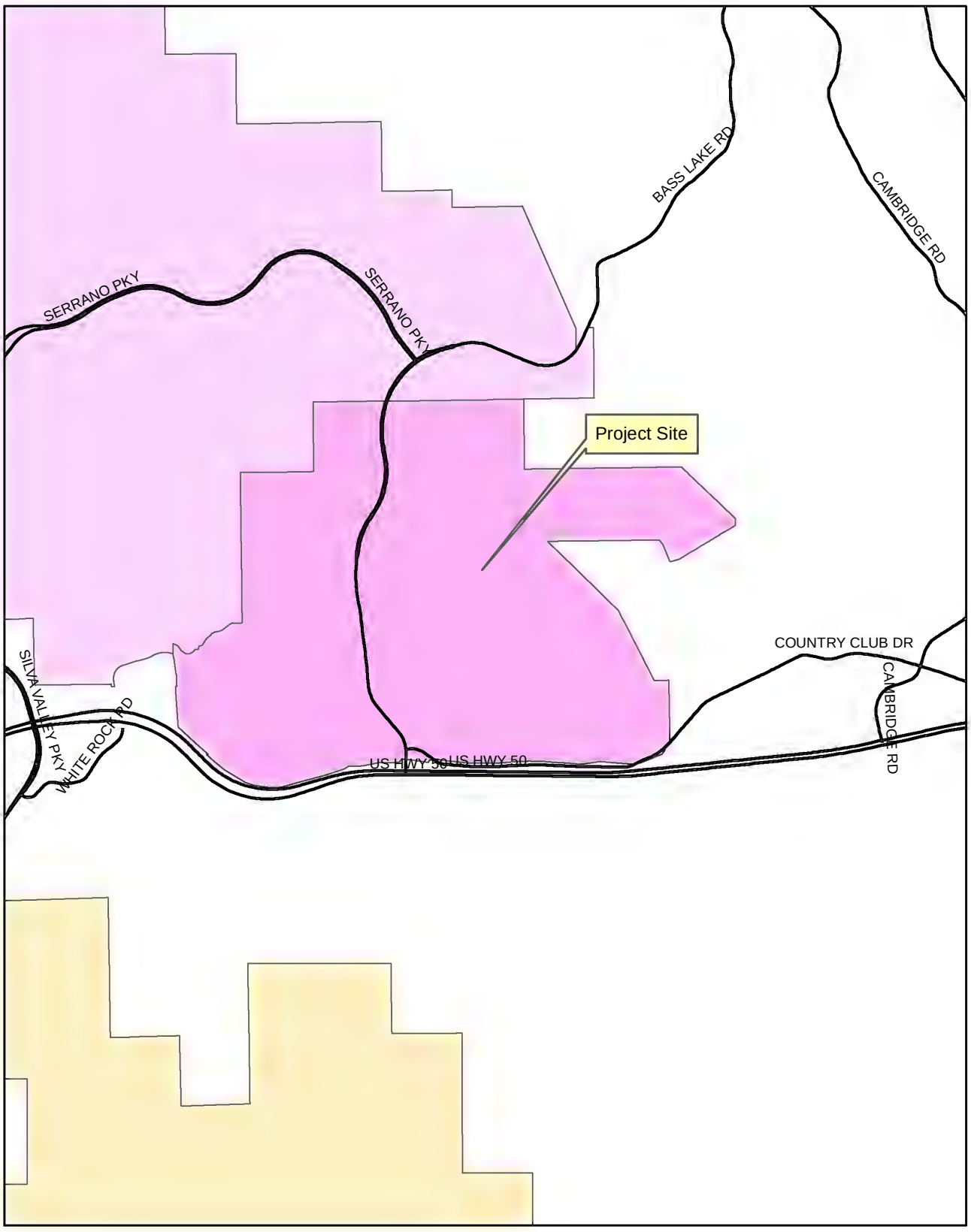
Acreages Are Estimates

Adjacent Map Pages Shown in Grey Text
Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

TM05-1402/PD05-0015/Z05-0018/Cheplick
Assessor's Parcel Map
Exhibit B

Rev. July 28, 2017

Assessor's Map Bk. 119, Pg. 09
County of El Dorado, CA

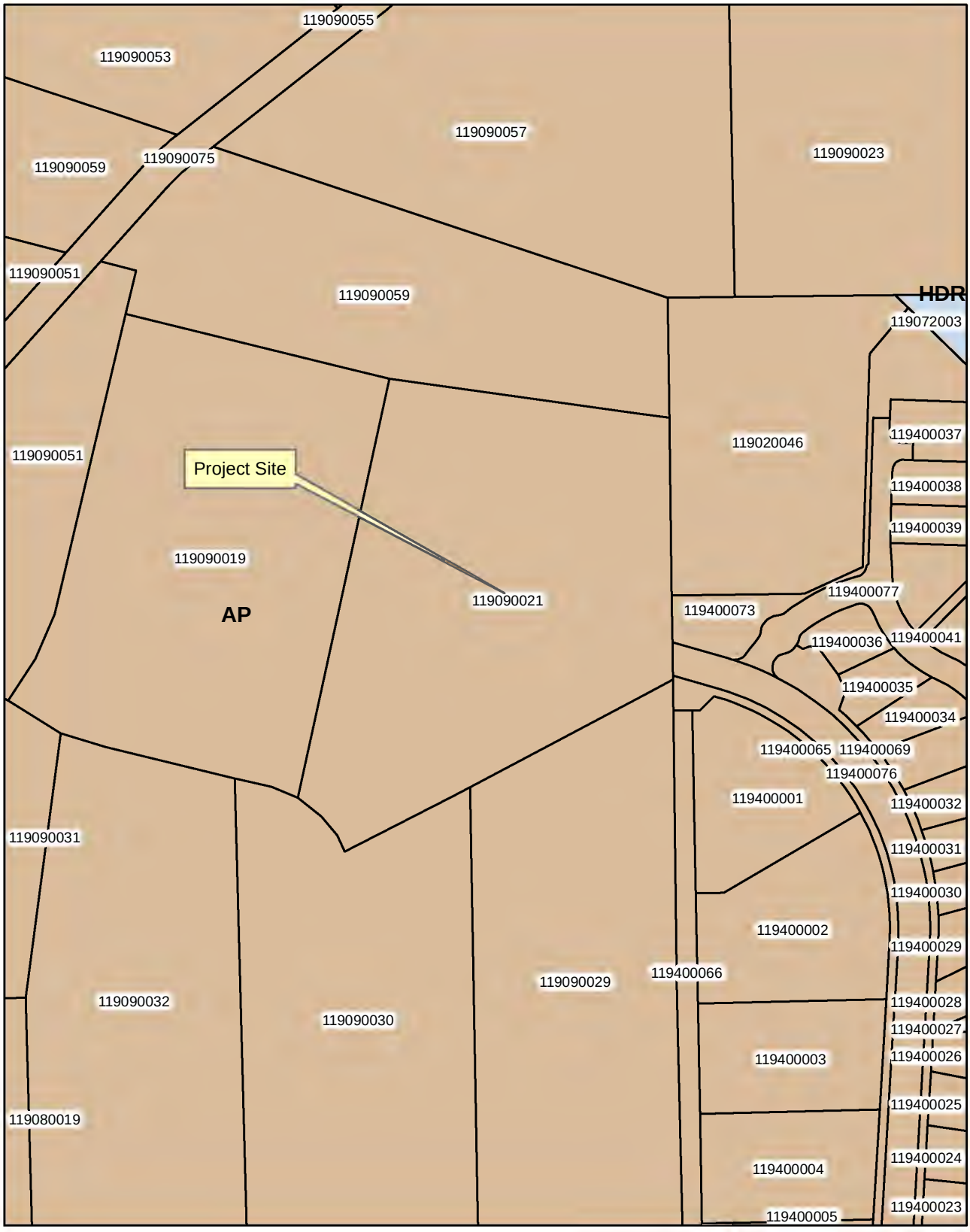


TM05-1402/PD05-0015/Z05-0018/Cheplick
BLHSP Area Map
Exhibit C

BLH
SEDH
VV

N

0 0.325 0.65 1.3 Miles



TM05-1402/PD05-0015/Z05-0018/Cheplick
General Plan Land Use Map
Exhibit D

N

AP
HDR

0 0.0325 0.065 0.13 Miles

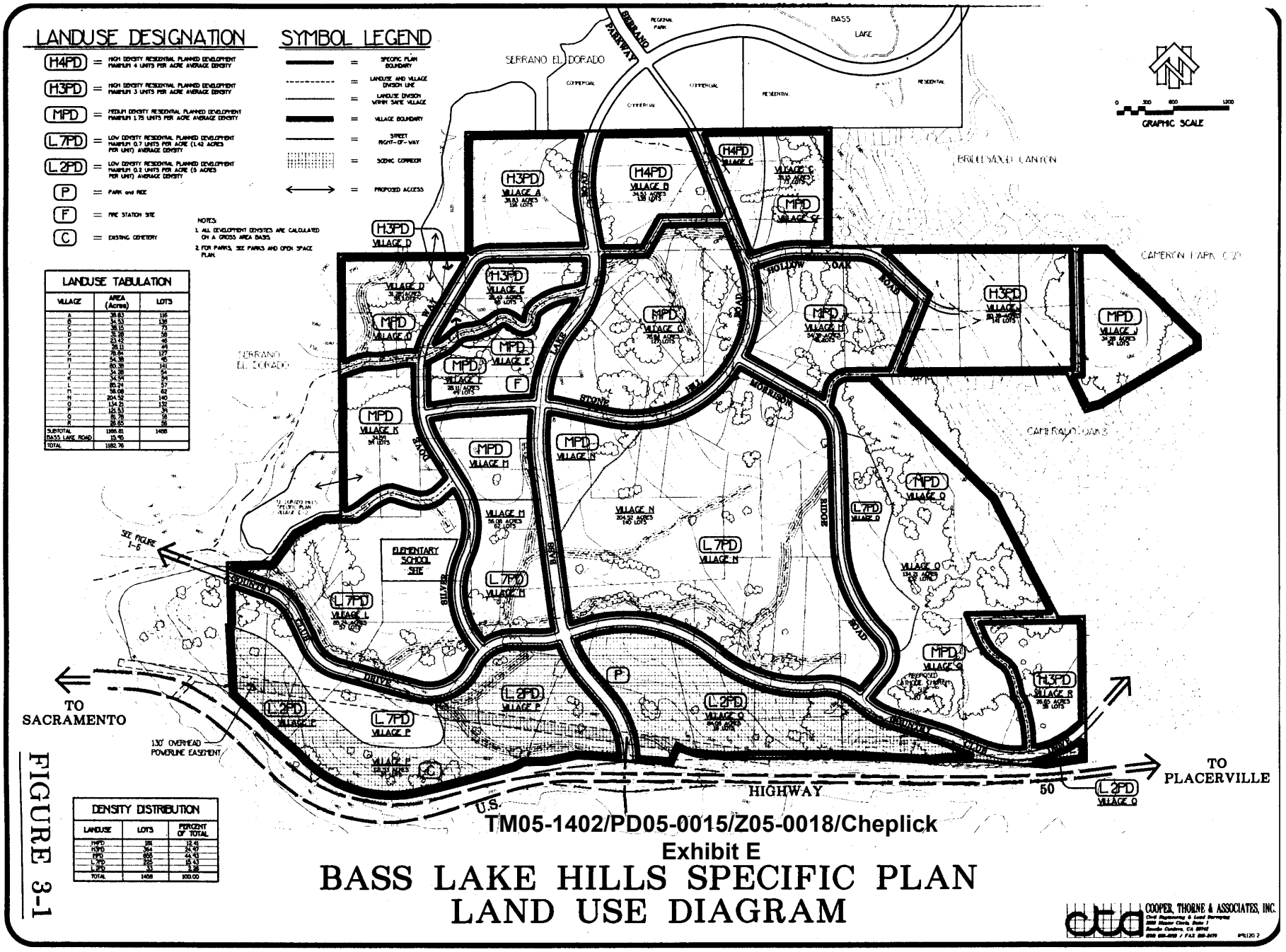
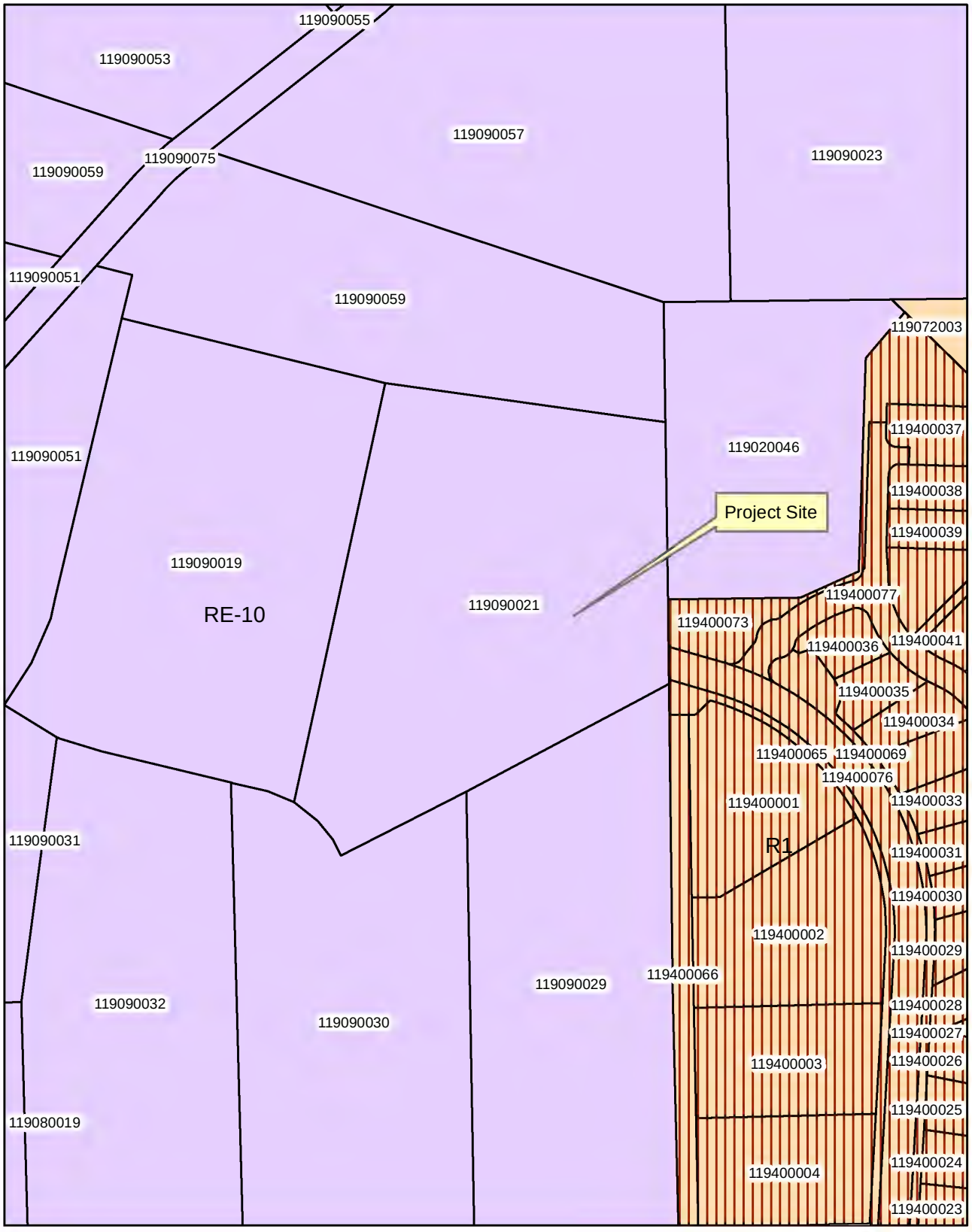


FIGURE 3-1

TM05-1402/PD05-0015/Z05-0018/Cheplick
Exhibit E

BASS LAKE HILLS SPECIFIC PLAN
LAND USE DIAGRAM

COOPER, THORNE & ASSOCIATES, INC.

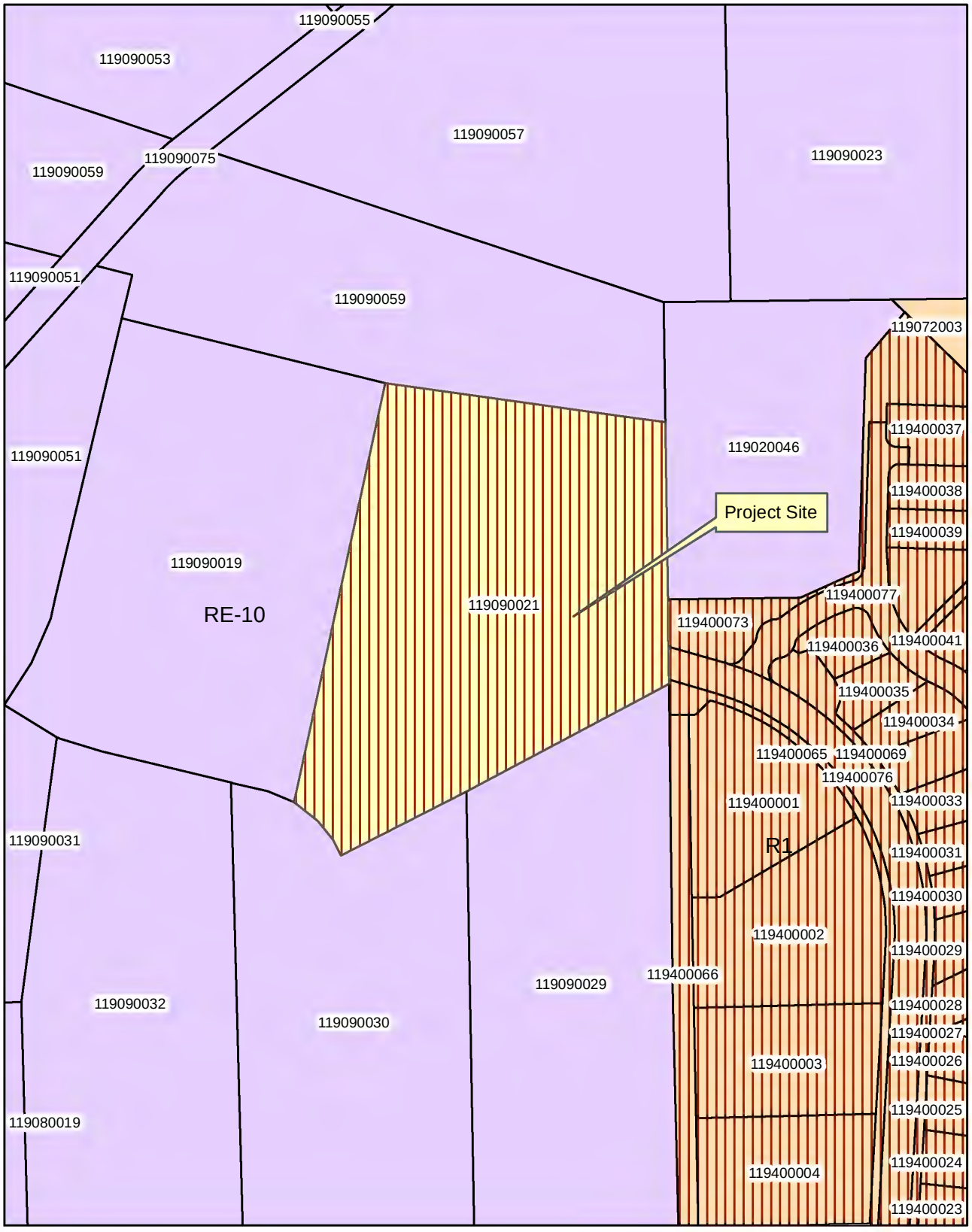


TM05-1402/PD05-0015/Z05-0018/Cheplick
Current Zoning Map
Exhibit F

N

PD
R1
RE-10

0 0.025 0.05 0.1 Miles

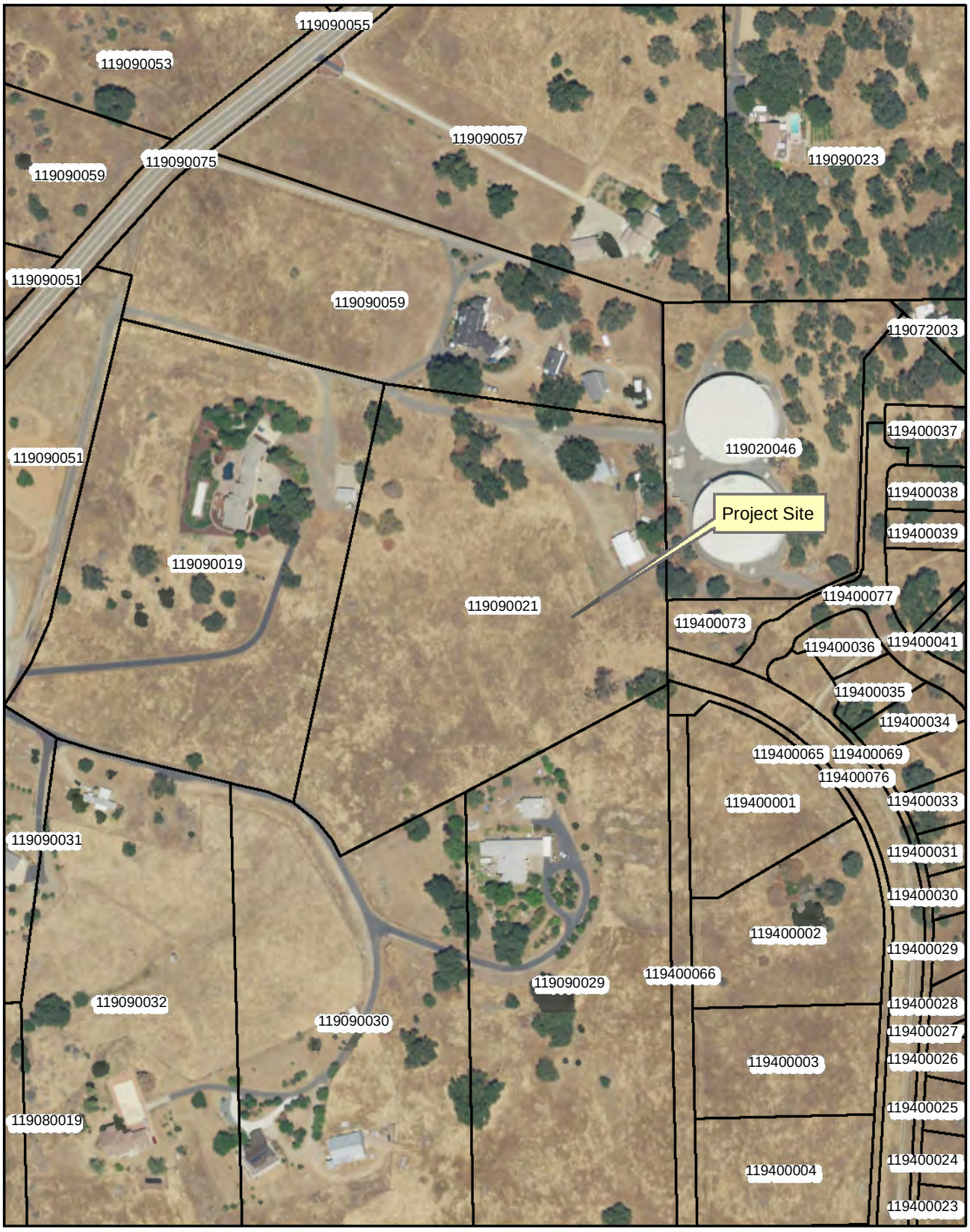


TM05-1402/PD05-0015/Z05-0018/Cheplick
Proposed Zoning Map
Exhibit G

R1A
PD
R1
RE-10

N

0 0.025 0.05 0.1 Miles



TM05-1402/PD05-0015/Z05-0018/Cheplick Tentative Map
Aerial Map
Exhibit H

N

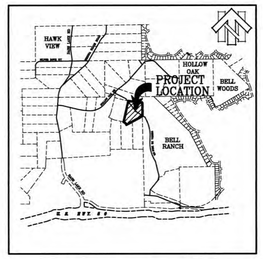
0 0.025 0.05 0.1 Miles

TENTATIVE MAP
CHEPLICK PROPERTY
A PORTION OF BASS LAKE HILLS SPECIFIC PLAN
COUNTY OF EL DORADO, CALIFORNIA

SCALE: 1" = 40' MAY 2022

cta Engineering & Surveying
Civil Engineering ▪ Land Surveying ▪ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 ▪ F (916) 638-2479 ▪ www.ctaes.net

SCALE: 1"=40'



VICINITY MAP
NOT TO SCALE

OWNERS OF RECORD
WALLY CHEPLICK
2861 TIERRA DE DIOS DRIVE
EL DORADO HILLS, CA 95762

NAME OF APPLICANT
WALLY CHEPLICK
2861 TIERRA DE DIOS DRIVE
EL DORADO HILLS, CA 95762

MAP PREPARED BY
cta Engineering & Surveying
Civil Engineering ▪ Land Surveying ▪ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95747
T (916) 638-0919 ▪ F (916) 638-2479 ▪ www.ctaes.net

MAP SCALE
1" = 40'

CONTOUR INTERVAL
CONTOUR INTERVAL = 2 FOOT

SOURCE OF TOPOGRAPHY
AERIAL PHOTOGRAPHY

SECTION, TOWNSHIP and RANGE
A PORTION OF SECTION 6, T. 9 N., R. 9 E., M.D.M.

ASSESSOR'S PARCEL NUMBER
119-090-21-100

EXISTING LAND USE
ADOPTED PLAN (AP)
PER BASS LAKE HILLS SPECIFIC PLAN

EXISTING / PROPOSED ZONING
RE-10 / R1A PD

TOTAL AREA
10.00 ACRES

TOTAL NO. of LOTS
5 SINGLE FAMILY RESIDENTIAL LOTS
2 LANDSCAPE LOTS
RIGHT OF WAY - TIERRA DE DIOS DRIVE
7 TOTAL LOTS

MINIMUM RESIDENTIAL LOT AREA
53,234 SQUARE FEET (1.22 AC)

MAXIMUM RESIDENTIAL LOT AREA
133,707 SQUARE FEET (3.06 AC)

LOT ACREAGE BREAKDOWN
SINGLE FAMILY LOTS = 8.3 AC
LANDSCAPE LOTS = 0.6 AC
PRIMARY LOCAL ROAD = 1.1 AC (TIERRA DE DIOS DRIVE)

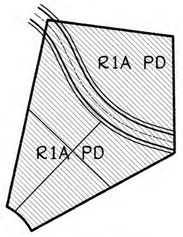
WATER SUPPLY & SEWAGE DISPOSAL
EL DORADO IRRIGATION DISTRICT

PROPOSED STRUCTURAL FIRE PROTECTION
EL DORADO HILLS COUNTY WATER DISTRICT (FIRE DEPARTMENT)

DATE OF PREPARATION:
MAY 2022

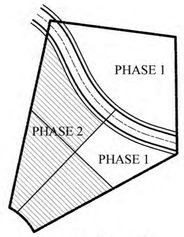
PHASING PLAN NOTICE
THE FILING OF MULTIPLE FINAL MAPS MAY BE COMPLETED FOR THIS PROJECT. THIS PHASING PLAN IS APPROXIMATE ONLY AND BY PROVIDING THIS NOTICE, THE SUBDIVIDER SHALL NOT BE REQUIRED TO DEFINE THE NUMBER OR CONFIGURATION OF THE PROPOSED MULTIPLE FINAL MAPS. (PER THE SUBDIVISION MAP ACT, 2002 EDITION, SECTION 66456.1)

LEGEND
- EXISTING TREES
- ROCK OUTCROP
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- 10% — DIRECTION OF STREET GRADE
- 1415.2 HP — FINISH GRADE
- 15-20' DRAINAGE EASEMENT
- SET BACK LINE
- BOUNDARY
- (E) LOT LINES
- (E) RW
- LOT LINE

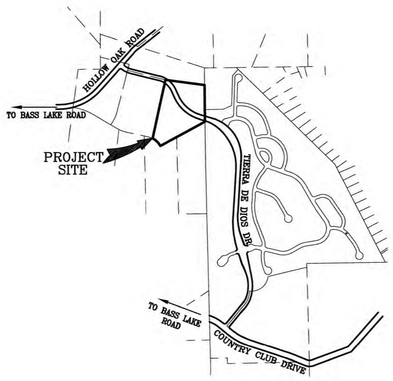


ZONING PLAN
1"=250'

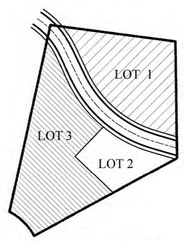
LOT #	NET AREA
1	84,239 SF (1.93 AC)
2	27,704 SF (0.64 AC)
3	39,013 SF (0.90 AC)
4	31,803 SF (0.73 AC)
5	33,467 SF (0.77 AC)



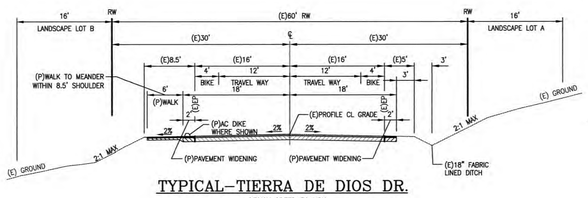
PHASING PLAN
1"=250'



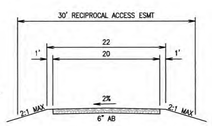
CIRCULATION PLAN
1"=800'



LARGE LOT PLAN
1"=250'
(LOT 1 IS CURRENTLY OCCUPIED)



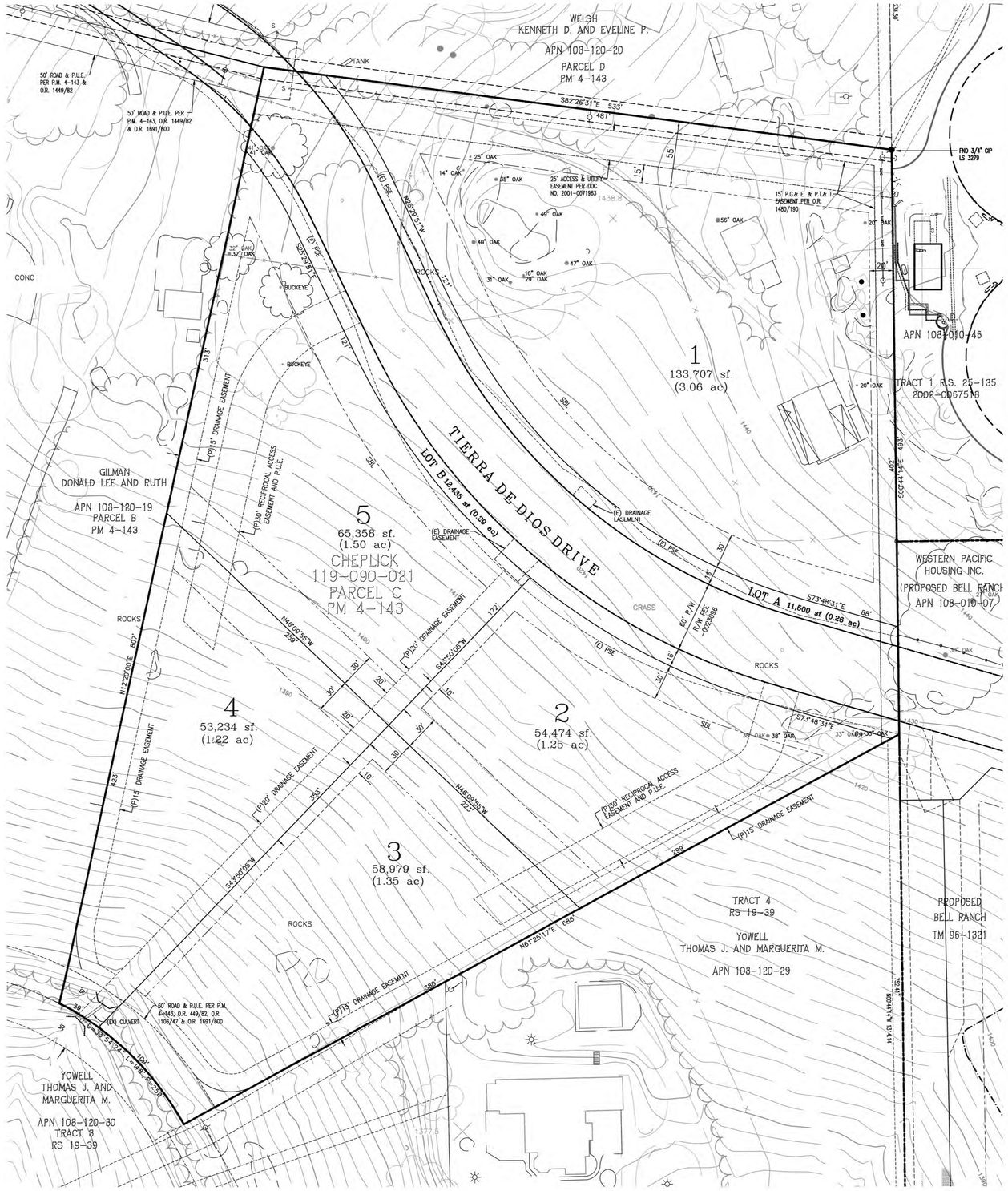
TYPICAL-TIERRA DE DIOS DR.
DESIGN SPEED 30 MPH
SCALE: 1"=10'
(PRIMARY LOCAL ROAD -- LESS THAN OR EQUAL TO ONE ACRE MINIMUM DENSITY)



TYPICAL SECTION
EVA ROAD
SCALE: 1"=10'

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THE LAND DEVELOPMENT KNOWN AS CHEPLICK PROPERTY HAS BEEN DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS AND GUIDELINES ESTABLISHED BY THE COUNTY OF EL DORADO.

5-6-2022
DAVID R. CROSARIOL P.E. 34520 DATE



PLANNING COMMISSION:	
APPROVAL/DENIAL DATE:	
BOARD OF SUPERVISORS:	
APPROVAL/DENIAL DATE:	

Exhibit I **TM05-1402/PD05-0015/Z05-0018/Cheplick**

M:\19-149-001\PLANNING\TENTATIVE MAP\19-149-001-TM.dwg, 5/6/2022 2:21:46 PM, rfurrow, 1:1

El Dorado Irrigation District

Letter No.: DS0320-059

March 6, 2020

VIA FIRST-CLASS MAIL

Wally Cheplick
3026 Crystal View Drive
El Dorado Hills, CA 95762
Email: wallycheplick1@gmail.com

Subject: Facility Improvement Letter (FIL) 3211FIL, Cheplick Parcel 59 BLHSP **-Annexation**
Assessor's Parcel No. 119-090-021 (Outside)

Dear Mr. Cheplick,

This letter is in response to your request dated January 31, 2020 and is valid for a period of three years. If facility improvement plans for your project are not submitted to El Dorado Irrigation District (EID or District) within three years of the date of this letter, a new FIL will be required.

Design drawings for your project must be in conformance with the District's *Water, Sewer, and Recycled Water Design and Construction Standards*.

This proposed project is a 6-lot residential subdivision on 10.01 acres. Water service, sewer service, and fire hydrants are requested. The property is **not** within the District boundary and will require annexation before service can be obtained.

This letter is not a commitment to serve, but does address the location and approximate capacity of existing facilities that may be available to serve your project.

Water Supply
As of January 1, 2019, there were approximately 22,162 equivalent dwelling units (EDUs) of water supply available in the Western/Eastern Water Supply Region. Your project as proposed on this date would require 6 EDUs of water supply.

Water Facilities
A 36-inch water line and a 12-inch water line are located near the northern parcel boundary of the property to be developed. The Bell Ranch Unit 1 subdivision project is in the process of constructing water facilities, including a 12-inch water line in the recently constructed Morrison Road. The Bell Ranch developer is also constructing the Bell Ranch Water Booster Station within the fence line of the tank site that will boost the pressure to the 12-inch lines.

The El Dorado Hills Fire Department has determined that the minimum fire flow for this project is 1,000 GPM for a 2-hour duration while maintaining a 20-psi residual pressure. In order to provide this fire flow and receive service, you must construct a looped water line extension connecting to the 12-inch water lines previously identified.

The elevations of the existing tanks are not high enough to provide sufficient gravity pressure to serve the proposed subdivision. The Bass Lake Water Booster station and proposed water lines for Bell Ranch Unit 1 will need to be completed and in service before this project can receive service. In addition to payment of current EID Facility Capacity Charges (FCCs), the project may be subject to payment of reimbursement (through EID) to the Developer that funded and constructed the Bell Ranch Unit 1 improvements and the Bell Ranch Water Booster Station that are required to serve your project. At this time there currently is no reimbursement agreement between EID and the Developer in place, but such an agreement may be established prior to the Cheplick parcel purchasing service.

The hydraulic grade line of the future boosted water distribution facilities is anticipated to be 1,590 feet above mean sea level at static conditions, and 1,521 feet above mean sea level during fire flow (1,500 GPM) and maximum day demands. The flow predicted above was developed using a computer model and is not an actual field flow test.

Sewer Facilities

The Bell Ranch Unit 1 project is in the process of constructing a 6-inch gravity sewer line that will be located near the southeast corner of your parcel in Morrison Road. These facilities will have available capacity to serve the proposed subdivision. Your project will most likely be required to construct a sewer force main with individual private pumped sewer services for each of the newly created lots. In addition to payment of FCCS, you may be required to pay reimbursement to the Developer of the Bell Ranch Unit 1 project associated with their construction of sewer facilities that would serve your project. Your project as proposed on this date would require 6 EDUs of sewer service.

Easement Requirements

Proposed water lines, sewer lines and related facilities must be located within an easement accessible by conventional maintenance vehicles. When the water lines or waste water lines are within streets, they shall be located within the paved section of the roadway. No structures will be permitted within the easements of any existing or proposed facilities. The District must have unobstructed access to these easements at all times, and does not generally allow water or waste water facilities along lot lines.

Easements for any new District facilities constructed by this project must be granted to the District prior to District approval of water and/or waste water improvement plans, whether

on-site or off-site. In addition, due to either nonexistent or prescriptive easements for some older facilities, any existing on-site District facilities that will remain in place after the development of this property must also have an easement granted to the District.

Environmental

The County is the lead agency for environmental review of this project per Section 15051 of the California Environmental Quality Act Guidelines (CEQA). The County's environmental document should include a review of both off-site and on-site water and sewer facilities that may be constructed by this project. You may be requested to submit a copy of the County's environmental document to the District if your project involves significant off-site facilities. If the County's environmental document does not address all water and waste water facilities and they are not exempt from environmental review, a supplemental environmental document will be required. This document would be prepared by a consultant. It could require several months to prepare and you would be responsible for its cost.

Annexation

The applicant is charged for all costs associated with the annexation proposal. A preliminary cost benefit analysis has been completed. This project as currently defined will not have a negative financial impact on the District. Please contact Development Services regarding the annexation process.

Summary

Service to this proposed development is contingent upon the following:

- Annexation approval from the District's Board of Directors and El Dorado County Local Agency Formation Commission;
- Payment of District Annexation Impact Fee (Contact Development Services for fee calculation);
- Inclusion of lands into the District's service area from the United States Department of the Interior Bureau of Reclamation (Contact Development Services for more information);
- The availability of uncommitted water supplies at the time service is requested;
- Approval of the County's environmental document by the District (if requested);
- Approval of an extension of facilities application by the District;
- Approval of facility improvement plans by the District;
- Construction by the developer of all on-site and off-site proposed water and sewer facilities;
- Acceptance of these facilities by the District;
- Payment of all District connection costs; and
- Payment of any applicable reimbursement agreements.

Services shall be provided in accordance with El Dorado Irrigation District Board Policies and Administrative Regulations, as amended from time-to-time. As they relate to conditions of and fees for extension of service, District Administrative Regulations will apply as of the date of a fully executed Extension of Facilities Agreement.

If you have any questions, please contact me at (530) 642-4054.

Sincerely,

Mike Brink, P.E.
Supervising Civil Engineer

MB/MM:kh

Enclosures: System Map

cc w/ System Map:

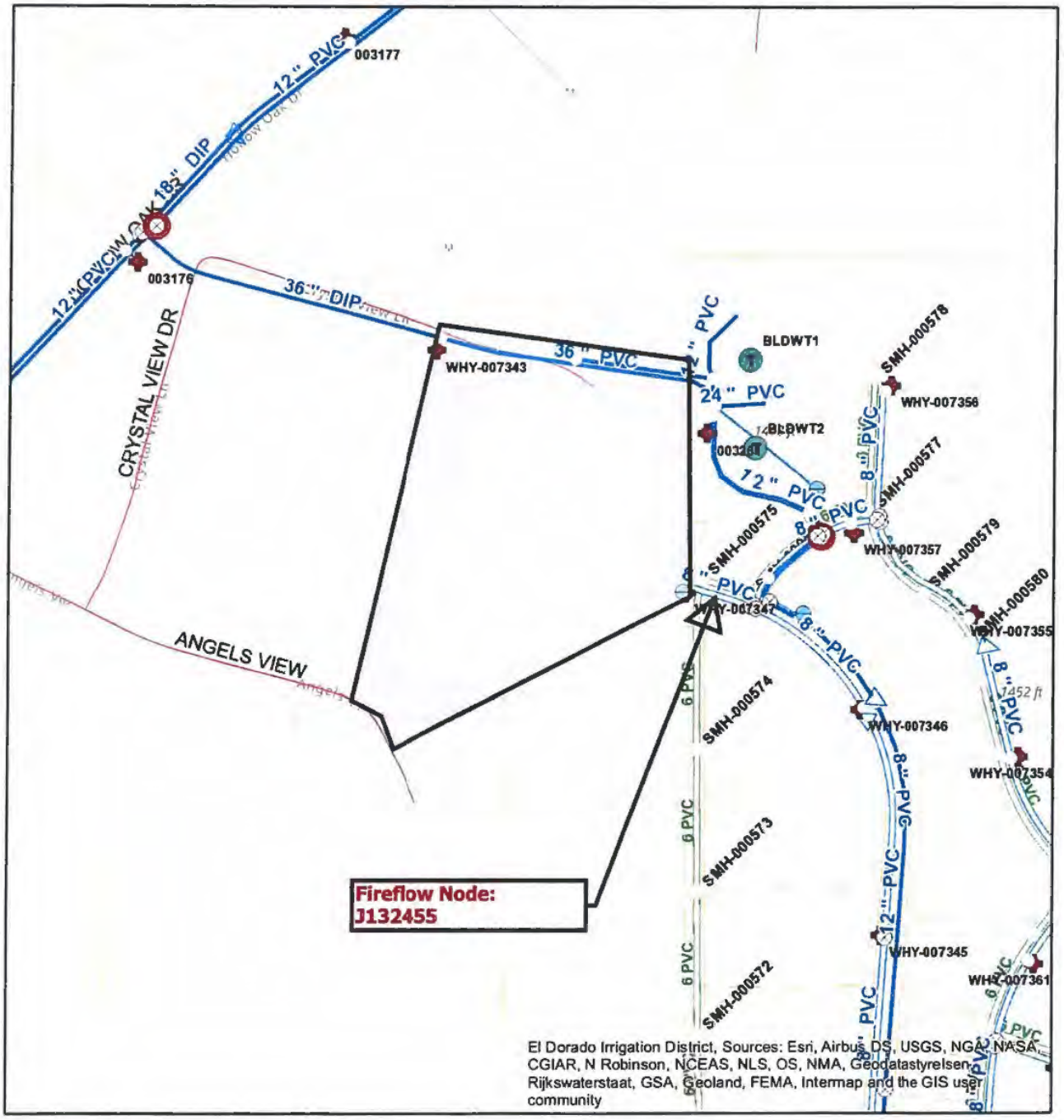
Tiffany Schmid, Director
El Dorado County Development Services Department
Via email - tiffany.schmid@edcgov.us

David Crosariol, President
CTA Engineering & Surveying
Via Email - dcrosariol@ctaes.net

José C. Henríquez, Executive Officer
El Dorado County LAFCO
Via email - jhenriquez@edlafco.us

Marshall Cox, Fire Marshal
El Dorado Hills Fire Department
Via email - mcox@edhfire.com

ArcGIS Web Map



Date: March 5, 2020

Project: Cheplick Parcel 59
BLHSP-Annexation

APN: 119-090-021

Author: Web AppBuilder for ArcGIS
Print date: March 2, 2020

WARNING: No accuracy of map implied until field checked by EID. Exact pipe locations must be field verified.

Web AppBuilder for ArcGIS
Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed February, 2020. | El Dorado Irrigation District |

DRAFT

SCH#90020375

BASS LAKE ROAD STUDY AREA

PROGRAM ENVIRONMENTAL IMPACT REPORT

Prepared For
County of El Dorado

June 14, 1991

Prepared By
R. C. Fuller Associates
5908 Fair Oaks Boulevard
Carmichael, California 95608

TM05-1402/PD05-0015/Z05-0018/Cheplick
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5. FISCAL ANALYSIS
6. ASSESSMENT OF WETLAND / BIOTIC RESOURCES
7. DRAINAGE STUDY

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INTRODUCTION

SCOPE OF THE EIR

This Program Environmental Impact Report (Program EIR) has been prepared in accordance with the requirements of El Dorado County to assess the impacts of residential development of the Bass Lake Properties.

The California Environmental Quality Act (CEQA) Guidelines section 15168 describes a "Program EIR" as "*an EIR which may be prepared on a series of actions that can be characterized as one large project and are related to each other...*". The El Dorado County Planning Division has determined that a Program EIR is the appropriate environmental document to address the effects of individual subdivision requests in the Bass Lake Road Properties area. This type of EIR will allow for a more exhaustive consideration of the effects and alternatives than would be practical for the environmental review of each individual re-zoning and subdivision request. The Program EIR will also allow for the implementation of mitigation measures to environmental impacts that may be prohibitive for an individual project. Finally, the Program EIR should minimize the amount of environmental documentation required from each individual property owner while allowing El Dorado County to review the appropriateness of each subdivision request.

In accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15121, the purpose of this document is to provide information to County officials and the general public regarding the significant environmental effects of the project, to identify possible means to minimize the significant effects, and to describe reasonable alternatives to the project.

El Dorado County is required to consider the information in this document along with any other pertinent information. The information contained herein does not control the County's ultimate decision on the project, and it is not the purpose of the EIR to recommend approval or denial of the project. However,

the County must respond to each significant effect identified in the EIR and is required (CEQA Guidelines, Section 15090) to certify that it has "reviewed and considered" the information contained in the Final Environmental Impact Report (FEIR) prior to action on the project.

ENVIRONMENTAL PROCESS

The environmental review process for this Program EIR was initiated by El Dorado County with circulation of a Notice of Preparation (NOP) dated April 20, 1990. The 30 day review period began on April 23, 1990 and closed on May 25, 1990. The NOP was circulated concurrently by the State Clearinghouse and by El Dorado County. The document was assigned State Clearinghouse #90020375. A copy of the NOP and comments received is appended to this report and is on file with the EL Dorado County Planning Division, 360 Fair Lane, Placerville, CA 95667.

Following the circulation period, the Initial Study, NOP, and comments received, were forwarded by the El Dorado County Planning Division to R. C. Fuller Associates for preparation of this Environmental Impact Report. This document has been prepared in accordance with CEQA guidelines to evaluate potential impacts and mitigation which would be generated by the proposed project. This Program EIR addresses issues and concerns identified during review of the Initial Study and NOP, during report preparation, and during administrative review of preliminary versions of the Program EIR by County staff. Following acceptance of this document by El Dorado County, this Draft EIR will be circulated for public review and comment. As was done with the Initial Study and NOP, the Program EIR will be provided to the State Clearinghouse for review by State Agencies. Concurrent with that circulation period, El Dorado County will make the document available for public review and comment. Upon receipt of public comments, responses will be prepared and included in the Final EIR (FEIR) for consideration by the El Dorado County Board of Supervisors.

REQUIRED APPROVALS

Approval of the Program EIR will require certification by the Board of Supervisors in accordance with County and CEQA Guidelines. Approval of individual projects of the nature presently proposed will require rezoning and approval of a tentative map. Each tentative map will require a separate environmental determination, and environmental analysis beyond that provided by this Program EIR, may be required. For example, areas of biological sensitivity identified in the Program EIR may require site specific mitigation which can only be developed in the context of subdivision design.

ACKNOWLEDGEMENTS

This Program EIR has been prepared in consultation with El Dorado County staff, including the Planning Division, Department of Transportation, Air Pollution Control District, Sheriff-Coroner, and the Department of Health.

On site information has been obtained by interpretation of aerial photography and by field survey, including the following: Land Use - R.C. Fuller Associates; Biological/Wetlands - Sugnet & Associates, Noise - Brown Buntin Associates; and Archaeology & History - Foothill Archaeological Services. The traffic study was conducted by Omni·Means, Ltd. and reviewed for the EIR by Kittelson & Associates. The fiscal analysis was performed by The Analytics Company.

REPORT FORMAT

This report is divided into chapters based on subject matter. Each chapter is identified by a letter designation. The first three chapters consist largely of baseline information necessary to establish the setting. These include:

A - INTRODUCTION
B - SUMMARY
C - PROJECT DESCRIPTION

The first half of the environmental analysis is presented in chapters D through H which provide discussion and analysis of subjects categorized as "natural environment".

NATURAL ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

D - GEOLOGY, SEISMICITY, AND SOILS
E - HYDROLOGY AND WATER QUALITY
F - VEGETATION & WILDLIFE
G - AIR QUALITY
H - NOISE

The second half of the environmental impact report addresses socio-economic and cultural subjects. These chapters include:

CULTURAL CONDITIONS, PROJECT IMPACTS AND MITIGATION MEASURES

I - LAND USE, POPULATION & HOUSING, RECREATION
J - TRAFFIC
K - PUBLIC SERVICES AND UTILITIES
L - FISCAL
M - VISUAL AND AESTHETIC ENVIRONMENT
N - ARCHAEOLOGY AND HISTORY

The closing portion of the report includes analyses, required CEQA sections, and references. This information is presented in the following chapters:

O - CUMULATIVE ANALYSIS
P - ALTERNATIVE ANALYSIS
Q - GROWTH INDUCING, LONG TERM VS SHORT TERM, IRREVERSIBLE IMPACTS
R - PERSONS AND ORGANIZATIONS CONTACTED
S - PUBLICATIONS CONSULTED

IMPACTS

Potential impacts identified during the preparation of this Program EIR are discussed in each section of the report and listed at the close of each section under the heading entitled **IMPACTS**. Suggested levels of significance for potential impacts are presented in the box as demonstrated below. The final determination of level of significance is made by the County upon EIR certification. As demonstrated below, each impact is described in an indented paragraph which is preceded by a box at the left margin. Relevant mitigation measures are identified

following the description of the impact. Suggested levels of significance for potential impacts are presented in the box as follows:

[L] **LESS THAN SIGNIFICANT IMPACT.** Project specific impacts in this category are suggested to be less than significant without the application of mitigation measures by the project.

No mitigation is warranted for less than significant impacts.

[M] **MITIGATED IMPACT.** This designation identifies a potentially significant impact for which adequate mitigation has been identified to reduce the magnitude of the impact to a less than significant level.

This impact would be reduced to a less than significant level through implementation of mitigation measure 00.

[S] **SIGNIFICANT IMPACT.** Impacts in this category are suggested to be significant regardless of mitigation incorporated into the project. In the cumulative analysis, this designation indicates that the project impact, even though it may be less than significant by itself, will contribute to a significant impact created by the combined impacts of several projects.

Adequate mitigation has not been identified which would reduce this impact to a less than significant level.

MITIGATION MEASURES

Mitigation measures are listed under the heading **MITIGATION MEASURES** at the close of each section. As demonstrated below, each mitigation measure is assigned a unique number which is presented at the left hand margin, adjacent to the mitigation description.

D06 Filter berms, sandbag or hay bale barriers, culvert risers, filter inlets, and/or sediment detention basins will be

utilized as appropriate during construction to protect area waterways from siltation and debris. All open ditches or developed swales will be appropriately vegetated or lined with coarse rock.

Each section of the EIR is identified by a letter. In order to avoid duplication of mitigation measures, this letter is used as the first character in the mitigation numbering scheme to identify the section where that particular mitigation measure originates. In the example presented above, **D** indicates that the measure originates in the **GEOLOGY, SEISMICITY, & SOILS** section. This numbering scheme is most helpful in instances where an individual measure is identified in different sections. For example, measure **D06** is also listed in the Vegetation & Wildlife section where it is credited with reducing siltation of area waterways and thus protection of aquatic habitat.

PLANNING CONSIDERATIONS

As a Program EIR, this report examines impacts and mitigation measures in the context of the entire study area. However, because a comparable level planning document has not been prepared, there are limited mechanisms available to provide area-wide mitigation. In most instances, adequate mitigation can be achieved on a project-by-project basis as individual projects are presented for County review and approval. However, this approach does not facilitate consideration of mitigation which could be more efficiently provided on an area-wide basis.

Where appropriate, a section entitled **PLANNING CONSIDERATIONS** is provided following **MITIGATION MEASURES.** Recommendations for additional mitigation measures, or more efficient implementation of already identified measures, are presented under this heading. A complete list of planning considerations suggested throughout this Program EIR is provided at the end of the summary section.

Mitigation measures identified under **PLANNING CONSIDERATIONS** are not required, and have not been considered in determination of the suggested levels of significance identified for each impact.

AGENCIES EXPECTED TO USE THE EIR

El Dorado County is the lead agency for this Program EIR. Certification of this EIR by the El Dorado County Board of Supervisors will provide information required by decision-makers in evaluation of individual projects which will be subsequently submitted for consideration. Approval of projects proposed within the study area examined by this Program EIR will require an environmental clearance based upon the information provided by this EIR. This clearance may require additional site specific investigation and mitigation measures which of necessity must be developed in the context of subdivision design.

The estimated 10 - 15 acres of drainage channels and potential wetlands which exist in the study area may be subject to the jurisdiction of the U.S. Army Corps of Engineers under Section 404 of the Federal Clean Water Act. These areas may also be subject to regulation by the California Department of Fish and Game under Section 1601 of the California Fish and Game Code.

The California Department of Fish and Game will be notified of their potential jurisdiction by the State Clearinghouse via the normal CEQA EIR review process. A field review by Fish and Game personnel will be required if a permit appears likely.

The Federal process is entirely separate from the State mandated CEQA process. For projects proposed which include or could affect drainage or wetland areas identified in this Program EIR, the project proponents must initiate the Federal Section 404 permit process directly with the Corps of Engineers. In either case, the information presented in this Program EIR will be utilized in the initial determination of jurisdiction by the State or Federal agencies. If a permit appears to be required, the project proponents normally retain a wetlands biologist who specializes in the permit process with the affected agencies.

SUMMARY

A summary of suggested findings of significance for project impacts and recommended mitigation measures are presented in Table B1. Further information and detail regarding these subjects is presented in the appropriate sections of this report. The final determination as to which impacts are judged to be significant will be made by El Dorado County as a component of adoption of the Final EIR, and consequently, the classification presented in this Draft EIR must be considered suggestive.

PROJECT IMPACTS

Impacts identified in this EIR are presented in the context of the proposed project, i.e. development of ±2,901 homes within the ±1223 acre study area. Where appropriate for analysis, future background conditions are considered. Analysis of future conditions recognizes the year 2010 as a reasonable date to expect buildout of the study area to the land uses identified as the proposed project. Project generated impacts in the subject areas of **vegetation and wildlife, land use, population and housing, traffic, water supply, fire protection, schools, and visual/aesthetic resources** were identified as significant impacts.

CUMULATIVE IMPACTS

A "cumulative" impact is an impact which is produced by the combined effect of more than one lesser impact. Even though the incremental impact of individual actions may be less than significant, the combined effect of such impacts may constitute a significant impact. Cumulative impacts are suggested to already exist without development of the Program EIR study area in the subject areas of **vegetation, wildlife, air quality, land use, population and housing, traffic, water supply, schools, and visual/aesthetic resources.** Implementation of the project will exacerbate these impacts. In no instances were any impacts resulting from development of the study area identified as the incremental contribution which would turn a less than significant impact into a significant finding.

TABLE B1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

IMPACTS	MITIGATION MEASURES
GEOLOGY, SEISMICITY, AND SOILS	
[M] The Bass Lake study area is subject to seismically induced groundshaking. Development of the study area will increase the number of people and value of personal property exposed to this phenomena. The potential for seismic events in the study area cannot be reduced, and thus future residents cannot be isolated from such phenomena. Implementation of mitigation measures D01 and D02 will reduce the chance of loss of life or substantial property damage induced by seismic events to an acceptable level.	D01 Each project within the Bass Lake Road study area will retain a geotechnical engineer to identify soil constraints and make recommendations regarding development of roadways, foundations, and other structures. Each engineer will be required to submit documentation of field evaluation of facilities to the Department of Transportation. D02 El Dorado County requires that structures be constructed to the standards of the Uniform Building Code (UBC). The required strength of these structures is intended to be adequate to withstand a seismic event of the probable maximum expectable intensity predicted for the region. To this end, the County requires that each structure be approved prior to construction and inspected prior to occupation.
[M] As a consequence of the scattered rock outcrops and shallow depth to rock, blasting could be required to facilitate development. There are a variety of potentially adverse impacts which can accompany blasting, most notably noise and ground vibration. Noise impacts associated with blasting are addressed in the noise section of this report. If blasting is required, potential adverse impacts will be mitigated to a less than significant level by implementation of measures D03.	D03 The necessity for blasting will be determined on a project by project basis. In instances where blasting is required, the affected project will obtain appropriate permits from the County. Blasting will be performed only by professional firms in accordance with pertinent regulations.
[M] Development will require grading. This activity will remove vegetation and expose soils increasing the susceptibility of the site to erosion. This impact would be mitigated to a less than significant level by implementation of measures D04 and D05.	D04 Prior to development, each project will submit a Grading Plan to the El Dorado County Planning Department and Department of Transportation for review and approval. D05 Grading, trenching, and similar construction activities which involve disturbance of the soil will be performed in accordance with the provisions of County Ordinance 3983. The ordinance specifies that such activities be restricted to the summer season and/or extended periods of dry weather. Filter berms, sandbag or hay bale barriers,

IMPACTS	MITIGATION MEASURES
	culvert risers, filter inlets, and/or sediment detention basins will be utilized as appropriate during construction to protect area waterways from siltation and debris. All open ditches or developed swales will be appropriately vegetated or lined with coarse rock.
HYDROLOGY	
[L] Development will increase the volume of runoff from the study area into the Deer Creek drainageshed. The Cameron Park storm drain system is sized to accommodate runoff from the project. The project will contribute an insignificant amount (<1%) to the volume of runoff which currently exceeds the capacity of the CMP at Cameron Road. No mitigation is required.	**E01** Individual projects within the study area will adhere to the mitigation identified in the El Dorado Hills Salmon Falls Area Plan which specifies "*Non-building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds, should be observed as recommended by the County Health Department.*"
[M] Hydrologic analysis indicates that development of the study area will increase the volume of runoff generated within the Carson Creek drainage during a 100 year storm event by ±32 acre-feet with an accompanying 23% increase in flow rate (cfs). Examination of Carson Creek has indicated that insufficient capacity exists downstream of the study area to accommodate this increase. Implementation of measure **E02** will provide adequate mitigation to avoid exacerbation of the potential flooding situation created by the substandard channel segment located downstream of the study area.	**E02** Each project will provide detention adequate to maintain pre-project flow conditions. Although individual projects in the Bass Lake study area may elect to provide individual detention facilities, it is recommended that a single facility serving the entire study area be constructed. The appended hydrologic analysis indicates that construction of a detention facility with ±40 acre-feet of capacity will provide adequate mitigation to prevent exacerbation of the potential flooding situation created by the substandard channel segment located downstream of the study area. The proposed facility would be located at the site of the existing pond in the south central portion of the study area. Although the entire study area would not discharge to this pond, adequate detention could be provided to compensate for increased flows from the area outside of the facility's drainageshed. Construction, operation and maintenance of the facility could be provided through an Area of Benefit.
[L] Development will decrease the surface area available for infiltration. Because the study area is underlain by impervious material, minimal infiltration naturally occurs and the study area is not recognized as a groundwater recharge zone. The predicted decrease in infiltration will not adversely impact regional groundwater resources. No mitigation is required.	

IMPACTS	MITIGATION MEASURES
[M] Project implementation will adversely impact runoff quality. Construction has the potential to generate sediment and debris, contributing to short term degradation of runoff quality from the study area. Development will eliminate livestock contamination of intermittent drainages, but will introduce urban contaminants resulting in the long term degradation of runoff quality. Potential construction impacts will be mitigated to a less than significant level by implementation of measures **D04** and **D05**. Long term degradation of runoff water quality is an unavoidable consequence of residential development that cannot be entirely avoided, but will be mitigated to an acceptable level by mitigation measures **E01**, **E02**, and **E03**.	**E03** Consistent with the methodology identified in CONTROLLING URBAN RUNOFF: A Practical Manual for Planning and Designing Urban BMPs, each project will submit a Best Management Practices (BMP) plan which specifies the measures which will be implemented to protect water quality. These measures will be identified on Tentative Maps and adopted as Conditions of Approval.
VEGETATION & WILDLIFE	
[M] Grading will be required for building pads, roadways, and utility trenches. This activity will expose soils making them more prone to erosion. Erosion could contribute to degradation of aquatic habitat through siltation. This impact will be mitigated to a less than significant level through implementation of measures **D04** and **D05**.	**F01** Each project proposed on a property which supports native oak trees will retain an arborist to prepare a tree survey. The survey will provide an inventory of trees on the site as well as recommendations for the removal or preservation of individual trees. Prior to construction, fencing will be installed outside of the dripline of trees which are to be protected.
[S] Development of the Bass Lake study area will require disruption and/or loss of natural communities. Grading and removal of vegetation to accommodate homes, streets, and facilities will disrupt approximately one-third of the area, while domestic landscaping will likely be planted over an additional 50% of the area. Following development it is anticipated that less than one-fourth of the area will support native vegetation. Wildlife species which are not compatible with these changes will be permanently displaced from the study area. Species which are less sensitive to human environments will adapt to the new conditions and continue to occupy the area. Even (is) areas are set aside for wildlife, the presence of residential use in the vicinity will unavoidably impact these areas. Allowing pets which prey upon wildlife to run free, misuse of pesticides, herbicides, and fertilizers, and	**F02** Properties which harbor elderberry plants will obtain clearance from the USFWS prior to disturbance of the plants. It is anticipated that the USFWS will require mitigation for disturbance of these plants. **F03** Prior to approval of Tentative Maps, properties identified in this EIR as supporting wetland resources will be required to provide evidence of compliance with Department of Fish and Game policy and Section 404 of the Clean Water Act as administered by the U.S. Army Corps of Engineers. TO satisfy Section 404 requirements, it is anticipated that each project will be required to provide a site specific wetland assessment and mitigation plan. This information will be provided to the County as a Supplement to this EIR, prepared and submitted in conjunction with the Tentative Map for each individual development.

over-watering of native oak trees are examples of unintentional impacts which adversely impact natural areas in urban communities.

The inherent incompatibility of residential land use with natural areas cannot be fully resolved. The loss of wildlife habitat is an unavoidable impact which cannot be mitigated to a less than significant level. Although this impact cannot be reduced to a less than significant level, measures are proposed to protect individual resources. Implementation of measure **F01** will provide protection to individual trees, but will not provide adequate mitigation to preserve the woodland habitat. Implementation of measure **E01** will ensure that natural swales continue to exist. Implementation of measure **F03** will provide protection of the wetland habitat on the project site.

[S] Implementation of the project will adversely impact the special status species known to occupy the area. The various raptors and the great blue heron will be impacted by the loss of foraging area. The raptors will also be impacted by a reduction of perch and nesting habitat.

The inherent incompatibility of residential land use with natural areas cannot be fully resolved. The loss of wildlife habitat is an unavoidable impact which cannot be mitigated to a less than significant level. Although this impact cannot be reduced to a less than significant level, measures are proposed to protect individual resources. Implementation of measure **F01** will provide protection to individual trees, but will not provide adequate mitigation to preserve the woodland habitat. Implementation of measure **E01** will ensure that natural swales continue to exist. Implementation of measure **F03** will provide protection of the wetland habitat on the project site.

[M] Implementation of the project has the potential to adversely impact three elderberry bushes which exist in the study area. As habitat for the valley elderberry longhorn beetle, elderberry plants are subject to USFWS protection.

This impact will be mitigated to a less than significant level by of measure **F02**.

IMPACTS	MITIGATION MEASURES
AIR QUALITY	
M Construction activity will produce short term air quality impacts. The greatest short term air quality impact associated with development will be dust generation produced during grading and land development activities. Assuming that development of the study area takes 10 years, and that half of the development time involves grading and/or activities which require disturbance of the soil, there would be an average of 5 acres per month being disturbed. Assuming the EPA referenced dust generation rate of 1.2 tons/acre/month, development would be expected to generate approximately 6 tons of dust per month. This impact will be mitigated through implementation of mitigation measures G01 and G02.	G01 Sprinkling of graded or similarly exposed areas will be performed at least twice a day during construction. EPA estimates indicate that this action can reduce dust emissions by up to 50% (EPA-450/3-74-036a: 1974). G02 Consistent with the County Ordinance 3983, grading will not be permitted during periods of high winds.
M Project generated traffic will contribute to local and regional air contaminant levels. Predicted emissions from project generated traffic include 120 tons of carbon monoxide, 1438 tons of hydrocarbons, and 148 tons of nitrogen oxides per year. The volume of ozone which will form as a consequence of project traffic emissions is assumed to be comparable to the predicted production of hydrocarbons. These emissions will exacerbate regional efforts to reduce carbon monoxide, particulate, and ozone levels, compounding the nonattainment status for ozone. This impact will be reduced to a less than significant level by measure G03 and G04.	G03 The most recent amendment of the California Clean Air Act stipulates that each APCD designated as a nonattainment area is required to prepare and submit a plan for attaining and maintaining the State Ambient Air Quality standards. The El Dorado County APCD is currently preparing the required plan which is due to the ARB no later than June 30, 1991. The plan will identify measures required to facilitate attainment of the ambient air quality standards. Individual projects within the Bass Lake study area will comply with the requirements of the attainment plan. G04 Individual projects will provide turn out lane(s), bus stop shelters, or other infrastructure necessary to facilitate extension of transit services to the study area. The location, number, and design of these facilities will be established based on consultation with RT and the El Dorado County Department of Public Works. The required facilities will be identified on Tentative Maps and identified as conditions of approval of the various projects.
M Use of gas furnaces and wood-burning devices will produce air contaminants, contributing to the degradation of local air quality. Operation of gas furnaces is predicted to generate 127 pounds of particulates, 31 pounds of sulfur dioxide, 5,077 pounds of nitrogen dioxide, 1,015 pounds of carbon dioxide, 269 pounds of non-methane hydrocarbons, and 137 pounds of methane hydrocarbons. Wood-burning devices are predicted to produce <1.0 ton of PAH, 846 tons of carbon monoxide, and 71 tons of particulates per year.	Aside from continuing technological improvement, mitigation to reduce furnace emissions has not been identified. Mitigation of wood stove emissions is provided by the Federal government through regulation of design and sale of wood stoves.

IMPACTS	MITIGATION MEASURES

NOISE

M The most significant short term noise impact generated by development of the study area will be that produced by construction activities. As shown in Table H2, these noise levels can be expected to range from 70 to 95 dB(A). If blasting is utilized, noise in excess of 100 dB(A) within 50 feet of detonation would be expected.

This impact will be mitigated to a less than significant level through implementation of mitigation measure H01.

M Traffic generated by development of the study area will contribute to noise levels along roadways. Assuming buildout of the study area in 2010, the Federal Highway Administration (FHWA) Traffic Noise Prediction Model predicts that the 65 dB Ldn noise contour will be 858 feet from the centerline of Highway 50. Within the study area, the predicted distance to the 65 dB Ldn contour will range from 138 to 166 feet from the centerline of Bass Lake Road.

This impact will be mitigated to a less than significant level through implementation of mitigation measure H02.

M It is probable the development will include establishment of a fire station somewhere in the study area. Residences located near the station would be routinely exposed to siren noise in excess of 100 dB(A). A **Class A** siren approved for use in California must have a minimum sound level output measured at three meters of 120 dB(A) on the axis and 113 dB(A) at 50° right and left. Although such exposure can be extremely disruptive, emergency equipment is exempted from community noise standards.

H01 Construction activity commonly occurs in developed or developing residential areas. Practical considerations and common sense have, in practice, minimized noise impacts to already occupied homes. All construction equipment is subject to established performance regulations which include adequate mufflers, enclosure panels, or other noise suppression attachments as appropriate. However, should the need arise, construction noise is subject to regulation through existing ordinances. In instances where difficulties arise, the County has the authority to restrict the hours that noisy activities can be conducted to 7am–7pm weekdays, and 8am–8pm weekends. In instances of exceptional noise, such as blasting, a special County permit may be required and warning or temporary relocation of neighbors may be necessary.

H02 As individual projects are proposed within the study area, they will be subjected to an environmental review. This review will include the determination of the need for further noise analysis. This analysis will include, as appropriate, an on site noise assessment to determine the actual location of noise contours. In situations where the predicted 65 dB(A) noise contour falls outside of the roadway right of way and within residential property, projects will be required to implement measures to reduce the noise to the recognized standards included in the **El Dorado County General Plan Noise Element**. Typical measures which may be implemented include setbacks, sound walls, and landscaped berms.

In some instances, noise attenuation of individual residential units will be most appropriate. Construction techniques which may be utilized to reduce interior noise levels include in wall insulation, double pane windows, properly sealed joints, and placement of bedrooms away from noise sources. In accordance with State standards, residential housing must attain interior noise levels of less than 45 dB.

IMPACTS	MITIGATION MEASURES
[M] Residential development of the study area will produce in permanent change in the noise environment. Natural sounds which dominate the existing setting will be replaced by more typical residential sounds including stereos, car doors, lawnmowers, children playing, dogs barking, etc. These sounds are typical of the residential environment and generally do not produce violation of adopted noise standards. Domestic noises, such as dogs barking or loud stereos, are regulated through enforcement of nuisance or similar ordinances on an incident by incident basis.	
LAND USE	
[S] Implementation of the required zoning change and subsequent development of residential projects within the study area will produce a substantial change in land use from the present low intensity rural residential and agricultural use to a more urban environment consistent with high density single family residential land use. This is an unavoidable significant impact of project implementation which cannot be fully mitigated.	I01 Mitigation for potential land use conflicts between existing agricultural operations and urban development is provided by the **EL DORADO HILLS - SALMON FALLS AREA PLAN** which designates the most likely affected areas as **(G) MEDIUM DENSITY RESIDENTIAL** with a maximum density of one unit per acre and the concurrent zoning designation of **(AE) - EXCLUSIVE AGRICULTURE** for the southwest portion of the site. The change in land use from low density rural residential to high density urban residential will also be mitigated by the provisions of the **EL DORADO HILLS - SALMON FALLS AREA PLAN** which requires (page 61, M.M. No. 4) "Non-building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds." M.M. No. 2 (page 63) "Riparian areas should be maintained in a natural state. Where alteration is proposed, the Department of Fish and Game will be notified." Within the study area, the **(G) MEDIUM DENSITY RESIDENTIAL** Area Plan land use designation is applied to the riparian area of Carson Creek along the western edge of the site. This classification requires a minimum of one dwelling unit per acre in recognition of the need to leave the riparian corridor relatively undisturbed.
[M] The introduction of high density residential development into the existing low density rural residential setting will increase the potential for land use compatibility conflicts. This will be especially true during the transition period when higher density residential land use will be juxtaposed with existing established land uses. Problems which could occur include flies and odors associated with the keeping of livestock, noise from agricultural machinery at unusual hours, the application of agricultural chemicals in close proximity to homes, loose domestic pets disturbing livestock, and an increased need for security and fencing for agricultural operations.	

IMPACTS	MITIGATION MEASURES
The potential for such conflicts is minimized in the study area by: 1) many of the current parcels are being integrated into the new developments; 2) There are no substantial areas of traditional crop related agriculture adjacent to the study site; and 3) the two areas on the site which could be affected (one at the northwest corner and one at the southwest corner) are both within the one unit per acre portion of the site. The property at the southwest corner also has **(AE) - EXCLUSIVE AGRICULTURE** zoning.	
This impact will be mitigated to a less than significant level through implementation of mitigation measure I01.	
POPULATION & HOUSING	
[S] Utilizing the County Planning Division figure of 3.3 persons per dwelling unit, the 2,901 single family houses anticipated to develop in the study area would, at full buildout, result in a population of approximately 9,573 persons.	No mitigation measures directly associated with the predicted population and housing increases are warranted. Mitigation measures for specific impacts which will result from the projected growth, such as vegetation, wildlife, traffic, air quality, services, and utilities, are discussed under the appropriate sections of this report.
As discussed in the various sections of this report, this increase in housing and population will result in significant and unavoidable impacts to vegetation and wildlife, air quality, traffic, and water supply. For this reason, the impacts of the population increase itself are considered significant and unavoidable.	
RECREATION	
[M] Using 3.3 persons per household and a recreational space requirement of 5 acres per thousand persons, development of the proposed project will generate a need for approximately 48 acres of recreational space. This need includes both large area-wide facilities	I02 El Dorado County ordinances require an agreement with the Board of Supervisors as to the manner in which the park requirements are met. This may be land dedication, payment of fees, or a combination of both.

as well as small neighborhood facilities consisting primarily of tot lots with some improvements and open space area for more passive recreational activities.

Recreational impacts of study area development will be mitigated to a less than significant level by implementation of mitigation measure **I02**.

TRAFFIC

S Proposed development of the Bass Lake study area will contribute to the volume of traffic using local roadways. Without improvements, virtually all local facilities will function at unacceptable Levels of Service. Even with implementation of the identified mitigation, Bass Lake Road is predicted to function at LOS F.

This impact will be mitigated, but not to a less than significant level by implementation of measures **J01** and **J02**.

J01 Roadway improvements, beyond those required to serve FUTURE WITHOUT PROJECT conditions, will be provided to accommodate project traffic. Even with these improvements, Highway 50 is predicted to remain at LOS E, and Bass Lake Road would deteriorate to LOS F. Developments in the Bass Lake study area will provide construction and/or funding to construct individual improvements required by those projects. These improvements include:

Bass Lake Road at Hollow Oak Road:
- signalization will provide LOS C

Bass Lake Road at Stone Hill Road:
- signalization will provide LOS C

Bass Lake Road at Country Club Drive:
- add left-turn lanes to the SB and EB approaches
- add dual left-turn lanes to the NB approach
- add a second left-turn lane to the WB approach

Bell Ranch at Country Club Drive:
- this intersection will be created with an EB left-turn pocket.

Bass Lake Road at Highway 50:
- addition of a third northbound lane on Bass Lake Road under Highway 50.
- installation of a two phase signal at each ramp intersection will be required.

IMPACTS	MITIGATION MEASURES
	J02 Developments within the Bass Lake study area will pay County transportation fees, participate in an Area of Benefit, or other similar financing mechanism to provide required transportation facilities.
PUBLIC UTILITIES	
WATER	
S Assuming an average water use rate of 600 gallons per day per dwelling unit, the 2,901 homes proposed in the study area will require an average of 1,740,600 gallons per day. Using a maximum day demand of 1,500 gallons per household, development in the study area could generate a peak demand for 4,351,600 gallons per day. Provision of this water will require new transmission and distribution lines from the Gold Hill intertie into the study area, and LAFCO approval of annexation of those properties not currently within the District. Site specific environmental review of the proposed water lines will be required at the time engineering plans are submitted. This impact must be recognized as significant because sufficient water is not available to serve development. This impact could be mitigated to a less than significant level at a future date when/if water becomes available. At that time, implementation of measure K01 is suggested to be sufficient to reduce the magnitude of this impact to a less than significant level.	K01 Those projects which are not currently within the District will be required to petition LAFCO for annexation. As a responsible public agency, LAFCO cannot approve such annexation unless it reasonably concludes that there is adequate guarantee that future water will be available to serve new development. Each project will be required to obtain an "ability to serve" letter from EID. Such a letter cannot be issued until sufficient water supply is available and the moratorium is lifted. Pursuant to Resolution No. 90-39, EID has indicated that it will only issue water meters when new sources of water become available. Consequently, service to the project area will not have a significant impact on the cost of adequacy of service within the District.
M At the rate of 300 gallons of wastewater per day per dwelling unit, the 2,901 homes anticipated to be developed within the study area would require treatment for 870,300 gallons per day. At the peaking factor of 2.5 for wet weather conditions, the peak demand would be for treatment of 2,175,750 gallons per day. Provision of this amount of treatment will require extension of new collection lines and, coupled with other anticipated development in the vicinity, will require expansion of treatment facilities. This impact will be mitigated to a less than significant level through implementation of mitigation measure K02.	K02 Presently proposed capacity with programmed expansions are adequate to handle anticipated growth in the near term, as described above. For the long term, other options will need to be examined by EID to assure that capacity for ultimate needs is available. In accordance with EID and PUC regulations, developers will be required to enter into the necessary service agreement(s) with EID. Included in these agreements will be developer installation of conveyance facilities in accordance with EID requirements. Parcels not already within the District will require annexation.

IMPACTS	MITIGATION MEASURES
GAS AND ELECTRICITY	
[M] Assuming an average use of 175 therms per month, the 2,901 homes anticipated at full buildout of the study area would use 507,675 therms per average month. Assuming an average monthly use of 1,000 kilowatt hours of electric power per home, the 2,901 homes would utilize an average of 2,901,000 kilowatt hours per month. If any homes do not use natural gas, but rely upon electric power for heating, their electric use could be double the average. This impact will be mitigated to a less than significant level through implementation of mitigation measure K03.	K03 Developers will need to enter into the required agreements with PG&E for the provision of services to the project in accordance with PUC regulations. Developers will need to be responsible for relocation or rearrangement of the existing gas and/or electric facilities required to facilitate each development.
TELEPHONE	
[M] No unusual problems are anticipated with the provision of telephone service to the project site. This impact will be mitigated to a less than significant level through implementation of mitigation measure K04.	K04 In accordance with Pacific Bell and PUC regulations, developers will be responsible for any relocation costs of existing overhead telephone facilities, and will provide the underground supporting structure to each lot.
PUBLIC SERVICES	
POLICE SERVICES	
[M] Assuming 3.3 persons per household, and the objective to provide at least 1.0 officer per 1,000 residents, development of the study area will generate the need for approximately 10 new officers. This impact will be mitigated to a less than significant level through implementation of mitigation measure K05.	K05 The Sheriff's Department is funded through the County General Fund. The County Board of Supervisors has the responsibility to allocate funds to maintain an adequate level of service.

IMPACTS	MITIGATION MEASURES
FIRE PROTECTION	
[S] According to Fire Department officials, construction of a new fire station will be required to serve development in the Bass Lake Road study area. The most likely location for a new station will be on the west side of Bass Lake Road. The new station will require at least one acre of land, which could be donated by developers or purchased. The estimated cost of the structure and improvements ranges from $400,000 to $500,000. Equipment costs will include at least one pumper truck ($200,000) and one water tender ($120,000). Annual operating expenses for six staff will be approximately $300,000. Without designation of a new station site, this impact cannot be mitigated to a less than significant level. Capital costs to cover construction of a new station and equipment will be provided by mitigation measure K06.	K06 The El Dorado Hills Fire Department is supported by development fees and is a self-supporting enterprise fund with a property tax base. For this reason, there will be no net impact on the County General Fund. The development fee of $308 per dwelling unit will generate $893,508 which should cover capital costs for structure and equipment for the needed new station.
SOLID WASTE	
[M] Assuming each home generates an average of ±60 gallons of solid waste per week, the 2,901 homes within the study area will generate 174,060 gallons of solid waste per week. This impact will be mitigated to a less than significant level through implementation of mitigation measure K07.	K07 El Dorado Disposal service has indicated that pickup services can be extended to the new development in the study area. The El Dorado County Environmental Management Department has indicated that, although capacity at the Union Mine Disposal Site is presently limited to two years, actions are underway to provide expansion of the disposal site as needed.
SCHOOLS	
[S] The project is predicted to generate approximately 1,131 elementary students, 348 middle school students, and 667 high school students. These students will generate a need for approximately 2.3 elementary schools, 46% of a middle school, and 44% of a high school.	K08 Consistent with the pending fee ordinance, each new home in the study area will be assessed a school fee of $7,198. The fee will be paid at the time of issuance of building permit. As outlined in the ordinance, Stirling fees are included in the fee, and dwelling units which pay the new fee will receive credit for their Stirling fee obligation.

IMPACTS	MITIGATION MEASURES
	As a matter of policy, the Buckeye School District does not consider development impacts to be resolved to a less than significant level until needed sites and financing are identified. Implementation of mitigation measure **K08** is sufficient to provide the necessary financing mechanism, but a potential school site(s) has not been identified. Although no unusual difficulties are anticipated with selection of a school site, this impact cannot be considered mitigated to a less than significant level until the needed site(s) are identified.
FISCAL	
[L] Development of the study area will result in a net positive fiscal impact to El Dorado County.	No mitigation is required.
VISUAL AND AESTHETIC RESOURCES	
[S] The major visual impact which will occur as a consequence of development of the study area will be the complete change of character from the existing rural setting to that of an urban residential community, not unlike Cameron Park or El Dorado Hills. Contributing to this change will be removal of native trees and vegetation, the introduction of domestic lawns and landscape species, grading and "stair stepping" of the hillside to create level home sites, and the addition of roofs, pavement, metal, glass, painted surfaces, etc. to the visual environment. In most cases, the large native oak trees on the ridge will still define the horizon line in that direction, but depending upon vantage point, roofs will infringe upon the otherwise natural horizon line. At night the visual environment will be dominated by artificial lighting from homes. This is an unavoidable impact associated with development, and although it cannot be mitigated to a less than significant level, some mitigation will be realized through implementation of mitigation measures **E01**, and **I01**.	

IMPACTS	MITIGATION MEASURES
ARCHAEOLOGIC AND HISTORIC RESOURCES	
[M] Implementation of the project carries the potential for disturbance of the historic cemetery (Site 1) located within the study site. This impact will be mitigated to a less than significant level by implementation of mitigation measure NO1.	NO1 The historic cemetery (Site 1) should be preserved intact and in place. If relocation or disturbance of any kind is contemplated, specific legal requirements must be met. Such action would require research into the significance and specific history of the cemetery and its occupants. Grave relocation should be done in consultation with living relatives.
[M] Implementation of the project carries the potential for disturbance of the identified historic and prehistoric sites (Sites 2–5) which occur on the site. As stated in the appended archaeological report, these sites should be preserved if at all possible. If not, their recordation is deemed sufficient mitigation.	
[M] Considering the sensitivity of the vicinity, it is possible that undiscovered sites of historical or archaeological significance could exist in the study area. Construction activities have the potential for disturbance of any such sites. This impact will be mitigated to a less than significant level by implementation of mitigation measure NO2.	N02 Construction workers will be informed of the archaeologic history of the study area, and instructed as to the types of materials and/or artifacts which would be indicative of sensitive sites. If any presently unknown artifacts or sites are discovered during construction, all work in the immediate vicinity of the find should be halted until a qualified archaeologist has an opportunity to evaluate the find and recommend appropriate action.

PLANNING CONSIDERATIONS

o Consideration should be given to adopting an area-wide policy for nondevelopment and protection of some of the sensitive habitat which exists in the study area. This is particularly true of the oak woodland. As a consequence of continuing development, native oak woodland is rapidly disappearing from the Valley and lower foothill areas. Recognizing that woodland habitat is attractive for residential development, it is not realistic or feasible to prohibit development of all of these areas. Consequently, selected areas of woodland should be designated for protection, while limited development may be permitted in others. At locations where the County determines development is acceptable, strict guidelines and monitoring should be implemented to provide as much protection as possible to the trees. Examples of measures which should be considered include:

  - require a complete detailed tree survey which locates each tree >6" in diameter on a parcel map, identifies the species, condition, and size of each tree (>6' dbh) and significant trees which should be protected,
  - establish guidelines which limit the number and size of trees which can be removed,
  - review project maps to verify that roadway alignments and lots have been configured to avoid clusters of significant trees as much as possible.
  - designate open space and park areas which provide protection for oak woodland.
  - require that lots located in wooded areas include a building envelope, and prohibit grading, buildings, pools, or other coverage outside of these envelopes,
  - require establishment of landscaping which is compatible with the woodland, and prohibit establishment of traditional lawns and irrigation systems which contribute to the eventual death of native trees.

  It is recommended that these types of measures be implemented to minimize disturbance in the oak woodland which occurs on the ridge in the eastern side of the study area. This woodland is of significant value to raptors because of its vantage above the surrounding terrain, including Bass Lake.

- Riparian habitat is valuable because of its relative scarcity in the region and the diverse array of vegetation and wildlife which utilize this habitat. It is suggested that the County provide addition protection through establishment of a park or designated open space area.

- Development of a "Park & Ride" facility near the intersection of Bass Lake Road and Country Club Drive should be required in conjunction with development of the area. Such a facility should be identified early in the planning process to ensure adequate space is reserved prior to development. Individual projects could be assessed a prorated portion of the costs associated with establishment of this facility.

- A pedestrian/bicycle oriented circulation system should be established which provides safe travel corridors throughout the study area. The pathway, which could be constructed in conjunction with the roadways, should connect the various developments with local schools, parks, and the proposed commercial center located north of the study area. In addition to bikeways along major roadways in the study area, stream corridors and utility easements should be considered as potential pathway alignments.

- As described more fully in the Fire Protection section of this report, decisions regarding the possible location of a fire station within the study area should be made as soon as possible. This will help to assure that the best possible buffering and other land planning measures can be utilized to minimize potential noise and other negative impacts on residential areas.

- Planning of high density residential subdivisions adjacent to land uses which are to remain rural should include measures to minimize the potential conflict resulting from the juxtaposition of these two types of land use.

- Residential development near to power and microwave transmission facilities carries the potential to expose residents to high microwave levels and high electromagnetic

fields. As the health effects, if any, are not yet known, no assessment of risk can be made, nor can guidelines regarding safe exposure be given. Therefore, any mitigation must be precautionary. It is suggested that the potential risk, if any, from microwave transmission/reception and electromagnetic fields be minimized by providing maximum separation of residences from sources.

- To assure that the recreation and bicycle routes are implemented, the County and the EDHCSD should review each proposed tentative map in areas with designated routes. Such a review would be designed to confirm that these routes are adequately accommodated.

- Development of a "Park & Ride" facility near the intersection of Bass Lake Road and Country Club Drive should be required in conjunction with development of the area. Such a facility should be identified early in the planning process to ensure adequate space is reserved prior to development. Individual projects could be assessed a prorated portion of the costs associated with establishment of this facility.

- Subdivisions approved within the study area should be required to include water conserving design features. Such features could include: use of low water use landscaping; water metering; penalties for excessive use; use of recycled water for landscaping; and designation of groundwater recharge areas if geologically feasible.

- On the study area level, a suitable fire station site must be identified prior to approval of any major subdivisions at locations being considered for the new fire station.

- Because of the stringent site requirements imposed by the State, potential sites for new school facilities should be identified as soon as possible, providing adequate time for site review and evaluation prior to residential development of alternative sites which could be used if the State were to reject the primary selection.

- The two prehistoric sites (Sites 2 and 5) are both isolated bedrock milling stations, typical of many in the vicinity. Their recordation is deemed adequate mitigation. The preferred mitigation, however, is preservation in their existing location and condition. If grading or site disturbance occurs, a knowledgeable person should be present to watch for buried archaeological deposits.

- The mining sites (Sites 3 and 4) represent physical traces of the site history. Their recordation is deemed adequate mitigation. The preferred mitigation, however, is preservation, which would likely occur if the drainage swales are preserved for greenbelt and wildlife habitat values.

- The stone wall (Site 6) and historic road segment (Site 7) should be preserved intact. Both could be left in place and incorporated into landscaping.

DESCRIPTION OF THE PROJECT

LOCATION

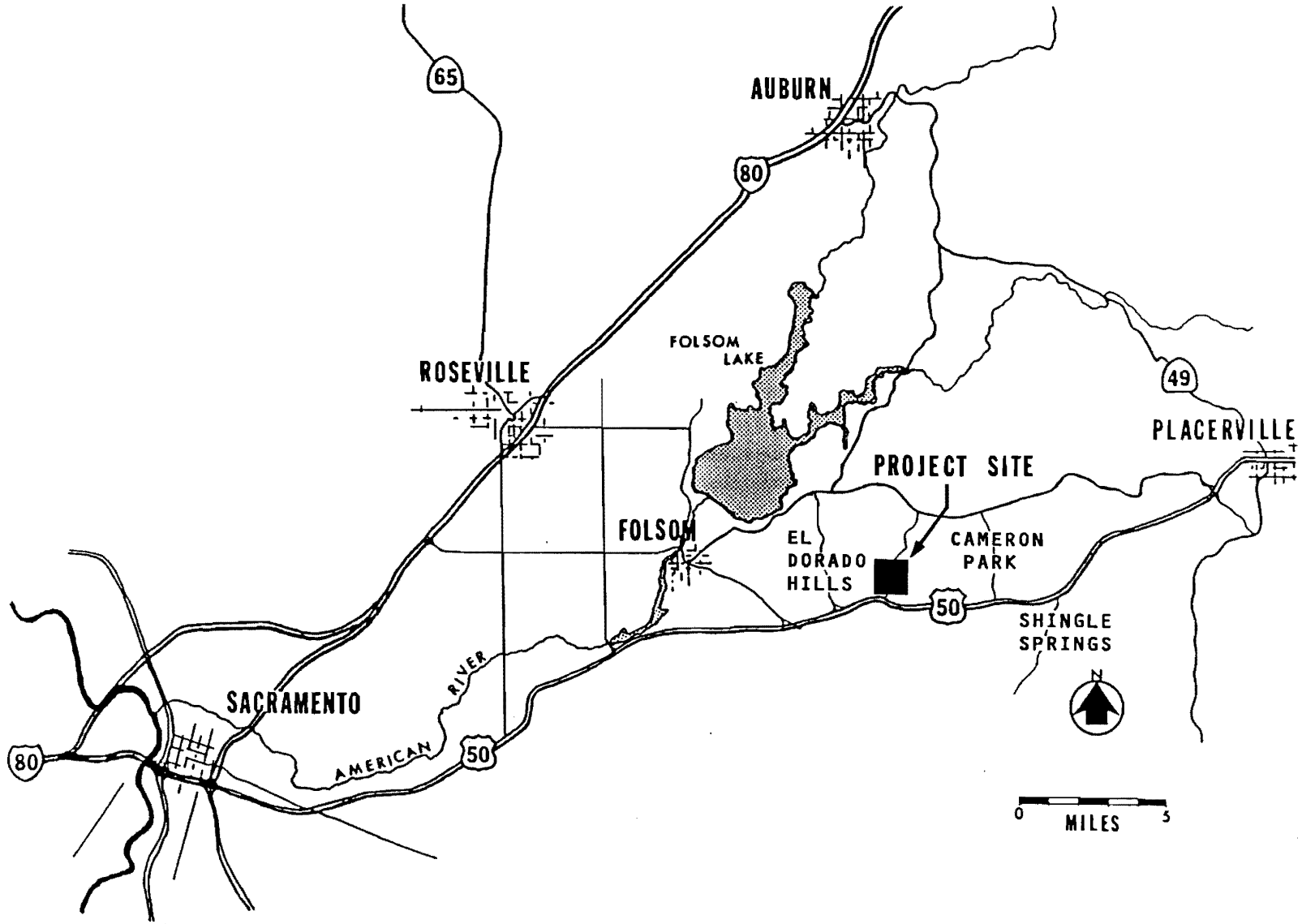
As shown in Figure C1, the Regional Location Map, the Bass Lake study area is located approximately three miles east of the Sacramento/El Dorado County line, between the communities of El Dorado Hills and Cameron Park. The properties included in the project are located in Sections 5, 6, 7, and 8 of Township 9N, Range 9E, and in Sections 31 and 32 of Township 10N, Range 9E, as depicted on the Clarksville California Quadrangle of the USGS 7.5 minute topographic series.

As depicted in Figure C2, the Vicinity Map, the study area is situated on the north side of Highway 50 along both sides of Bass Lake Road. Bass Lake is located approximately one-fourth of a mile north of the study area.

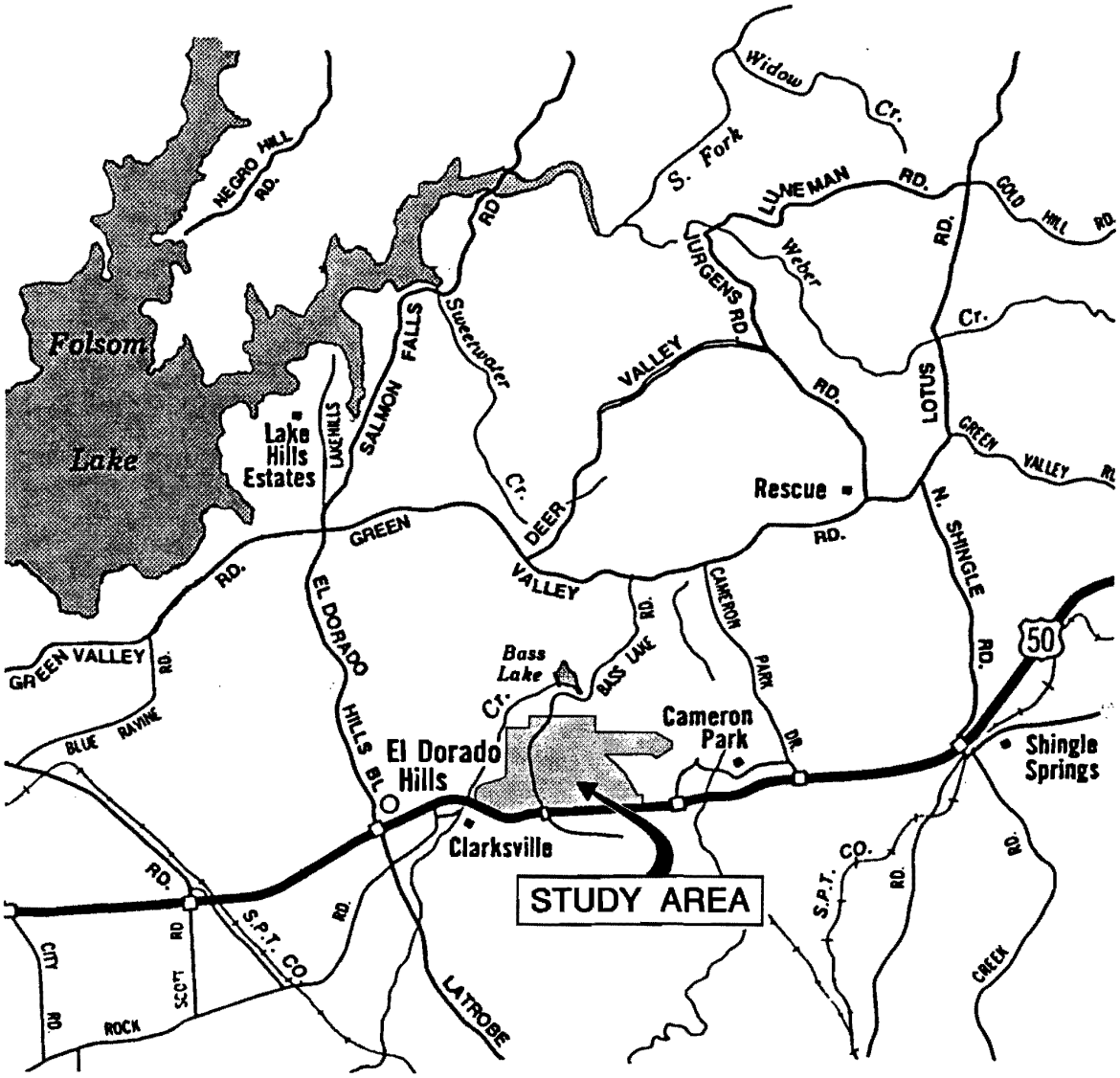
PROJECT SITE DESCRIPTION

Figure C3 identifies the individual parcels included in the Bass Lake study area. As indicated in Column (1) of Table C1, the study area is ±1,223.1 acres in size, and includes 89 individual parcels ranging in size from 1.1 to 96.3 acres. The majority of the parcels (i.e. 59 out of the 88) are approximately ten acres in size. Most of these parcels, as well as the study area in its entirety, can be identified in the field by fencelines. There are approximately 35 existing residences in the study area.

The 1223.1 acre study area is situated in gently rolling terrain characteristic of the lower Sierra foothills. Elevation of the study area ranges from a high of ±1,469 feet above mean sea level (msl), on the north-south ridge which traverses the eastern side the study area, to a low of ±760 feet msl near Carson Creek in the extreme southwestern corner of the study area.



REGIONAL LOCATION MAP | **FIGURE C1**



STUDY AREA VICINITY MAP	FIGURE C2

BASS LAKE ROAD STUDY AREA	FIGURE C3

Approximately 90% of the study area drains west toward Carson Creek, which crosses the study area near its western boundary. Drainage toward Carson Creek largely consists of sheet flow, which is collected in minor swales which become more defined as they near the creek. North of the study area, Carson Creek is dammed to form Bass Lake. Carson Creek flows under Highway 50 near the southwestern boundary of the project site and empties into Coyote Creek approximately seven miles downstream from the study area. Deer Creek feeds the Cosumnes River which drains into the Sacramento-San Joaquin Delta. The eastern 10% of the study area drains to east to Deer Creek. Deer Creek joins Coyote Creek approximately eight miles southwest of the project site.

The rolling hills of the site are punctuated by rock outcrops on most of the hillsides. Slopes range from approximately 2 to 20 percent. Soils are generally shallow, fine grained, and poorly developed. Evidence of erosion is slight throughout the site.

Major vegetation associations which occur in the study area include open grassland, oak woodland, chaparral, and riparian. Grassland is the most prevalent, and is interspersed with native oak woodland, particularly at the higher elevations. Riparian vegetation is limited to a corridor along Carson Creek in the western side of the area. Similarly, chaparral occurs in a relatively limited area in the extreme eastern portion of the study area. The most prominent tree species in the study area include blue oak, valley oak, live oak, digger pine, and buckeye. Common understory brush species include coffeeberry, poison oak, buckbrush, manzanita, yerba santa, and chamise. Grass species include foxtail, ripgut brome, soft chess, wild oats, and fescue. In disturbed areas, star thistle and other pioneer forbs occur. Wetland vegetation occurs along some of the intermittent swales and drainages. Predominant species include willows, rushes, sedges, and various grasses.

Wildlife observed in the study area include jackrabbits, rattlesnakes, a variety of small mammals and birds, and numerous raptors including kestrels, hawks, owls, and eagles.

LAND USE SCENARIOS

The three subcolumn under the heading **PARCEL DATA** in Table C1 provide data on individual parcels located in the study area. The first subcolumn is the Assessor's Parcel Number (APN), the second subcolumn is the parcel reference number used in Figure C3, and the third subcolumn identifies the acreage of each individual parcel. Columns (2) through (7) of Table C1 present land use data associated with development of the study area to any of six development scenarios.

Buildout to the maximum density permitted by the existing land use designations identified in the **General Plan** is calculated in Table C1, column (2), titled **GENERAL PLAN.** The first subcolumn under this scenario identifies the current **General Plan** land use designation. As shown, all of the study area is designated either **F** or **G.** Properties labelled **F** by the **General Plan** are designated as HIGH DENSITY RESIDENTIAL, and development to a density of five units per acre is allowed. Properties in proximity to Carson Creek are designated **G**, indicating that MEDIUM DENSITY RESIDENTIAL use is allowed. MEDIUM DENSITY RESIDENTIAL use is restricted to a minimum lot size of one acre. Since the General Plan land use designations do not always conform to individual parcel boundaries, some parcels include area in **F** and area in **G.** In such instances, an estimate of the number of acres in each designation has been made. The second subcolumn identifies the density (units/acre) permitted by the respective General Plan land use designations. In instances where a single parcel is covered by more than one land use designation, an average density has been calculated. The third subcolumn identifies the maximum number of units, and is calculated using the General Plan density and the parcel acreage. As indicated in the last row of Table C1, 5,603 homes could be developed in the study area under the existing General Plan designations.

Although the current General Plan designations and accompanying zoning permit development of densities as high as five units per acre, three units per acre is more consistent with surrounding land use, and based on site constraints, regarded as a feasible level of development which could be attained.

TABLE C1
STUDY AREA PROPERTIES / DEVELOPMENT ALTERNATIVES

(1) PARCEL DATA			(2) GENERAL PLAN Buildout to General Plan land use			(3) REDUCED GENERAL PLAN Areas designated 5 units/acre limited to 3 units/acre	(4) PROPOSED PROJECT Column (3) modified to include currently proposed development			(5) NO PROJECT ALTERNATIVE Existing Zoning 1 unit/10 acres (except lot 86 is 1 unit/20 acres)	(6) HIGHER DENSITY ALTERNATIVE Column (2) modified to include currently proposed development	(7) LOWER DENSITY ALTERNATIVE Column (4) with General Plan densities shifted to next lower land use category	
APN	Ref # Fig C2	Acres	Land Use	Units/ Acre	Units	Units	Dev*	Units/ Acre	Units	Units	Units	Units/ Acre	Units
108-110-05		1.1	F	5.0	5.7	3.4			3.4	0.1	5.7	1.0	1.1
108-130-21	1	17.0	F	5.0	85.0	51.0			51.0	1.7	85.0	1.0	17.0
108-130-19	2	10.4	F	5.0	52.0	31.2			31.2	1.0	52.0	1.0	10.4
108-130-30	3	27.2	F	5.0	136.0	81.6			81.6	2.7	136.0	1.0	27.2
108-070-19	4	19.9	6F/14G	2.2	43.9	31.7			31.7	2.0	43.9	0.4	8.8
108-070-15	5	10.1	F	5.0	50.5	30.3			30.3	1.0	50.5	1.0	10.1
108-130-16	6	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-18	7	10.4	F	5.0	52.0	31.2			31.2	1.0	52.0	1.0	10.4
108-130-17	8	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-15	9	10.3	F	5.0	51.5	30.9			30.9	1.0	51.5	1.0	10.3
108-130-14	10	8.7	F	5.0	43.5	26.1			26.1	0.9	43.5	1.0	8.7
108-130-13	11	14.0	F	5.0	70.0	42.0			42.0	1.4	70.0	1.0	14.0
108-130-12	12	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-070-08	13	10.2	F	5.0	51.0	30.6			30.6	1.0	51.0	1.0	10.2
108-130-11	14	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-10	15	9.5	F	5.0	47.5	28.5			28.5	1.0	47.5	1.0	9.5
108-130-04	16	10.0	3F/7G	2.2	22.0	16.0			16.0	1.0	22.0	0.4	4.4
108-130-05	17	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-09	18	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-08	19	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-07	20	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-06	21	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-03	22	10.0	8F/2G	4.2	42.0	26.0			26.0	1.0	42.0	0.8	8.4
108-130-28	23	10.0	G	1.0	10.0	10.0			10.0	1.0	10.0	0.2	2.0
108-130-29	24	10.8	G	1.0	10.8	10.8			10.8	1.1	10.8	0.2	2.2
108-130-02	25	10.1	F	5.0	50.5	30.3			30.3	1.0	50.5	1.0	10.1
108-130-25	26	11.5	7.5F/4G	3.6	41.5	26.5			26.5	1.2	41.5	0.7	8.3
108-130-27	27	10.0	9F/1G	4.6	46.0	28.0			28.0	1.0	46.0	0.9	9.2
108-130-26	28	10.0	8F/2G	4.2	42.0	26.0			26.0	1.0	42.0	0.8	8.4
108-130-24	29	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-130-23	30	10.1	F	5.0	50.5	30.3	WS	2.67	27.0	1.0	27.0	2.7	27.0

* Dev: See end of Table

TABLE CONTINUED NEXT PAGE

TABLE C1 (Cont)
STUDY AREA PROPERTIES / DEVELOPMENT ALTERNATIVES

(1) PARCEL DATA			(2) GENERAL PLAN Buildout to General Plan land use			(3) REDUCED GENERAL PLAN Areas designated 5 units/acre limited to 3 units/acre	(4) PROPOSED PROJECT Column (3) modified to include currently proposed development			(5) NO PROJECT ALTERNATIVE Existing Zoning 1 unit/10 acres (except lot 86 is 1 unit/20 acres)	(6) HIGHER DENSITY ALTERNATIVE Column (2) modified to include currently proposed development	(7) LOWER DENSITY ALTERNATIVE Column (4) with General Plan densities shifted to next lower land use category	
APN	Ref # Fig C2	Acres	Land Use	Units/ Acre	Units	Units	Dev*	Units/ Acre	Units	Units	Units	Units/ Acre	Units
103-060-01	31	40.1	F	5.0	200.5	120.3	HVR	2.74	110.0	4.0	110.0	2.7	110.0
103-060-02	32	11.6	F	5.0	58.0	34.8			34.8	1.2	58.0	1.0	11.6
103-060-03	33	10.2	F	5.0	51.0	30.6			30.6	1.0	51.0	1.0	10.2
103-060-04	34	10.1	F	5.0	50.5	30.3			30.3	1.0	50.5	1.0	10.1
108-120-04	35	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-03	36	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-02	37	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-01	38	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-14	39	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-18	40	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-31	41	10.0	F	5.0	50.0	30.0	YP	2.65	26.5	1.0	26.5	2.7	26.5
108-120-17	42	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-16	43	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-15	44	10.0	F	5.0	50.0	30.0	CL	2.45	24.5	1.0	24.5	2.5	24.5
108-110-01	45	41.0	F	5.0	205.0	123.0	CL	2.45	100.7	4.1	100.7	2.5	100.7
108-110-03	46	41.2	F	5.0	206.0	123.6			123.6	4.1	206.0	1.0	41.2
108-110-12	47	20.0	F	5.0	100.0	60.0			60.0	2.0	100.0	1.0	20.0
108-110-14	48	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-010-02	49	40.0	F	5.0	200.0	120.0	BR	1.80	72.2	4.0	72.2	1.8	72.2
108-110-13	50	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-110-11	51	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-110-10	52	10.2	F	5.0	51.0	30.6			30.6	1.0	51.0	1.0	10.2
108-110-09	53	10.2	F	5.0	51.0	30.6	CL	2.45	25.0	1.0	25.0	2.5	25.0
108-110-08	54	10.9	F	5.0	54.5	32.7	CL	2.45	26.8	1.1	26.8	2.5	26.8
108-120-32	55	10.0	F	5.0	50.0	30.0	YP	2.65	26.5	1.0	26.5	2.7	26.5
108-120-30	56	10.0	F	5.0	50.0	30.0	YP	2.65	26.5	1.0	26.5	2.7	26.5
108-120-29	57	10.0	F	5.0	50.0	30.0	YP	2.65	26.5	1.0	26.5	2.7	26.5
108-010-01	58	96.3	F	5.0	481.5	288.9	BR	1.80	173.8	9.6	173.8	1.8	173.8
108-120-21	59	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3
108-120-19	60	10.0	F	5.0	50.0	30.0	SH	2.63	26.3	1.0	26.3	2.6	26.3

* DEV: See end of Table

TABLE CONTINUED NEXT PAGE

TABLE C1 (Cont)
STUDY AREA PROPERTIES / DEVELOPMENT ALTERNATIVES

(1) PARCEL DATA			(2) GENERAL PLAN Buildout to General Plan land use			(3) REDUCED GENERAL PLAN Areas designated 5 units/acre limited to 3 units/acre	(4) PROPOSED PROJECT Column (3) modified to include currently proposed development			(5) NO PROJECT ALTERNATIVE Existing Zoning 1 unit/10 acres (except lot 86 is 1 unit/20 acres)	(6) HIGHER DENSITY ALTERNATIVE Column (2) modified to include currently proposed development	(7) LOWER DENSITY ALTERNATIVE Column (4) with General Plan densities shifted to next lower land use category	
APN	Ref # Fig C2	Acres	Land Use	Units/ Acre	Units	Units	Dev*	Units/ Acre	Units	Units	Units	Units/ Acre	Units
108-120-20	61	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-120-08	62	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-05	63	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-06	64	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-07	65	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
103-010-19	66	14.2	F	5.0	71.0	42.6	HO	2.08	29.6	1.4	29.6	2.1	29.6
103-010-18	67	13.2	F	5.0	66.0	39.6	HO	2.08	27.5	1.3	27.5	2.1	27.5
103-010-17	68	11.3	F	5.0	56.5	33.9	HO	2.08	23.5	1.1	23.5	2.1	23.5
103-010-16	69	11.6	F	5.0	58.0	34.8	HO	2.08	24.2	1.2	24.2	2.1	24.2
108-010-03	70	40.0	F	5.0	200.0	120.0	OK	1.71	68.3	4.0	68.3	1.7	68.3
108-120-24	71	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-23	72	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-25	73	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-26	74	10.0	F	5.0	50.0	30.0			30.0	1.0	50.0	1.0	10.0
108-120-10	75	10.0	F	5.0	50.0	30.0	SCE	2.40	24.0	1.0	24.0	2.4	24.0
108-120-12	76	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-11	77	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-120-13	78	10.0	F	5.0	50.0	30.0	HO	2.08	20.8	1.0	20.8	2.1	20.8
108-010-07	79	33.7	F	5.0	168.5	101.1	HO	2.08	70.2	3.4	70.2	2.1	70.2
108-070-07	80	10.0	G	1.0	10.0	10.0			10.0	1.0	10.0	0.2	2.0
108-070-12	81	10.2	F	5.0	51.0	30.6			30.6	1.0	51.0	1.0	10.2
108-070-18	82	18.0	G	1.0	18.0	18.0			18.0	1.8	18.0	0.2	3.6
108-070-20	83	9.2	G	1.0	9.2	9.2			9.2	0.9	9.2	0.2	1.8
108-070-22	84	10.2	G	1.0	10.2	10.2			10.2	1.0	10.2	0.2	2.0
108-070-16	85	10.0	7F/3G	3.8	38.0	24.0			24.0	1.0	38.0	0.8	7.6
108-070-04	86	27.0	G	1.0	27.0	27.0			27.0	1.4	27.0	0.2	5.4
108-010-09	87	5.7	F	5.0	28.5	17.1			17.1	0.6	28.5	1.0	5.7
108-280-05	88	5.7	F	5.0	28.5	17.1	OK	1.71	9.7	0.6	9.7	1.7	9.7
89		1223.1			5603.3	3413.0			2901.1	121.0	3814.8		1885.4

* Dev: Currently proposed Developments in the study area
HO - Hollow Oaks, HVR - Hawk View Ridge, BR - Bell Ranch, SH - Stone Hill, YP - Yowell Properties, WS - Wright Subdivision
OK - Oak Knoll, SCE - Sutter Creek Estates, CL - City Lights

Column (3), entitled **REDUCED GENERAL PLAN**, calculates the number of units that could be constructed in the study area if the parcels designated as HIGH DENSITY RESIDENTIAL were developed to an average density of three units per acre, rather than the maximum of five units per acre allowed by the General Plan. Development under this scenario would reduce the number of homes that could be developed in the study area from the allowed 5,603 maximum to 3,413 units.

The **PROPOSED PROJECT**, which is a variation of the **REDUCED GENERAL PLAN** scenario, is presented in column (4) of Table C1. Land Use assumed in the **PROPOSED PROJECT** is identical to that of the **REDUCED GENERAL PLAN** scenario except that the **PROPOSED PROJECT** incorporates densities for parcels where development plans have been proposed. The El Dorado County Planning Division currently has on file preliminary information and/or formal applications for development of nine residential projects within the Bass Lake study area. As shown in Table C2, these projects propose development of 1,403 homes on ±638.3 acres of the Bass Lake study area, resulting in an average density of 2.2 units per acre.

TABLE C2
ALREADY PROPOSED SUBDIVISIONS

Subdivision Name	Units	Acres	Units/Acre
Hollow Oaks	425	204.0	2.08
Hawk View Ridge	110	40.1	2.74
Beil Ranch	246	136.3	1.80
Oak Knoll	78	45.7	1.71
City Lights	177	72.1	2.45
Stone Hill	210	80.0	2.63
Yowell Properties	106	40.0	2.65
Wright Subdivision	27	10.1	2.67
Sutter Creek Estates	24	10.0	2.40
Total	1,403	638.3	Average 2.20

The proposed project evaluated in this Program EIR assumes that these projects would be developed as proposed, and the remainder of the study area would be developed as described under the **REDUCED GENERAL PLAN** scenario. Implementation of the proposed project scenario will result in development of 2,901 units in the study area. The proposed project is consistent with the **EL DORADO HILLS - SALMON FALLS AREA PLAN.** Implementation of the proposed project will not require amendment of the Area Plan, but will require rezoning to SINGLE FAMILY RESIDENTIAL (R1).

Three additional alternative development scenarios have been identified for examination, and are presented in Table 3. These alternatives include the **NO PROJECT ALTERNATIVE**, the **HIGHER DENSITY ALTERNATIVE**, and the **LOWER DENSITY ALTERNATIVE.**

The **NO PROJECT ALTERNATIVE** assumes that development will occur consistent with existing zoning in the plan area. Existing zoning designations in the study area include AGRICULTURAL (A) and ESTATE RESIDENTIAL (RE 10), both of which permit no more than one dwelling unit per ten acres. As shown in the Table C1 column (5), development of the study area to this density would include 122 homes. This scenario represents the maximum level of development which could occur unless rezoning were initiated.

The **HIGHER DENSITY ALTERNATIVE** is presented as column (6) in Table C1. This alternative was calculated assuming construction of the nine subdivisions for which the Planning Division has received preliminary information and/or formal applications, and development of the remainder of the study area to the maximum density permitted by the existing General Plan, i.e. the densities shown in column (2) of Table C1. Development to this level would result in 3,815 homes in the study area.

The **LOWER DENSITY ALTERNATIVE** is identified in column (7) of Table C1. This scenario was calculated assuming development of the nine proposed subdivisions for which the Planning Division has received preliminary information and/or formal applications. Parcels in the remainder of the study area are presumed to develop to the next lower land use category than that presently designated by the General Plan. For example, those properties

designated **F - HIGH DENSITY RESIDENTIAL** by the General Plan would instead develop as **G - MEDIUM DENSITY RESIDENTIAL** with a maximum density of one unit per acre. Similarly, those properties designated **G - MEDIUM DENSITY RESIDENTIAL** by the General Plan are assumed to develop as **H - LOW DENSITY RESIDENTIAL** with a maximum density of 1 unit per five acres. Under these assumptions, a maximum of 1,885 units could be constructed in the study area.

NATURAL ENVIRONMENTAL SETTING, PROJECT IMPACTS, AND MITIGATION MEASURES

D – GEOLOGY, SEISMICITY, AND SOILS
E – HYDROLOGY AND WATER QUALITY
F – VEGETATION & WILDLIFE
G – AIR QUALITY
H – NOISE

GEOLOGY, SEISMICITY, AND SOILS

GEOLOGY

Northern California was at one time underlain by a single relatively flat geologic plate. Over the course of time, this plate was fractured and the outer edges were forced upward forming the Sierra Nevada and Coast Mountain ranges. The Bass Lake area is located immediately on top of the western fracture zone created during uplifting of the Sierra Nevada Mountains. This zone, which trends southeast to northwest along the western base of the Sierra Nevada Mountains, is characterized by plutonic and metasedimentary materials created during the Mesozoic and Paleozoic periods (Geologic Map of the Sacramento Quadrangle, 1981). These materials tend be substantially older and more dense than material occurring either east or west of the fracture zone. Frequent rock outcroppings, shallow soils, and rolling terrain are common characteristics associated with this underlying geologic formation.

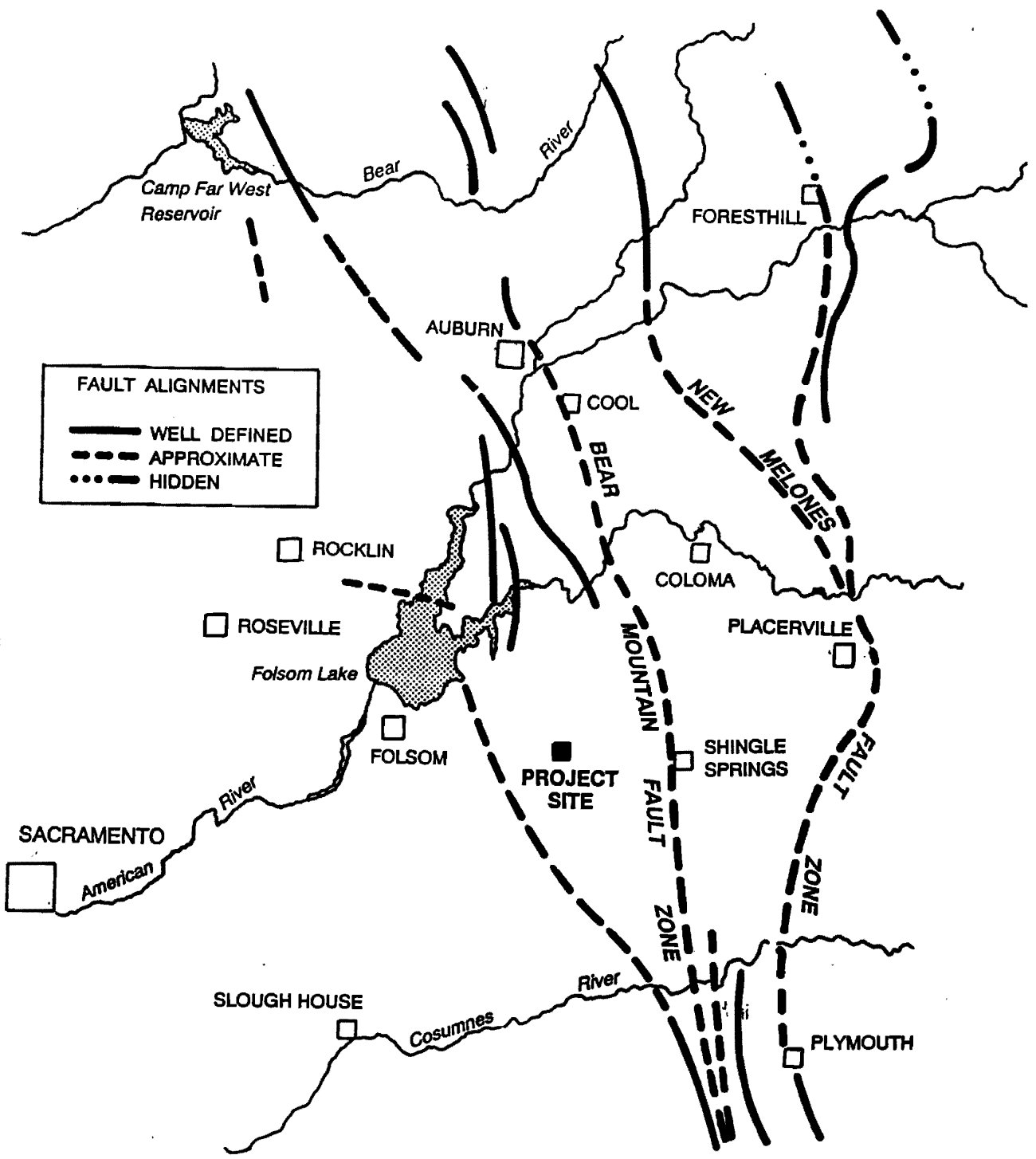
SEISMICITY

Alignment of the principal faults in the region closely follow the fractures in the underlying plate which occurred during uplifting of the Sierra Nevada Mountains. The Foothills Fault System is the most prominent alignment along the base of the Sierra Nevada Mountains. This Fault System underlies an area approximately nine miles in width, extending from Mariposa County west of Merced to Plumas County east of Oroville. The two most notable clusters of faults located in this corridor are the Bear Mountain Fault zone and the New Melones Fault zone. These fault zones parallel each other along opposite sides of the Foothill Fault System. The Bear Mountain Fault zone generally follows the western side of the Foothill Fault System corridor, while the New Melones Fault System marks the eastern side of the System.

Because the major fault alignments tend to wrap around the geologic unit which underlies the Bass Lake area, the width of the Foothill Fault System bulges to nearly 18 miles in the Bass Lake vicinity. As depicted in Figure D1, based on information from the Fault Map of California, the project site is situated between individual alignments of the Bear Mountain zone which marks the western side of the Foothills Fault System corridor.

The closest fault to the project site is located approximately one-third of a mile west of the site, passing through Browns Ravine and under Folsom Lake. The next nearest fault is located approximately one-half of a mile east of the project site, passing through Shingle Springs and Rescue. Faults associated with the Bear Mountain zone are generally classified as Pre-Quarternary, indicating that they are believed to have been created more than 2 million years ago. Even though evidence of movement may be nonexistent, these faults should not be considered "dead". It is possible that evidence of activity could be obscured through erosion, covered by vegetation, or concealed by works of man. There is considerable concern within the geologic community that increased tectonic movement, evidenced by increased volcanic activity along the Pacific plate, could produce reactivation of many faults which have been historically inactive. Consistent with this supposition, studies conducted for the Auburn Dam project identified evidence that the Bear Mountain Fault zone could be undergoing reactivation and should be considered potentially active.

The most recent recorded event in the region with a Richter intensity of 4 or greater, was a 5.7 magnitude quake that occurred in 1975 at the northern end of the Bear Mountain Fault zone near Oroville. Although there is speculation that this event was triggered by pressure exerted by Oroville Lake, it is not possible to discount the quake as an isolated event with no correlation to current tectonic activity. Prior to the Oroville quake, the last recorded geologic activity in the region with a Richter intensity of 4 or greater, occurred in 1908. The epicenter of that event was located on a north/south line between Folsom and Auburn and on an east/west line between Placerville and Roseville.



FAULT MAP | **FIGURE D1**

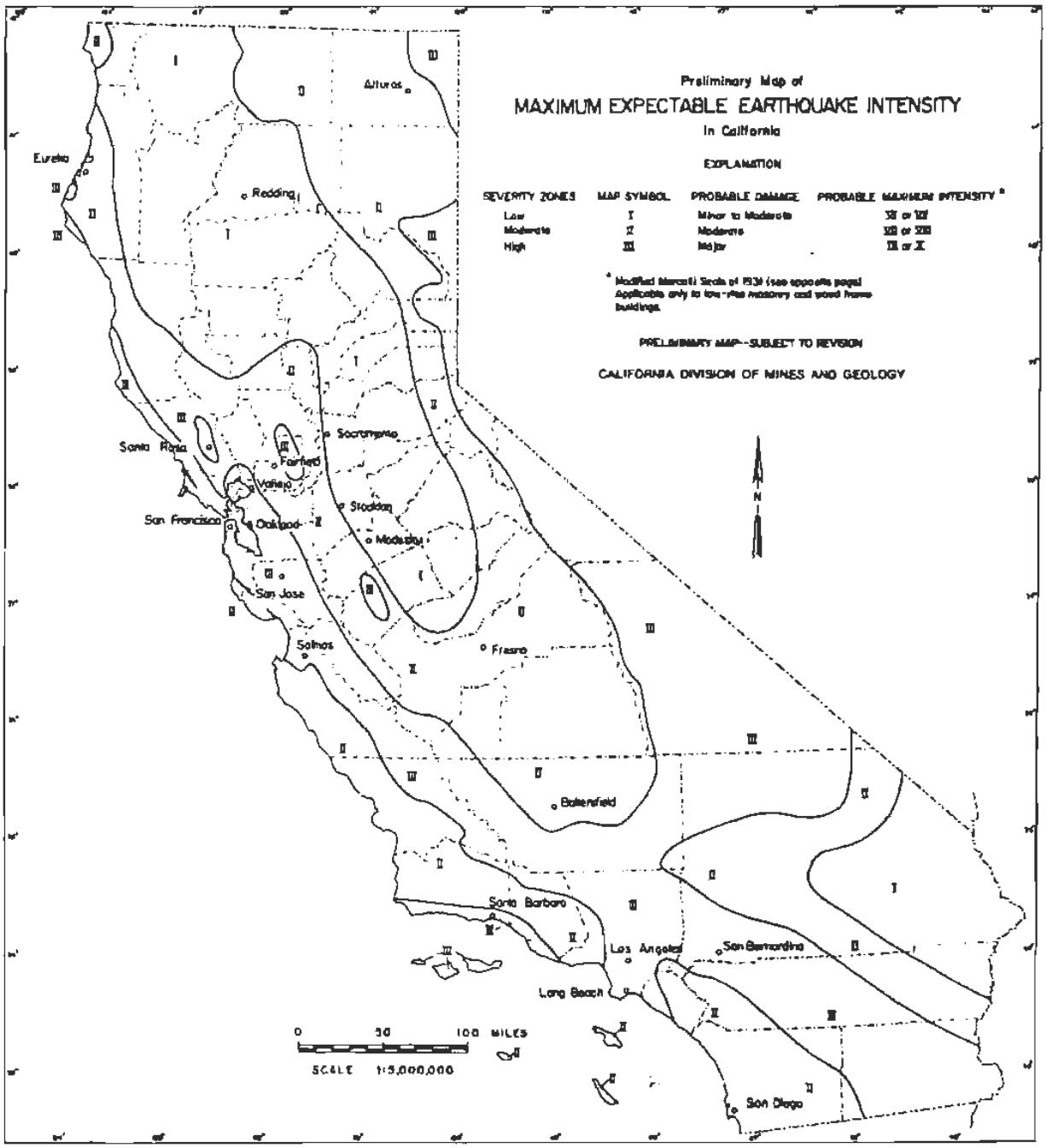
As depicted in Figure D2, the California Division of Mines and Geology has predicted the Maximum Expectable Earthquake intensity for various regions of the State. As shown, the project site is located in a low severity earthquake zone. The probable maximum expectable earthquake intensity which may be anticipated in this zone would be VI or VII on the Modified Mercalli Scale. Typical effects of such an event would likely include: some cracks in weak masonry and chimneys; trees and bushes may be visibly shaken or heard to rustle; furniture could be moved; pictures, knickknacks, glasses, or china could be broken. Although this information is generally regarded as accurate, the increased level of activity which has been observed since publication of this data may warrant revision of the intensity zone predictions.

SOILS

According to the **Soil Survey of El Dorado County** prepared by the USDA Soil Conservation Service and Forest Service, soils which occur on the Bass Lake properties include Argonaut Gravelly Loam, 2-15% Slopes; Argonaut Very Rocky Loam, 3-30%; Auburn Silt Loam, 2-30% Slopes; Auburn Very Rocky Silt Loam, 2-30%; Auburn Extremely Rocky Silt Loam, 3-70%; Serpentine Rock Land; and Sobrante Silt Loam, 3-15% Slopes. The distribution of these soils on the project site is depicted in Figure D3.

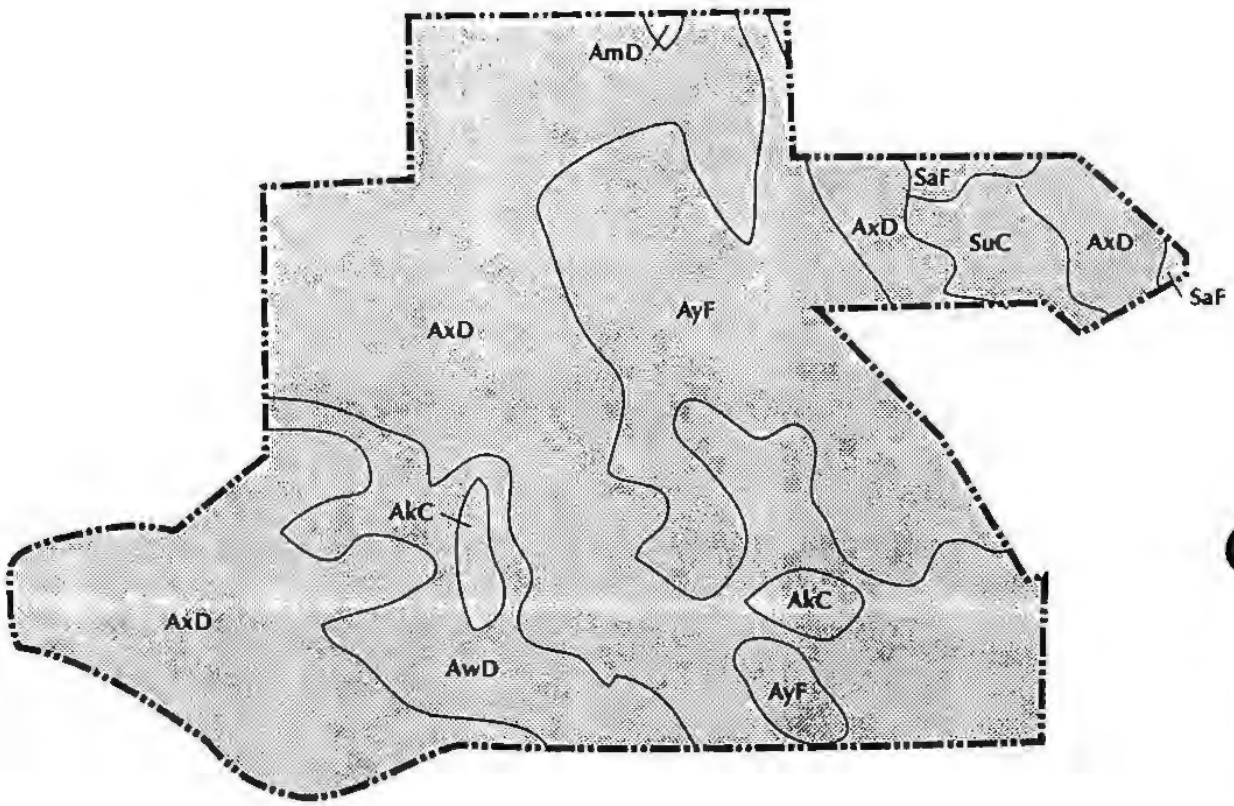
Argonaut Very Rocky Loam, 3-30% Slopes (AmD) This soil has slopes of dominantly less than 15 percent. The surface is strong brown to yellowish-red. Permeability is very slow. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. The available water holding capacity is about 2.5 to 4.0 inches, but the clay subsoil restricts root movement and available moisture.

Argonaut Gravelly Loam, 2-15% slopes (AkC) This soil is similar to Argonaut very rocky loam except that less than 5 percent of the surface has outcrops of bedrock. Permeability is very slow. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. The available water holding capacity is about 2.5 to 4.0 inches. The effective rooting depth for most



MAP FROM URBAN GEOLOGY, CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE EARTHQUAKE INTENSITY MAP | **FIGURE D2**



AkC	Argonaut Gravelly Loam, 2-15% Slopes
AmD	Argonaut Very Rocky Loam, 3-30% Slopes
AwD	Auburn Silt Loam, 2-30% Slopes
AxD	Auburn Very Rocky Silt Loam, 2-30% Slopes
AyF	Auburn Extremely Rocky Silt Loam, 3-70% Slopes
SaF	Serpentine Rock Land
SuC	Sobrante Silt Loam, 3-15% Slopes

SOILS MAPPED PREPARED BY SUGNET & ASSOCIATES

STUDY AREA SOILS MAP	FIGURE D3

plants is 20 to 30 inches, although the clay subsoil restricts root movement and available moisture.

Auburn Very Rocky Silt Loam, 2-30% Slopes (AxD) This soil is gently sloping to moderately steep. Outcrops of bedrock cover 5 to 25 percent of the surface. The surface layer is brown-reddish brown silt loam. Permeability is moderate. Surface runoff is slow to medium, and the erosion hazard is slight to moderate. The available water holding capacity is 2 to 4 inches. The effective rooting depth is 12 to 26 inches.

Auburn Silt Loam, 2-30% Slopes (AwD) This soil has slopes that are dominantly between 5 and 15 percent. It is similar to Auburn very rocky silt loam, 2 to 30 percent slopes except that less than 5 percent of the surface is exposed bedrock.

Auburn Extremely Rocky Silt Loam, 3-70% Slopes (AyF) This soil has slopes that dominantly range from 15 to 50 percent. It is similar to Auburn very rocky silt loam except that 25 to 50 percent of the surface has rock outcrops and the depth to bedrock ranges from 12 to 20 inches. The available water holding capacity of this soil is 2 to 4 inches. Surface runoff is slow to very rapid, and the erosion hazard is slight to very high. The effective rooting depth is 12 to 20 inches.

Sobrante Rock Land (SaF) This soil occurs in areas of highly resistant serpentine and other ultrabasic rock formations. Rock outcrops and stones make up from 50 to 90 percent of the surface, and there is a thin mantle of soil. This land type is undulating to very steep. Included with this miscellaneous land type, above an elevation of 1,000 feet, are small scattered areas of a soil that has a surface layer of reddish-brown, slightly acid loam and a subsoil of reddish-brown, yellowish-red, neutral very gravelly heavy clay loam and clay. This soil is excessively drained. Surface runoff is very rapid, and the erosion hazard is slight to moderate.

TOPOGRAPHY

The 1223.1 acre study area is situated in gently rolling terrain characteristic of the lower Sierra foothills. As depicted in Figure D_, elevation of the study area ranges from a high of ±1,469 feet above mean sea level (msl) on the north-south ridge which traverses the eastern side the study area, to a low of ±760 feet msl near Carson Creek in the extreme southwestern corner of the study area. As shown in Figure D5, the steepest slopes in the study area occur on the sides of the north-south ridge which divides the site.

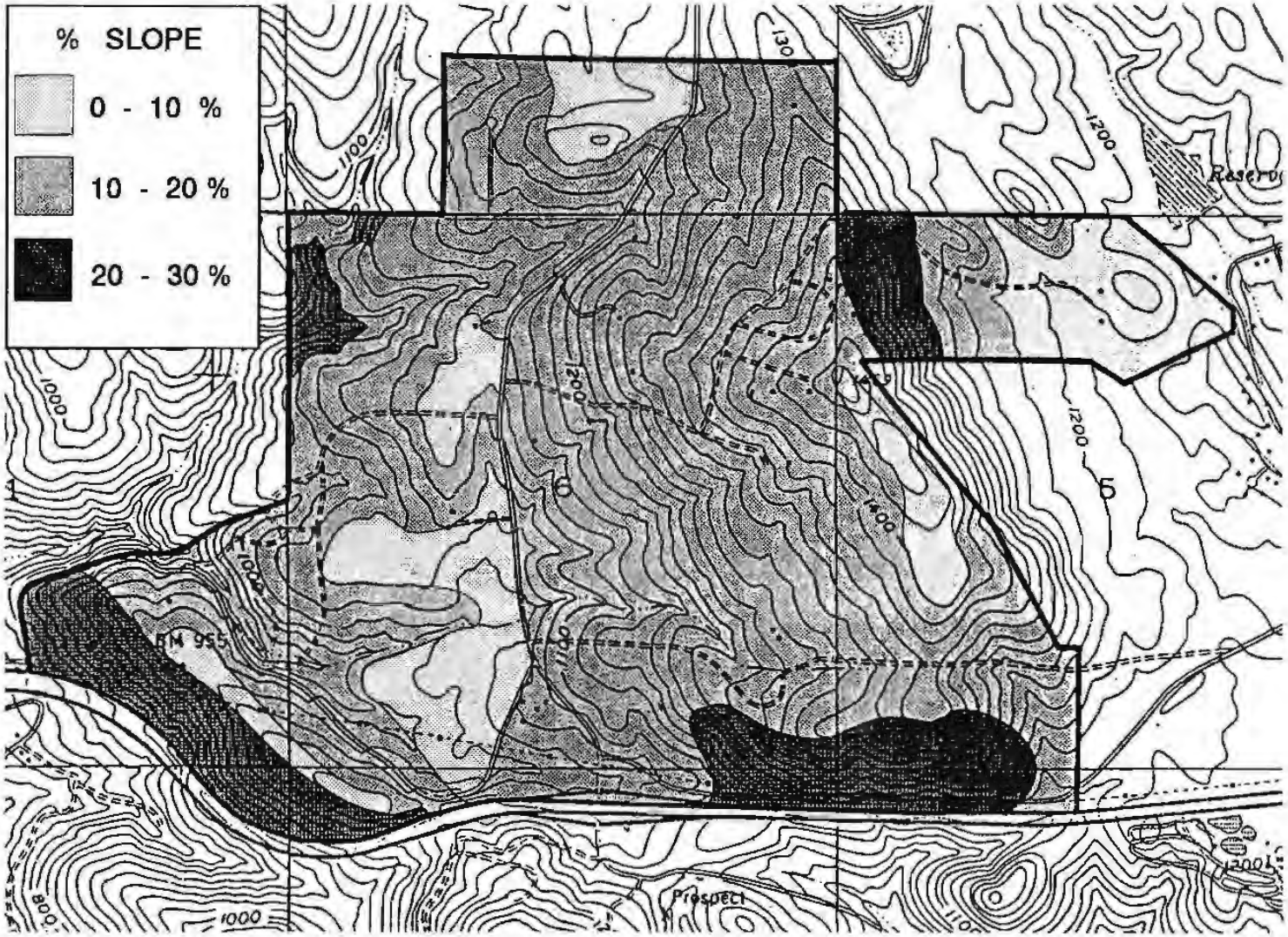
AGRICULTURAL CLASSIFICATION OF STUDY AREA SOILS

Soil Capability Classes Soil capability classes, which range from I-VIII, are used to represent the relative ability of individual soils to support farm crops, and more specifically to identify limitations of individual soils. Specific limitations are identified by a small letter following the classification numeral. Letters include "e" to designate erosion problems; "s" to designate shallowness or stonyness; and "w" to designate water complications. Soils classified in higher capability classes generally pose greater limitations to agricultural use than those with lower ratings. Soil capability classifications for the soils which occur on the project site are presented in Table D1.

Storie Index The Storie Index is a rating system used to rate soils according to their suitability for agricultural use. The Storie Index ranges from 0-100 with the most agriculturally valuable soils having the higher scores. Storie classification is based on soil profile, texture, slope, and "other" considerations. Storie Indexes for the soils which occur on the project site are presented in Table D1.

No prime agricultural soils exist in the study area.

STUDY AREA TOPOGRAPHY MAP | **FIGURE D4**



STUDY AREA SLOPE MAP | **FIGURE D5**

TABLE D1
AGRICULTURAL CLASSIFICATION OF STUDY AREA SOILS

Soil Name	Capability Class	Storie Index
Argonaut Gravelly Loam, 2-15% Slopes	IVe-3	28
Argonaut Very Rocky Loam, 3-30%	VIs-1	21
Auburn Silt Loam, 2-30% Slopes	IVe-8	28
Auburn Very Rocky Silt Loam, 2-30%	VIs-1	8
Auburn Extremely Rocky Silt Loam, 3-70%	VIIs-1	4
Serpentine Rock Land	---	--
Sobrante Silt Loam, 3-15% Slopes	IIIe-8	40

SOURCE: Soil Survey of El Dorado Area, California.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] The Bass Lake study area is subject to seismically induced groundshaking. Development of the study area will increase the number of people and value of personal property exposed to this phenomena. The potential for seismic events in the study area cannot be reduced, and thus future residents cannot be isolated from such phenomena.

Implementation of mitigation measures D01 and D02 will reduce the chance of loss of life or substantial property damage induced by seismic events to an acceptable level.

[M] As a consequence of the scattered rock outcrops and shallow depth to rock, blasting could be required to facilitate development. There are a variety of potentially adverse impacts which can accompany blasting, most notably noise and ground vibration. Noise impacts associated with blasting are addressed in the noise section of this report.

If blasting is required, potential adverse impacts will be mitigated to a less than significant level by implementation of measures D03.

[M] Development will require grading. This activity will remove vegetation and expose soils increasing the susceptibility of the site to erosion.

This impact would be mitigated to a less than significant level by implementation of measures D04 and D05.

MITIGATION MEASURES

D01 Each project within the Bass Lake Road study area will retain a geotechnical engineer to identify soil constraints and make recommendations regarding development of roadways, foundations, and other structures. Each engineer will be required to submit documentation of field evaluation of facilities to the Department of Transportation.

D02 El Dorado County requires that structures be constructed to the standards of the Uniform Building Code (UBC). The required strength of these structures is intended to be adequate to withstand a seismic event of the probable maximum expectable intensity predicted for the region. To this end, the County requires that each structure be approved prior to construction and inspected prior to occupation.

D03 The necessity for blasting will be determined on a project by project basis. In instances where blasting is required, the affected project will obtain appropriate permits from the County. Blasting will be performed only by professional firms in accordance with pertinent regulations.

D04 Prior to development, each project will submit a Grading Plan to the El Dorado County Planning Department and Department of Transportation for review and approval.

D05 Grading, trenching, and similar construction activities which involve disturbance of the soil will be performed in accordance with the provisions of County Ordinance 3983. The ordinance specifies that such activities be restricted to the summer season and/or extended periods of dry weather. Filter berms, sandbag or hay bale barriers, culvert risers, filter inlets, and/or sediment detention basins will be utilized as appropriate during construction to protect area waterways from siltation and debris. All open ditches or developed swales will be appropriately vegetated or lined with coarse rock.

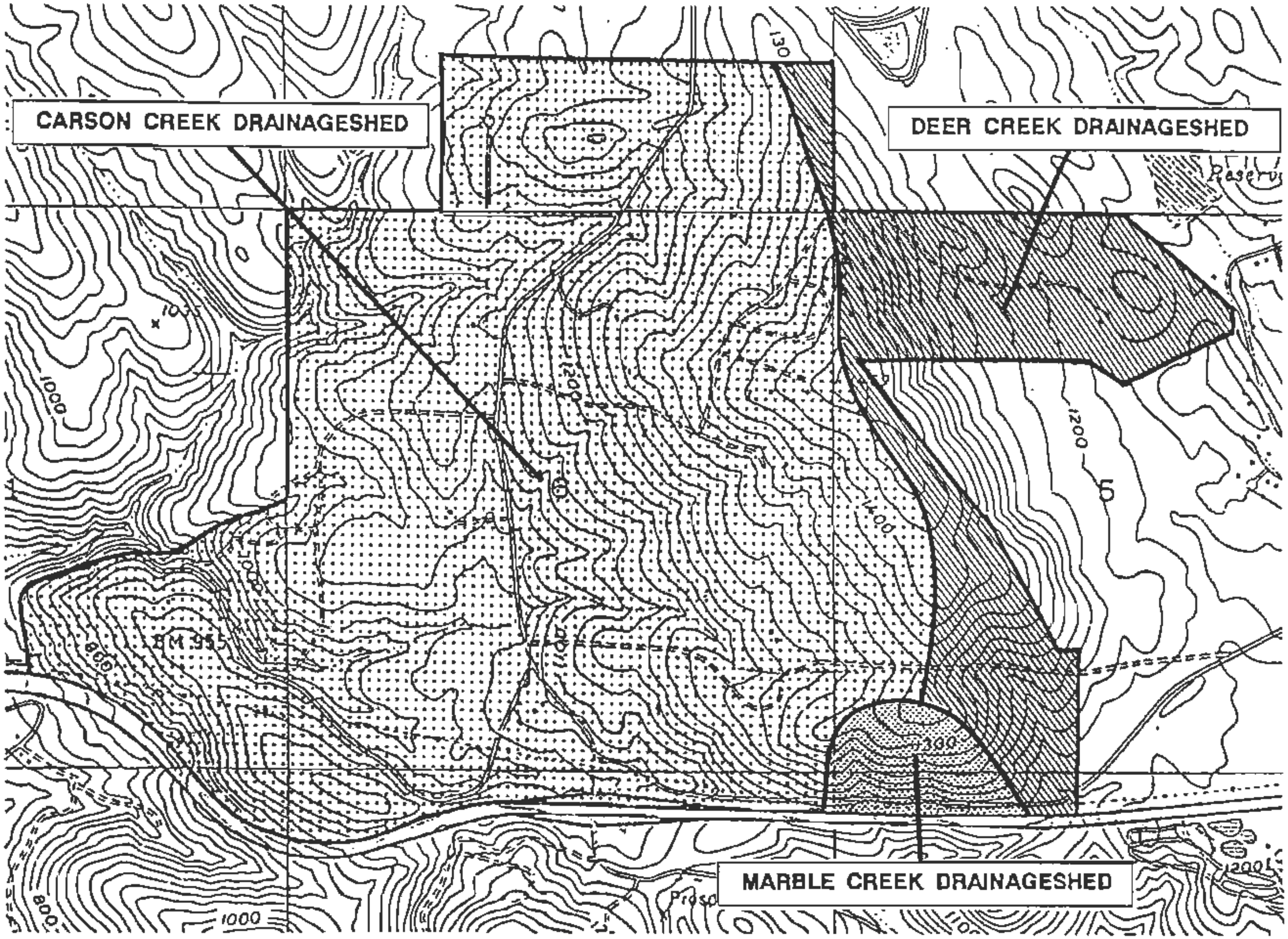
HYDROLOGY AND WATER QUALITY

HYDROLOGY

The major topographic feature of the Bass Lake study area is a north-south ridge which divides the area into separate drainage. The majority of the study area (±86%) drains west to Carson Creek. Aside from a small portion of the hillside in the southeast corner of the plan area which drains south under Highway 50 to Marble Valley, the remainder of the study area drains east to Cameron Park, and ultimately to Deer Creek. These drainages are shown in Figure E1.

Runoff from the portion of the study area which drains east is captured by the storm drain system constructed in the Bar J Ranch (Camarado Oaks) subdivision. The storm drain conveys water southeast beneath Country Club Road and into a sediment basin on the south side of the road. The sediment basin discharges into a channel which flows west through Cameron Park North Unit 5, passing beneath Knollwood Drive and Cambridge Road. Below Cambridge Road, the channel continues southeast passing under Highway 50 where it returns to a more unkept condition as Deer Creek. Immediately south of Highway 50, Deer Creek passes beneath Cameron Road. Downstream of Cameron Road, Deer Creek meanders southwest through a predominantly rural setting until emptying into the Cosumnes River near Elk Grove.

All of the project area located in the Deer Creek Drainage is located within subwatershed 40 of the Cameron Park watershed and was examined by the hydrologic analysis prepared for Cameron Park. In its undeveloped condition, the ±446 acre subwatershed was characterized as having an average slope of 8.5% with grass and oak-grass vegetation. The 100 year peak flow from the undeveloped watershed was calculated to be 340 cubic feet per second (cfs). Under fully developed conditions, including development of the portion of the Bass Lake study area in the watershed, the hydrologic analysis indicates that 100 year peak discharge from subwatershed 40 would increase to 386 cfs.



STUDY AREA DRAINAGESHED MAP | **FIGURE E1**

Since preparation of the Cameron Park hydrologic study, all of subwatershed 40 except that included in the study area has been developed to residential land use. Review of existing facilities by Cooper, Thorne & Associates indicates that drainage facilities in Cameron Park have been sized to accommodate runoff generated by buildout of the watershed, including the presently undeveloped portion of the subwatershed in the study area. Existing downstream facilities which were reviewed include:

- the double 7'x3' box culvert beneath Country Club Road
- the 84" diameter culvert beneath Knollwood Drive
- the three 60" diameter culverts beneath Cambridge Road
- the 10'x 7' rectangular culvert beneath Highway 50
- the 96" CMP beneath Cameron Road

All of these facilities except the culvert at Cameron Road were found to be adequately sized to accommodate runoff volumes predicted to occur under buildout conditions, including development of the portion of the study area within the Cameron Park watershed. The only facility examined which has not been improved to accommodate buildout flows is the 96" CMP beneath Cameron Road. This facility is estimated to be approximately one-half of the size required to convey 100 year storm event peak flows under existing conditions.

The firm of Cooper, Thorne & Associates was retained to prepare a drainage study for the study area. A copy of their drainage analysis is appended to this EIR, and persons requiring detailed hydrologic data are referred to the appended report. As shown in Figure E1, the upper drainageshed of the Carson Creek watershed encompasses approximately 2,000 acres situated in a basin created between the north-south ridge in the study area and a comparable ridge located to the west in the El Dorado Hills Specific Plan. Approximately one-half of this drainage basin is included in the El Dorado Hills Specific Plan. Although Carson Creek is naturally an intermittent watercourse, discharge from Bass Lake reservoir provides sufficient flows to make it a perennial stream. Carson Creek drains southwesterly along the western side of the study area until crossing under Highway 50 near Clarksville. Continuing southwest, the creek enters Coyote Creek ±7 miles downstream from the study area. Coyote Creek in turn

joins Deer Creek about one mile below that location. Deer Creek ends near the community of Elk Grove where it outlets into the Cosumnes River near the Sacramento-San Joaquin Delta.

Presently, there are very few storm runoff conveyance structures in the drainage basin. Proposed development in the El Dorado Hills Specific Plan will utilize a system of detention ponds to contain excess storm runoff during heavy storms, thus maintaining pre-project flow conditions downstream of the Specific Plan area.

To determine storm runoff flows from the study area, a unit hydrograph analysis was prepared. For comparison, two different methods for calculating the catchment lag time were used; the Soil Conservation Service (SCS) and the US Army Corps of Engineers formula. The rainfall intensity data used is from El Dorado Rainfall Data, dated July 24, 1989. From the information available, comparisons were made between the undeveloped discharge and the developed discharge for the 100 year storm event. Total storm runoff was the same for both methods, but the peak flow (Q) resulting from the Corps method was higher. For this analysis, the higher Q value was used.

The Antecedent Moisture Condition used was (AMC) 3. The Mannings friction factor used for the undeveloped basin was N=0.030. Since increased flows from the El Dorado Hills Specific Plan portion of the drainage basin will be retained, and interpolated value of N-0.029 was used. The storm rainfall distribution pattern used was for arid-semiarid climates. the "S" graph used for the unit hydrograph was for a foothill zone. Soil Group B was used to determine the Curve Number for the soil complex.

Since the study area is largely undeveloped, drainage channels which exist are intermittent, flowing only during the winter season or following major storms. Existing residences do not discharge sufficient water to generate any meaningful discharge, and consequently, existing runoff is largely a function of the natural characteristics of the area. The drainage analysis indicates that, under existing conditions, the 100 year storm event produces 148 acre-feet of runoff with a peak discharge rate of 1,441 cubic feet per second.

Development will unavoidably alter the hydrologic characteristics of the study area, increasing the volume of water which leaves the area as runoff. The principal cause of this increase will be the increase in impervious surface created by driveways, roofs, and streets. Year round flows in the intermittent drainages will be created by irrigation of lawns and landscaped areas, watering of gardens, washing of cars, and other domestic chores. During periods when there is relatively little precipitation, this increase would be hydrologically insignificant and can be handled by the existing channels. However, during major storm events the increased runoff characteristics could produce flows which exceed the channel capacity, and thus, contribute to flooding. The analysis indicates that, under developed conditions, the 100 year storm event will produce 180 acre-feet of runoff from the study area with a peak discharge rate of 1,773 cubic feet per second.

The Carson Creek channel was examined to determine if capacity exists to accommodate predicted flows, and where, if any, facility improvements would be warranted. This review indicated that capacity exists at both Highway 50 (3-10'x10' box culverts) and at the White Rock Road bridge to accommodate future flows. However, due to erosive high velocities and supercritical flows, the section of channel located approximately one-fourth of a mile downstream of the White Rock Road bridge (adjacent to the trailer park) is inadequate to handle a 100 year storm event under existing conditions, and would be adversely impacted by any increase in volume. Because of the relatively low elevation and proximity of the trailer homes to the channel, substantial modifications would be required to rectify the situation to a level that would adequately convey flows generated under existing conditions. Consequently, in order to avoid any exacerbation of the substandard downstream condition, it is recommended that the project provide mitigation within the study area

GROUNDWATER

Groundwater mapping of the project vicinity has not been prepared, and consequently, the contribution of infiltration from the site to the local aquifer cannot be quantifiably evaluated.

However, according to Evaluation of Groundwater Resources: Sacramento Valley, "*igneous and metamorphic rocks of the Sierra Nevada form the eastern boundary of the* [Sacramento Valley groundwater] *basin. Runoff from these relatively impermeable rock contributes large quantities of water to the valley, but the rocks themselves yield little or no water to wells.*" Perched aquifers in the foothill region occur in locations where infiltration occurs above an underlying layer of impermeable material. Perched aquifers tend to be local in scale, subject to seasonal fluctuation, and often evidenced by springs or seeps. Field investigation identified several small seeps in the Bass Lake area. The source of the water which feeds these seeps is not documented. In once instance, a portion of the water obviously originates from a livestock trough.

WATER QUALITY

Since the majority of the project area is undeveloped, runoff is assumed to be of relatively good quality. Field investigation identified only isolated exceptions to this situation, most notably, at locations where intermittent drainages traverse heavily pastured areas. Review of pertinent literature failed to locate water quality data which could be characterized as representative of runoff from the project site. Recognizing that numerous homes are scattered throughout the project area, existing runoff undoubtably contains some level of pollutants generated by residential use, including derivatives of petroleum, phosphates, nitrates, metals, pesticides, herbicides, etc. Development will increase the level of these contaminants which are transported from the site.

Information presented in CONTROLLING URBAN RUNOFF: A Practical Manual for Planning and Designing Urban BMPs indicates that a large proportion of the pollutants found in runoff from exposed areas originates from atmospheric deposition and not land use. This information is particularly pertinent since western El Dorado County is located on the downwind fringe of the developing Sacramento metropolitan area and adjacent to the Highway 50, both of which represent significant sources of airborne contaminants.

Predicted changes in contaminant transport which would result from development of the project site are presented in Table E1. These estimates are calculated using pollutant concentrations recorded in runoff from the Sacramento area and/or recommended concentrations identified in the Nationwide Urban Runoff Program. As indicated, the majority of pollutants are presumed to be the result of increased runoff rather than increased concentrations.

Mitigation of water quality impacts from non-point sources is an evolving art which requires intuitive design as well as technical engineering. The traditional storm drain system, which provides no opportunity for infiltration or settling, and discharges directly into a waterway, is the antithesis of water quality protection. Water quality protection and treatment can generally be divided into three types of measures. These include: 1) measures which minimize pollutant transport at the source, 2) those which provide opportunities for debris removal from channelized flow, and 3) those which provide removal of metals and pollutants in solution.

The most effective method of reducing the pollutant load which leaves a site is to reduce runoff. Minimizing impervious area and creating opportunities for infiltration are the most effective measures in this category. Examples of measures include: limits on the size of building footprints, waiving the requirement for curb, gutter, and sidewalks, or permitting narrower streets in selected subdivisions. Placement of infiltrators or dry wells below downspouts can be effective in infiltrating runoff from small storm events and the "first flush" component of runoff from larger storms.

The opportunity to remove sediment and debris from runoff is greatest while flows are small. Since many urban contaminants are attached to sediment particles, sediment removal is also effective in reducing pollutant levels. Preservation and/or development of vegetated filter strips, buffer areas, and natural swales can be instrumental in filtering debris from runoff before it reaches channelized drainageways. The irregular surface of these areas also aids in lengthening the time to peak concentration (Tc) and thus reduces the magnitude of peak flow.

TABLE E1
ESTIMATION OF URBAN STORM POLLUTANT EXPORT

	Existing Condition	Developed Condition
Site Data		
Precipitation (inches/year)	35.0	35.0
Pj (correction factor)	0.90	0.90
Rv (runoff coefficient)	50	69
Site size (acres)	1223	1223
Annual Runoff (Acre-Feet)	160,519	221,516

	Conc. (mg/l)	Pollutant Export (pounds/acre/year)		Net Change
Total N	3.31	1181.7	1630.8	+ 449.1
Total P	0.46	164.2	226.6	+ 62.4
BOD	11.9	4248.5	5862.9	+ 1614.4
Oil and Grease	3.0	1071.1	1478.1	+ 407.0
Arsenic	0.01	1.8	2.5	+ 0.7
Cadmium	0.0019	0.7	0.9	+ 0.3
Chromium	0.04	15.5	21.3	+ 5.9
Copper	0.04	15.3	21.1	+ 5.8
Lead	0.14	49.1	67.7	+ 18.6
Mercury	0.00035	0.1	0.2	+ 0.0
Nickel	0.05	16.8	23.2	+ 6.4
Zinc	0.28	98.3	135.6	+ 37.3

SOURCE: Simple Method for Estimation of Urban Storm Pollutant Export Controlling Urban Runoff: A practical Manual for Planning and Designing Urban BMPs. Schueler, Thomas R. July 1987.

Urban Runoff Discharges from Sacramento California 1984-85

Creation of small check dams along a drainage will enhance sediment settling. Detention basins can be optimally designed to facilitate settling and infiltration.

Ultimate treatment is provided by wetland areas where runoff has a relatively long contact time. Vegetation in these areas, such as rushes and cattails, are especially effective in removing heavy metals and contaminants which are in solution and not susceptible to settling. Development, maintenance, and operation of such marsh areas can be extremely prohibitive, and consequently, implementation of these is generally limited to projects which have unusually severe water quality impacts.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[L] Development will increase the volume of runoff from the study area into the Deer Creek drainageshed. The Cameron Park storm drain system is sized to accommodate runoff from the project. The project will contribute an insignificant amount (<1%) to the volume of runoff which currently exceeds the capacity of the CMP at Cameron Road.

No mitigation is required.

[M] Hydrologic analysis indicates that development of the study area will increase the volume of runoff generated within the Carson Creek drainage during a 100 year storm event by ±32 acre-feet with an accompanying 23% increase in flow rate (cfs). Examination of Carson Creek has indicated that insufficient capacity exists downstream of the study area to accommodate this increase.

Measure E02 will preventexacerbation of the potential flooding situation created by the substandard channel segment located downstream of the study area.

[L] Development will decrease the surface area available for infiltration. Because the study area is underlain by impervious material, minimal infiltration naturally occurs and the study area is not recognized as a groundwater recharge zone. The predicted decrease in infiltration will not adversely impact regional groundwater resources.

No mitigation is required.

[M] Project implementation will adversely impact runoff quality. Construction has the potential to generate sediment and debris, contributing to short term degradation of runoff quality from the study area. Development will eliminate livestock contamination of intermittent drainages, but will introduce urban contaminants resulting in the long term degradation of runoff quality.

Potential construction impacts will be mitigated to a less than significant level by implementation of measures **D04** and **D05**. Long term degradation of runoff water quality is an unavoidable consequence of residential development that cannot be entirely avoided, but will be mitigated to an acceptable level by mitigation measures **E01**, **E02**, and **E03**.

MITIGATION MEASURES

D04 Prior to development, individual projects will submit a Grading Plan to the El Dorado County Department of Transportation for review and approval.

D05 Grading, trenching, and similar construction activities which involve disturbance of the soil will be performed in accordance with the provisions of County Ordinance 3983. The ordinance specifies that such activities be restricted to the summer season and/or extended periods of dry weather. Filter berms, sandbag or hay bale barriers, culvert risers, filter inlets, and/or sediment detention basins will be utilized as appropriate during construction to protect area

waterways from siltation and debris. All open ditches or developed swales will be appropriately vegetated or lined with coarse rock.

E01 Drainage will be conveyed in vegetated swales. Installation of closed storm drains is not proposed. Except to cross community roadways, culverting of the natural drainages will not be allowed. Consistent with mitigation identified in the El Dorado Hill Salmon Falls Area Plan, all projects in the study area will provide "*Non-building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds, should be observed as recommended by the County Health Department.*"

E02 Each project will provide detention adequate to maintain pre-project flow conditions. Although individual projects in the Bass Lake study area may elect to provide individual detention facilities, it is recommended that a single facility serving the entire study area be constructed. The appended hydrologic analysis indicates that construction of a detention facility with ±40 acre-feet of capacity will provide adequate mitigation to prevent exacerbation of the potential flooding situation created by the substandard channel segment located downstream of the study area. The proposed facility would be located at the site of the existing pond in the south central portion of the study area. Although the entire study area would not discharge to this pond, adequate detention could be provided to compensate for increased flows from the area outside of the facility's drainageshed.

E03 Consistent with the methodology identified in CONTROLLING URBAN RUNOFF: A Practical Manual for Planning and Designing Urban BMPs, each project will submit a Best Management Practices (BMP) plan which specifies the measures which will be implemented to protect water quality. These measures will be identified on Tentative Maps and adopted as Conditions of Approval.

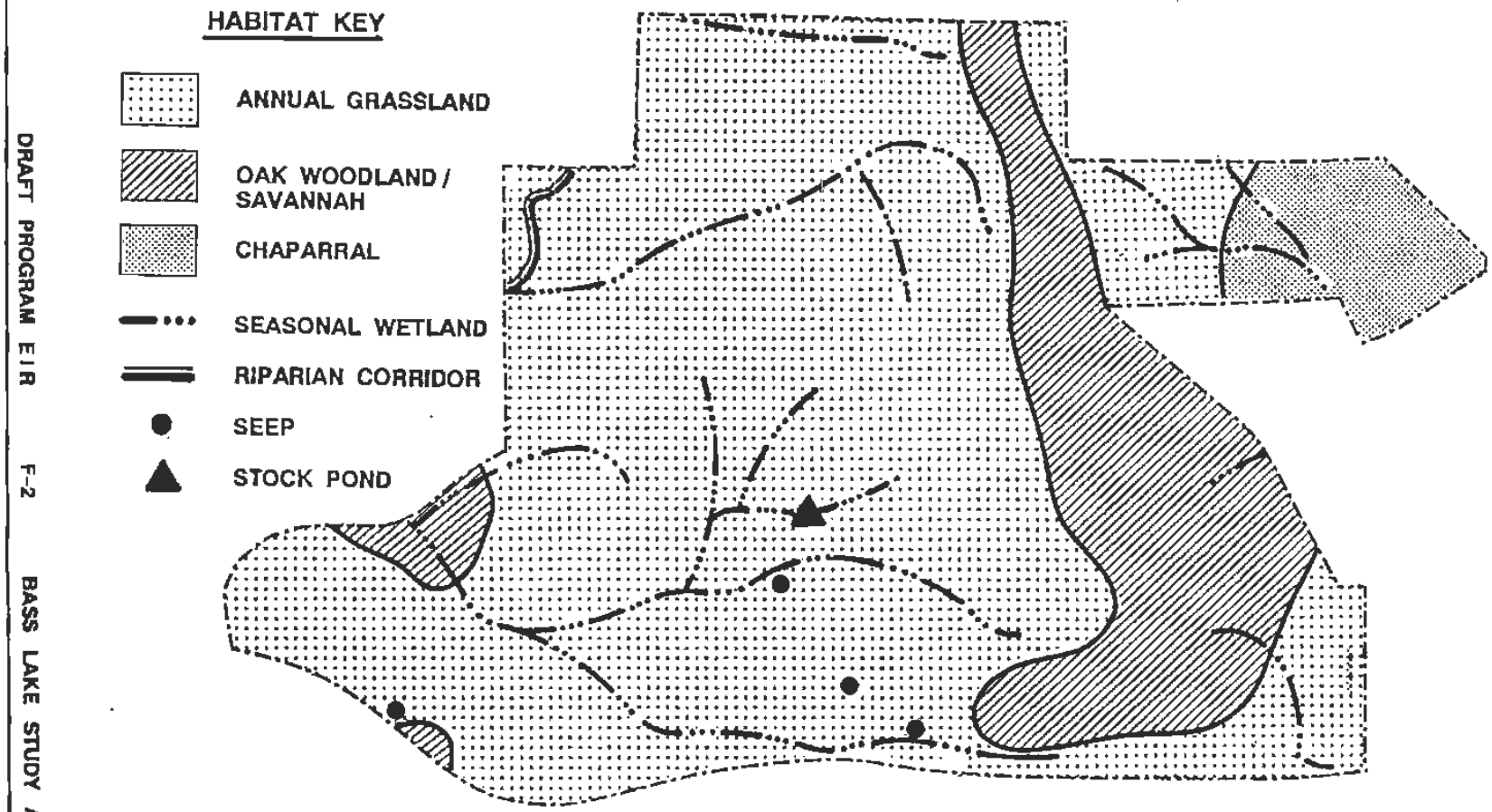
VEGETATION AND WILDLIFE

Biological assessment of the Bass Lake study area was performed by the firm of Sugnet & Associates. Their report is appended to the EIR for reference. This section has been prepared using information from the Sugnet & Associates assessment as well as resources of R. C. Fuller Associates. A data search of the California Department of Fish and Game's Natural Diversity Data Base (NDDB) was performed to ascertain the possible existence of special status species in the project vicinity. Biological investigations of the study area were conducted by Sugnet & Associates in July 1990 and January 1991, periods when potential special species would have been identifiable to biologists. During these surveys, emphasis was on identification of any of the special status species reported to occur in the vicinity.

VEGETATION

The natural community of the Bass Lake study area has been substantially altered from that of oak woodland which was once dominant. As was common practice, woodland was cleared to facilitate grazing, provide timber for buildings, and firewood for fuel. Fences were erected, roads constructed, and other impacts typically associated with settlement and rural use of the area occurred. Existing vegetation associations identified within the Bass Lake Road study area include 1) Annual grassland, 2) Oak woodland/savannah, 3) seasonal wetlands, 4) riparian corridor, 5) stock ponds, and 6) chaparral. The distribution of these habitats is depicted in Figure F1.

Annual Grassland. Throughout the Central Valley, native grasses have been largely displaced by more vigorous European species introduced in the late 1800's to enhance grazing. Although some native grasses, such as purple needle grass (Stipa pulchra), still exist in isolated areas, European grasses have become indigenous and dominant in virtually all of the principal grassland habitats in the region. The most prevalent European grasses include medusa head (Elymus caput-medusae), goat grass (Ageilops triuncialis), wild oat (Avena barbata), soft chess



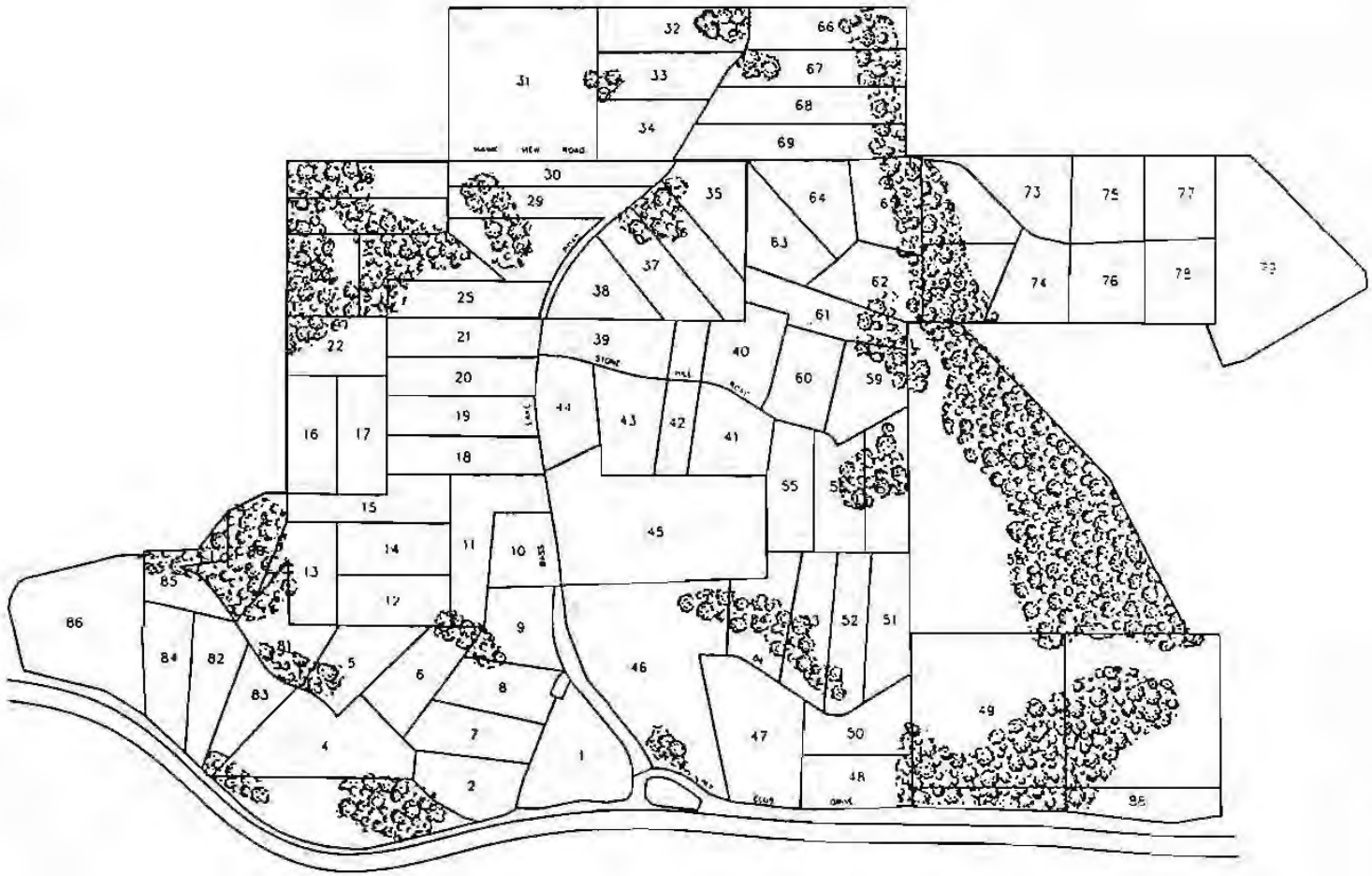
HABITAT DISTRIBUTION MAP | FIGURE F1

(Bromis mollis), fox-tail barley (Hordeum leporinum), fox-tail fescue (Vulpia myuros) and ripgut brome (B. diandrus). Shrubs such as coffeeberry (Rhamus californica) and poison oak (Toxicodendron diversiloba) grow atop the rock outcroppings which are scattered in the grassland of the study area. Common forbs including star thistle (Centaurea solstitialis), tar weed (Holocarpha virgata), rose clover (Trifolium hirtum), and broad leaf filaree (Erodium botrys) are interspersed in grassland area. These species are more dominant on parcels where grazing has suppressed competing grass species.

Oak Woodland/Oak Savannah. Aside from two isolated groves in the western portion of the study area, Oak woodland in the study area is limited to the higher elevations of the north-south ridge which traverses the property. Blue oak (Quercus douglasii), valley oak (Quercus lobata) dominate the canopy with occasional live oaks (Quercus wislizenii) and mature buckeyes (Aesculus californica). The oak woodland is characterized by trees with diameter breast heights (dbh) of 30-40 inches and a healthy middle story of oak saplings under 6" in diameter (dbh). Coffee berry and poison oak occur sporadically in the understory, while fox-tail barley, dog tail grass (Cynosusrus echinatus) and ripgut brome compose the herbaceous layer.

The Oak Savannah habitat differs from Oak Woodland by the lack of understory, and the herbaceous layer includes grasses common to Open Grassland. On the site, the Oak Savannah canopy is composed of blue oaks, valley oaks, and live oaks. The herbaceous layer supports soft chess, dog tail grass, and ripgut brome. Major large native tree concentrations are shown in Figure F2.

Seasonal Wetlands. The firm of Sugnet & Associates was retained to determine the nature and extent of wetland and related resources within the Bass Lake study area. Site investigation identified 8 to 12 acres of seasonal wetland resources including 1) intermittent drainages, 2) adjacent seasonal wetlands, and 3) seeps. These resources are potentially subject to regulation by the U.S. Army Corps of Engineers under the provisions of Section 404 of the Clean Water Act. Individual developments will be subject to 404 regulation prior to their implementation.



DISTRIBUTION OF WOODED AREA | **FIGURE F2**

Intermittent drainages convey water during the winter season and for short periods of time following major storms. The frequent occurrence of tailing piles along these drainages indicates that they were mined at some time in the past, likely for the gold bearing sands which occur in many streams in the region. Vegetation in the drainages is dominated by annual rye grass (Lolium multiflorum), dog tail grass, nut grass (Cyperus sp.) and Goldback fern (Pityrogramma trianfularis). Blue elderberry (Sambucus mexicana), willow (Salix sp.), and valley oak (Quercus lobata) occur at infrequent intervals along these drainages.

Adjacent seasonal wetlands include swales and low areas which meet wetland criteria. These areas are located adjacent to the intermittent drainages. Representative vegetation includes rye grass, bermuda grass (Cynodon dactylon), baltic rush (Juncus balticus), and prickly lettuce (Lactuca serriola).

Three *seeps* were identified in the southern portion of the project area. As discussed in the Hydrology section of this report, the source of the water which feeds these seeps is not documented, but it is suspected that it partially originates from septic leach fields serving local residences. The moisture from these seeps supports pointed rush (Juncus oxymeris), sedges (Carex sp.), loosestrife (Lythrum hyssopifolia), and centaury monterey (Centaurium muehlenbergii).

Riparian Corridor. The only riparian habitat occurring on the project site is a corridor created where Carson Creek traverses the northwest corner of the property. The creek is bounded by stands of valley oak, willow, and digger pine (Pinus sabiniana). Ground cover adjacent to the creek is dominated by yellow-bristle grass (Setaria glauca), Vasey's coyote thistle (Erygium vaseyi), and spikerush (Eleocharis sp.)

Stock Pond. Two ponds are located within the Bass Lake Road study area. Both of these ponds are artificial, presumably created as water sources for livestock. The ponds are typical of stock ponds in the region. Prominent vegetation includes willows, spike rush, water smartweed (Polygonum amphibium) and cattails (Typha sp.).

Chaparral. Chaparral is a relatively unique habitat which is limited in distribution. Approximately 10-15 acres of chaparral occur in the portion of the study area that extends east to the Cameron Park vicinity. Vegetation in the chaparral habitat is dominated by dense stands of chamise (Adenostoma fasciculata). Toyon (Heteromales arbutifolia), yerba santa (Eriodictyon californica), and buckbrush (Ceanothus cuneatus) are other prevalent species in this association.

WILDLIFE

Biological investigations of the study area were conducted by Sugnet & Associates in July 1990 and January 1991, periods when potential special species would have been identifiable to biologists. During these surveys, emphasis was on identification of any of the special status species reported to occur in the vicinity. Because the species observed during these investigations represent only a small fraction of the vast number of possible occurrences, discussion in this section includes species which, although not sighted during the site investigation, are known to utilize habitats identified in the study area. A list of species occurring or potentially occurring in the study area is provided in the appended assessment.

Wildlife use of any area is largely a product of the habitat which exists in and around that area. Alteration of vegetation communities can have significant repercussions on resident wildlife populations. Historically, settlement of the Central Valley produced a significant reduction of the woodland communities which once dominated that region, and many wildlife species were displaced to the less settled areas of the foothills. Since that time, virtually all of the lower foothills have been converted to agricultural and rural use, and wildlife which remains in the region is generally compatible with those uses. Species which are sensitive to human presence, or which require extensive undisturbed habitat, have been displaced to the more remote areas of the Sierras. However, because of the extent of natural area which still exists in the study area, the area provides habitat for wildlife.

Grassland areas provide valuable forage areas for a variety of wildlife species, many of which rely upon surrounding vegetation types for cover and nesting. Ground dwelling species commonly associated with grassland habitat include Jackrabbit (Lepus californicus), California vole (Microtus californius), California ground squirrel (Citellus beecheyi), western fence lizard (Sceloporus occidentalis), and common garter snake (Thamnophis sirtalics). Four large western rattlesnakes (Crotalus viridus) were encountered in the grassland area during survey of the site. The presence of these species makes grassland areas valuable to raptors and larger mammals which utilize areas of heavier cover for nests or cover, but require open grassland areas for use as primary forage zones. Examples of these species include coyote (Canis latrans), black shouldered kite (Elanus caeruleus), red-tailed hawk (Buteo jamaicensis), and prairie falcon (Falco mexicanus).

Oak woodland and oak savannah habitats are particularly valuable to wildlife because they provide extensive cover and food supply for a wide variety of species, many of which require the more extensive cover not provided by adjoining grassland areas. Acorns are a valuable food source preferred by many species including acorn woodpeckers (Melanerpes), northern flickers (Colaptes auratus), scrub jays, western gray squirrel (Sciurus griseus), mule deer (Odocoileus hemionus), and many other species. Dead trees are essential to cavity-nesting species such as American kestrel (Falco sparverius), western bluebird (Sialia mexicana), and assorted piciformes. Acorn woodpecker and plain titmouse were common species encountered during the site investigation. Two barn owls (Tyto alba) were disturbed from daytime roosts in the oak woodland. A bald eagle (Haliiaeetus leucocephalus), a white-tailed kite (Elanus leucurus) and numerous California Quail (Lophortyx californicus) were observed during different visits to the site.

Although intermittent drainages are often perceived by the public as a valuable source of water for wildlife, because of their seasonal nature, such drainages do not provide water or forage when such attributes are most needed. Intermittent drainages

tend to convey water only during the winter or following major storms, periods when water is typically abundant in numerous locations. During the summer season, when sources of water are scarce, such drainages are dry and transformed into habitat comparable to grassland.

Although limited in occurrence, the seeps on the project site are of unique value to wildlife because they provide water and provide green vegetation during the dry season when other sources have dried up and withered. Species from the surrounding habitat likely frequent the seeps during the summer when water is scarce at other locations in the vicinity.

The riparian corridor which crosses the northwest corner of the study area provides high value habitat for waterfowl, raptors, mammals, amphibians, reptiles, and some fish. Common fish species which occur in local waterways include bluegill, green sunfish, brown bullhead, and various species of minnows or mosquito fish. The corridor following the stream provides cover, foraging and breeding habitat for numerous bird, mammal, reptile, and amphibian species. Because the stock ponds dry in late summer, wildlife usage is seasonal. Insects associated with the ponded water attract amphibians and water birds. The wildlife value of the ponds dramatically decreases in late summer when the ponds dry up. As a result of the seasonal character of the ponds, fisheries are likely limited to minnows or mosquito fish.

The dense nature of the chaparral plant community provides small to medium sized birds, mammals and reptiles with nesting sites and protection from such predators as coyote, red-tailed hawks and bobcat (Lyns rufus). Representative species observed around the ponds in the study area include brown and rufous-sided towhee and wrentits. The dense vegetation also provides browse for deer. Rattlesnakes, fence and coast horned lizards (Phrunosoma coronatum), are common members of the chaparral community.

SPECIAL STATUS SPECIES

Special status species include plants and wildlife which are officially afforded protection by the State and/or Federal government, plus those species considered by the scientific community to be in sufficient danger to warrant monitoring. Rare, Threatened, and Endangered are the most commonly recognized classifications used by the State and Federal government to designate plant or animal species requiring protection. These designations are presented in Tables F1 and F2.

TABLE F1
FEDERAL DESIGNATIONS FOR WILDLIFE AND PLANTS

Endangered: any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

Threatened: any species which is likely to become and endangered species within the foreseeable future throughout all or a significant portion of its range.

Category 1: Candidate for Federal listing. Taxa for which the Fish and Wildlife service currently has on file substantial information on the biological vulnerability (relating to autecology and distribution) and threat(s) to support the appropriateness of proposing to list the taxa as endangered or threatened species.

Category 2: Candidate for Federal listing. Taxa for which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

Category 3: Previously considered candidates and included on past lists, but now excluded. If the species was excluded because it is known to be extinct is included in Category 3A. If the species is taxonomically invalid or not meeting the definition as species is included in Category 3B. Species which are too widespread or not threatened at this time are include in Category 3C.

TABLE F2
STATE DESIGNATIONS FOR WILDLIFE AND PLANTS

WILDLIFE

Threatened: a native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

Endangered: a native species or subspecies of bird, mammal, fish, amphibian, or reptile, the prospects of survival and reproduction of which are in immediate jeopardy from one of more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease.

Species of Special Concern: Species of Special Concern include birds and mammals whose populations have exhibited unusual declines. A Species of Special Concern has o special legal status, but it is hoped that voluntary implementation of measures to protect these species can avoid the costly recovery efforts that might otherwise be required.

PLANTS

Rare: a native plant is considered to be Rare when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its environment worsens.

Threatened: a native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

Endangered: a native plant is considered to be Endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more sources.

Prior to field survey, a list of special status species which could potentially occur in the study area was compiled. This list included those species known to occur in conjunction with the specific habitats of the study area, as well as those species identified in the California Department of Fish and Game Natural Diversity Data Base (NDDB) as known to occur in the vicinity. The NDDB incorporates data from the *Inventory of Rare and*

Endangered Plants in California prepared by the California Native Plant Society. The California Native Plant Society (CNPS) is regarded as one of the foremost authorities on the status of native plants in the State, and is instrumental in monitoring native plant populations. The CNPS is responsible for development of the R-E-D classification system to evaluate the status of individual plant species. This classification system is presented in Table F3.

TABLE F3
CALIFORNIA NATIVE PLANT SOCIETY (CNPS) DESIGNATIONS

PLANT LISTS

LIST 1A: Plants presumed extinct in California
LIST 1B: Plants rare and endangered in California and elsewhere
LIST 2: Plants rare and endangered in California, but more common elsewhere
LIST 3: Plants about which we need more information
LIST 4: Plants of limited distribution (a watch list)

R-E-D CLASSIFICATION SYSTEM

RARITY [R]
1 Rare, but found in sufficient numbers and distributed widely enough that extinction or extirpation is low at this time.
2 Occurrence confined to several populations or to one extended population.
3 Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

ENDANGERMENT [E]
1 Not endangered
2 Endangered in a portion of its range
3 Endangered throughout its range

DISTRIBUTION [D]
1 More or less widespread outside of California
2 Rare outside of California
3 Endemic to California

Special status plant species commonly associated with the chaparral habitat are listed in Table F4. This list does not indicate that any of these species have been identified in the vicinity, but rather that these are species which commonly occur in association with this habitat. During investigation of the chaparral habitat, extra effort was expended to ascertain the presence of these species. Similarly, the coast horned lizard (Phrynosoma coronatum frontale) is a California Department of Fish and Game Species of Special Concern associated with chaparral habitats. The continuing regional reduction in chaparral habitat is suspected to contribute to decline of coast lizard populations.

TABLE F4
SPECIAL STATUS PLANT SPECIES COMMON TO CHAPARRAL HABITAT

Species	Federal Status	State Status	CNPS Status	R-E-D code
Bisbee Peak rush rose (helianthemum suffrutescens)	C2	-	1B	2-2-3
El Dorado bestrow (Galium californicum sierrae)	C2	rare	1B	3-2-3
El Dorado mule ears (Wyethia reticulata)	C2	-	1B	2-2-3
Layne's butterweed (Senecio layneae)	C2	rare	1B	2-2-3
Parry's horkelia (Horkelia Parryi)	-	-	1B	3-1-3
Pine Hill ceanothus (Ceanothus Roderickii)	C2	rare	1B	3-2-3
Pine Hill flannelbush (Fremontodendron decumbens)	C2	rare	1B	3-2-3
Red Hills soaproot (Chlorogalum grandiflorum)	C2	-	1B	2-2-3
Stebbin's morning glory (Calystegia stebbinsii)	C2	E	1B	3-3-3

Special Status Species identified as potentially occurring throughout the study area include great blue heron (Ardea herodias), foothill yellow-legged frog (Rana boylei), yellow warbler (Dendroica petechia brewsteri), yellow breasted chat (Icteria virens), and willow flycatcher (Empidonax traillii), Townsend's western big-eared bat (Plecotus townsendii), and the pallid bat (Antrozous pallidus).

Birds of prey, including hawks, falcons, eagles, kites, and owls, are fully protected by law. This protection extends to individual birds as well their nests and eggs. Because of their migratory nature and wide foraging range, it is difficult to evaluate the extent of use an area may receive by various raptors in the vicinity. The study area provides open area and grassland which is necessary for foraging, as well as oak woodland, oak savannah, and riparian habitat which provides desirable nesting areas.

Lastly, survey for the valley elderberry longhorn beetle (Desmoscrus californicus dimorphus) was performed in the three elderberry plants discovered in the study area. The valley elderberry longhorn beetle (Desmoscrus californicus dimorphus) is an invertebrate species recognized as Threatened by the U.S. Fish and Wildlife Service, (1984). The beetle is only known to reproduce within the stems of elderberry (Sambucus sp.). However, elderberry is considered by many to be an undesirable weed species, and has been routinely removed to accommodate land development.

A search of the California Department of Fish and Game's Natural Diversity Data Base (NDDB) was performed to determine which, if any, special status species had already been identified in the vicinity. The data search indicated that four special status plants and one special status bird are known to occur within the area of the Clarksville 7.5' Quadrangle. These species include Tricolored Blackbird (Agelaius tricolor), Layne's Butterweed (Senecio Layneae), El Dorado County Mule Ears (Wyethia Reticulata), Bisbee Peak Rush-rose (Helianthemum Suffrutescens), and Pine Hill Flannelbush (Fremontodendron decumbens). All four of the identified plants are associated with chaparral habitat.

RESULTS OF THE BIOLOGICAL SURVEY

Survey of the chaparral habitat failed to locate any of the special status plant species or coast horned lizard identified as potentially occurring in that habitat. The absence of these species may be at least partly attributable to the fact that the listed species are generally associated with chaparral habitat occurring on Gabbro soils. The chaparral habitat in the study area occurs on serpentine soils.

A single great blue heron (Ardea herodias) was sighted in the Bass Lake study area. While not listed under either federal or state designations as endangered or threatened, and fairly common in the region, there is considerable concern that the increasing rarity of suitable colonial nesting sites may adversely impact the presence of the species in the region. No nesting sites were discovered.

The foothill yellow-legged frog (Rana boylei) is a California Department of Fish and Game Species of Special Concern which is known to occur in the project vicinity. Survey of the site failed to locate any foothill yellow-legged frogs.

No yellow warblers (Dendroica petechia brewsteri), yellow breasted chats (Icteria virens), or willow flycatchers (Empidonax traillii) were observed in the study area.

No Townsend's western big-eared bats (Plecotus townsendii) or pallid bats (Antrozous pallidus) were discovered in the study area. Investigation failed to locate any suitable roosting sites such as old buildings, caves, or mines. Nocturnal survey for these species was not conducted.

Investigation of the three elderberry plants in the study area did not reveal any evidence that beetles have ever been present on the site. The USFWS requires that elderberry habitat be protected in areas where beetles exist. In order to maintain suitable habitat in the region, policy further dictates that elderberry habitat be maintained in locations where beetles could exist even if they are not currently present. The USFWS

evaluates proposed removal of elderberry plants on a case by case basis, and may permit "incidental taking" of individual plants as long as acceptable mitigation is provided. Acceptable mitigation varies depending upon circumstances, but typically requires transplanting of existing plants and introduction of new plants to protected locations where viable habitat can be maintained.

A single adult bald eagle (Haliiaeetus leucocephalus) was observed foraging near the northern extent of the project area. This species is designated as Endangered at both the Federal and State levels. Eagles migrate from northern Canada and Alaska, spending the winter in the warmer climate of California. Because they are water birds, wintering eagles cluster along rivers and near lakes or reservoirs. Communication with the California Department of Fish and Game indicates that eagles are not uncommon in the Bass Lake vicinity during the winter. Eagles have exceptional eyesight, and in the absence of suitable perches near a body of water, perch in distant trees which provide unobstructed views of bodies of water. Such trees should be preserved wherever possible to maintain the viability of the winter habitat near bodies of water.

A red-tailed hawk (Buteo jamaicensis), numerous kestrels (Falco sparíverius), and a white-tailed kite (Elanus leucurus) have been spotted in the study area. Other raptors which are known to occur in the region but were not seen during survey of the area include: Swainson's hawk (Buteo swainsoni), Cooper's hawk (Accipiter cooperi), sharp-shinned hawk (Accipiter striatus), golden eagle (Aquila chrysaetos), and prairie falcon (Falco mexicans).

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Grading will be required for building pads, roadways, and utility trenches. This activity will expose soils making

them more prone to erosion. Erosion could contribute to degradation of aquatic habitat through siltation.

This impact will be mitigated to a less than significant level through implementation of measures **D04** and **D05**.

S Development of the Bass Lake study area will require disruption and/or loss of natural communities. Grading and removal of vegetation to accommodate homes, streets, and facilities will disrupt approximately one-third of the area, while domestic landscaping will likely be planted over an additional 50% of the area. Following development it is anticipated that less than one-fourth of the area will support native vegetation. Wildlife species which are not compatible with these changes will be permanently displaced from the study area. Species which are less sensitive to human environments will adapt to the new conditions and continue to occupy the area. Even if areas are set aside for wildlife, the presence of residential use in the vicinity will unavoidably impact these areas. Allowing pets which prey upon wildlife to run free, misuse of pesticides, herbicides, and fertilizers, and over-watering of native oak trees are examples of unintentional impacts which adversely impact natural areas in urban communities.

The inherent incompatibility of residential land use with natural areas cannot be fully resolved. The loss of wildlife habitat is an unavoidable impact which cannot be mitigated to a less than significant level. Although this impact cannot be reduced to a less than significant level, measures are proposed to protect individual resources.

Implementation of measure **F01** will provide protection to individual trees, but will not provide adequate mitigation to preserve the woodland habitat. Implementation of measure **E01** will ensure that natural swales continue to exist. Implementation of measure **F03** will provide protection of the wetland habitat on the project site.

[S] Implementation of the project will adversely impact the special status species known to occupy the area. The various raptors and the great blue heron will be impacted by the loss of foraging area. The raptors will also be impacted by a reduction of perch and nesting habitat.

The inherent incompatibility of residential land use with natural areas cannot be fully resolved. The loss of wildlife habitat is an unavoidable impact which cannot be mitigated to a less than significant level. Although this impact cannot be reduced to a less than significant level, measures are proposed to protect individual resources.

Implementation of measure **F01** will provide protection to individual trees, but will not provide adequate mitigation to preserve the woodland habitat.

Implementation of measure **E01** will ensure that natural swales continue to exist.

Implementation of measure **F03** will provide protection of the wetland habitat on the project site.

[M] Implementation of the project has the potential to adversely impact three elderberry bushes which exist in the study area. As habitat for the valley elderberry longhorn beetle, elderberry plants are subject to USFWS protection.

This impact will be mitigated to a less than significant level by of measure **F02**.

MITIGATION MEASURES

D04 Prior to development, each project will submit a Grading Plan to the El Dorado County Planning Department and Department of Transportation for review and approval.

D05 Grading, trenching, and similar construction activities which involve disturbance of the soil will be performed in accordance with the provisions of County Ordinance 3983. The ordinance specifies that such activities be restricted to the summer season and/or extended periods of dry weather. Filter berms, sandbag or hay bale barriers, culvert risers, filter inlets, and/or sediment detention basins will be utilized as appropriate during construction to protect area waterways from siltation and debris. All open ditches or developed swales will be appropriately vegetated or lined with coarse rock.

E01 Drainage will be conveyed in vegetated swales. Installation of closed storm drains is not proposed. Except to cross community roadways, culverting of the natural drainages will not be allowed. Consistent with mitigation identified in the El Dorado Hill Salmon Falls Area Plan, all projects in the study area will provide "*Non-building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds, should be observed as recommended by the County Health Department.*"

F01 Each project proposed on a property which supports native oak trees will retain an arborist to prepare a tree survey. The survey will provide an inventory of trees on the site as well as recommendations for the removal or preservation of individual trees. Prior to construction, fencing will be installed outside of the dripline of trees which are to be protected.

F02 Properties which harbor elderberry plants will obtain clearance from the USFWS prior to disturbance of the plants. It is anticipated that the USFWS will require mitigation for disturbance of these plants.

F03 Prior to approval of Tentative Maps, properties identified in this EIR as supporting wetland resources will be required to provide evidence of compliance with Department of Fish and Game policy and Section 404 of the Clean Water Act as

administered by the U.S. Army Corps of Engineers. TO satisfy Section 404 requirements, it is anticipated that each project will be required to provide a site specific wetland assessment and mitigation plan. This information will be provided to the County as a Supplement to this EIR, prepared and submitted in conjunction with the Tentative Map for each individual development.

PLANNING CONSIDERATIONS

o Consideration should be given to adopting an area-wide policy for nondevelopment and protection of some of the sensitive habitat which exists in the study area. This is particularly true of the oak woodland. As a consequence of continuing development, native oak woodland is rapidly disappearing from the Valley and lower foothill areas. Recognizing that woodland habitat is attractive for residential development, it is not realistic or feasible to prohibit development of all of these areas. Consequently, selected areas of woodland should be designated for protection, while limited development may be permitted in others. At locations where the County determines development is acceptable, strict guidelines and monitoring should be implemented to provide as much protection as possible to the trees. Examples of measures which should be considered include:

- require a complete detailed tree survey which locates each tree >6" in diameter on a parcel map, identifies the species, condition, and size of each tree (>6' dbh) and significant trees which should be protected,
- establish guidelines which limit the number and size of trees which can be removed,
- review project maps to verify that roadway alignments and lots have been configured to avoid clusters of significant trees as much as possible.
- designate open space and park areas which provide protection for oak woodland.
- require that lots located in wooded areas include a building envelope, and prohibit grading, buildings, pools, or other coverage outside of these envelopes,

- require establishment of landscaping which is compatible with the woodland, and prohibit establishment of traditional lawns and irrigation systems which contribute to the eventual death of native trees.

It is recommended that these types of measures be implemented to minimize disturbance in the oak woodland which occurs on the ridge in the eastern side of the study area. This woodland is of significant value to raptors because of its vantage above the surrounding terrain, including Bass Lake.

o Riparian habitat is valuable because of its relative scarcity in the region and the diverse array of vegetation and wildlife which utilize this habitat. It is suggested that the County provide addition protection through establishment of a park or designated open space area.

CLIMATE AND AIR QUALITY

CLIMATE

The Bass Lake study area is located on the eastern edge of the Central Valley in the lower Sierra Foothills. The Foothills Region is a transition zone between the climate of the Central Valley and that of the Sierra Nevada Mountains. At lower elevations, the Foothills tend to reflect the climatic conditions of the Valley, characterized by hot dry summers and cool damp winters. At higher elevations, the climate is heavily influenced by orographic influences which provide cooler summer temperatures and heavy amounts of rain and snowfall in the winter. Because of its location at the very lower extreme of the Foothill zone, the climate of the Bass Lake study area more closely resembles that of the Central Valley than the more seasonal climate of the Sierras. The coldest month of the year is January, when the area experiences a mean minimum temperature of 31°F and a mean high of 51°F. The hottest month of the year is typically July with a mean minimum temperature of 74°F and a mean high of 92°F. The vicinity typically experiences 4,087 heating degree days (below 65°F) verses only 783 cooling degree days (above 65°F). Annual precipitation averages 36.9", 90% of which falls between November and April. Prevailing winds are from the southwest, out of the Valley.

AIR QUALITY

For purposes of monitoring, the State of California has been divided into fourteen air basins. The majority of El Dorado County is located in the Mountain Counties Air Basin with Plumas County, Sierra County, Nevada County, Amador County, Calaveras County, Tuolumne County, Mariposa County, and a portion of Placer County. The Bass Lake study area is under the jurisdiction of the El Dorado County Air Pollution Control District (APCD). Although primary responsibility for attainment and maintenance of air quality standards lies with the local Air Pollution Control District, the area is also subject to the regulations of the

Mountain Counties Air Basin, the California Air Resources Board and the United States Environmental Protection Agency (EPA). Both the State of California and the Environmental Protection Agency have established ambient air quality standards. These standards are presented in Table G1. National Primary Standards are established as the level of air quality necessary, with an adequate margin of safety, to protect the public health. Any exceedance of the State standards is considered a violation. National Primary Standards may be exceeded once per year before a violation is registered.

The Sacramento metropolitan area is the business and industrial hub of the region, and consequently, is the principal origin of local air quality pollutants. Due to its proximity to the Sacramento metropolitan area and the prevailing southwesterly winds, the ambient air quality of the Bass Lake area is subject to influence by pollutants originating in Sacramento and areas to the south and west. This includes pollutants generated from urban and agricultural activities as well as pollutants carried by the prevailing winds from the San Francisco Bay area. The Sacramento AQMA and the Mountain Counties Air Basin are designated as a nonattainment areas for ozone. The nonattainment status in the Sacramento area is largely a function of seasonal inversion conditions and pollutant generation in the metropolitan area. The nonattainment status of the Mountain Counties Air Basin is largely attributed to the prevailing weather pattern which transports pollutants from the Valley.

A major source of pollutants in the Sacramento area is vehicular exhaust. Commuter traffic to/from outlying bedroom communities surrounding Sacramento has dramatically contributed to degradation of local air quality and compounded the management issue. Although the State has regulated point source emissions for years, attempts to seriously reduce mobile emissions is a relatively recent undertaking. The long term solution is envisioned to require a combination of balanced land use planning, regional trip reduction, and technological advancements to reduce pollutant concentrations in exhaust. As development continues, the regional air quality is predicted to deteriorate. Contributing to this deterioration will be commuter traffic

TABLE G1
AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		CONCENTRATION	METHOD	PRIMARY	SECONDARY	METHOD
Oxidant	1 hour	0.10 ppm (200 ug/m3)	Ultraviolet Photometry	-	-	
Ozone	1 hour	-	-	0.12 ppm (236 ug/m3)	Same as Primary Standards	Ethylene Chemiluminescence
Carbon Monoxide	8 hour	9.0 ppm (10 mg/m3)	Non-Dispersive Infrared Spectroscopy (NDIR)	9.0 ppm (10 mg/m3)	Same as Primary Standards	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23mg/m3)		35 ppm (40 mg/m3)		
Nitrogen Dioxide	Annual Average	-	Gas Phase Chemilumi-nescence	100 ug/m3 (0.05 ppm)	Same as Primary Standards	Gas Phase Chemiluminescence
	1 hour	0.25 ppm (470 ug/m3)		-		
Sulfur Dioxide	Annual Average	-	Ultraviolet Florescence	80 ug/m3	-	Pararosaniline
	24 hour	0.05 ppm		365 ug/m3	-	
	3 hour	-		-	1300 ug/m3	
	1 hour	0.25 ppm (655 ug/m3)		-	-	
Suspended Particulate Matter PM_{10}	Annual Geometric Mean	30 ug/m3	PM_{10}	50 ug/m3	-	-
	24 hour	50 ug/m3		150 ug/m3	-	
Sulfates	24 hour	25 ug/m3	Turbidimetric Barium Sulfate	-	-	-
Lead	30 day Average	1.5 ug/m3	Atomic Absorption	-	-	-
	Calendar Quarter	-	-	1.5 ug/m3	Same as Primary Standards	Atomic Absorption
Hydrogen	1 hour	0.03 ppm (42 ug/m3)	Cadmium Hydroxide STRactan	-	-	-
Vinyl Chloride (Chloroethene)	24 hour	0.010 ppm (26 ug/m3)	Tedlar Bag Collection, Gas Chromatography	-	-	-
Visibility Reducing Particles	1 observation	Insufficient amount to reduce the prevailing visibility to less than 10 miles when the relative humidity is less than 70%.		-	-	-

SOURCE: CALIFORNIA AIR QUALITY DATA, CALIFORNIA AIR RESOURCES BOARD, TECHNICAL SUPPORT DIVISION

to/from the Foothills region, including the Bass Lake vicinity, and the Sacramento metropolitan area. Western El Dorado County is largely developing to residential land uses, and consequently, emissions typical of residential uses are the major constituents of concern in the local air.

Principal pollutants of concern generated by the development in the Bass Lake study area will include carbon monoxide, ozone, and particulates. Substantial emissions generated by proposed residential land use will include those from home furnaces, fireplaces, fireplaces with inserts, and wood stoves as well as mobile sources accessing the site.

Ozone. Ozone is a pollutant of concern because high levels of ozone contribute to damage and deterioration of the air sacs in the lungs, decrements in pulmonary function, and impairment of disease resistance mechanisms. High levels of ozone have been linked to negative responses in plant communities, including reduced yields of domestic crops, and defoliation of coniferous forests in areas of southern California. Elderly people and people with respiratory ailments are most likely to suffer from elevated levels of ozone. However, because of the damaging properties of ozone on the air sacs of the lungs, athletes and persons participating in vigorous physical activity may also be adversely affected by ozone.

Ozone, measured as oxidant, is a secondary pollutant produced in the atmosphere when high Hydrocarbon (HC's) and Nitrogen Dioxide (NO_2) levels occur. Motor vehicle operation is the major source of HC's and Nitrous Oxide (which turns into NO_2).

Ozone is a highly reactive compound which readily combines with a variety of items in the atmosphere. Elevated ozone levels occur while elevated concentrations of HC and NO_2 exist, and decline rapidly once the excessive pollutants have been depleted. As a result, the highest ozone levels occur following the daily peak hour commute periods. Since the atmospheric mixing necessary for ozone formation requires dispersal of the catalytic pollutants, the highest ozone concentrations occur in communities downwind of the origin of the catalytic pollutants.

The nearest ozone sampling station to the Bass Lake study area is located at Ponderosa High School in Shingle Springs. That station has only been operational since July 1989. The limited amount of data available from that station is presented in Table G2. The next closest ozone sampling station to the Bass Lake area is located in the City of Folsom. However, as a consequence of being situated in the Valley, immediately downwind of the Sacramento area, Folsom experiences the highest ozone concentrations of any sampling station in the region. Ozone concentrations monitored at the Folsom station are presented in Table G2.

TABLE G2
MONITORED OZONE LEVELS (PPM)

SHINGLE SPRINGS MONITORING STATION

	Hourly		8-Hour		Number of Occurrences			
	1st	2nd	1st	2nd	> .09 ppm		> .12 ppm	
Year	high	high	high	high	days	hours	days	hours
1989	.13*	.13*	.027*	.047*	21	82	2	3

FOLSOM MONITORING STATION

	Hourly		8-Hour		Number of Occurrences			
	1st	2nd	1st	2nd	> .09 ppm		> .12 ppm	
Year	high	high	high	high	days	hours	days	hours
1989	.17*	.17*	.033*	.065*	48	157	8	15
1988	.17	.16	.032	.064	61	239	19	48
1987	.16	.16	.032	.064	52	195	17	37
1986	.15	.15	.028	.058	36	122	7	13
1985	.17	.17	.027	.058	41	153	13	37

* Data are valid but incomplete as insufficient number of points were collected to meet EPA and/or ARB criteria.

SOURCE: California Air Quality Data Summaries 1980–1989, California Air Resources Board, Aerometric Data Division

Carbon Monoxide. Carbon monoxide more readily combines with hemoglobin in the human body than does oxygen, and thus prevents oxygen from entering the bloodstream. The consequences of breathing prolonged elevated carbon monoxide concentrations is comparable to suffocation. Elderly people or people with heart conditions and/or respiratory ailments are most susceptible to elevated carbon monoxide concentrations.

Combustion of petroleum fuels is the major source of carbon monoxide in the vicinity, and like ozone, elevated concentrations of carbon monoxide are typically associated with the daily peak hour commute periods. Unlike ozone, carbon monoxide is a direct pollutant which concentrates around the emission source, and consequently, elevated carbon monoxide levels occur along major roadways, particularly at intersections, during peak hour traffic conditions. It is rare that any monitored locations in the Sacramento area exhibit exceedance of the carbon monoxide standards for any length of time. However, isolated violations are relatively common at major intersections during and following peak hour commute periods. The factors which produce these violations are varied, but generally include a combination of meteorological and traffic inputs. As outlying communities develop, the number of intersections adversely impacted during the peak commute hours will increase.

The nearest carbon monoxide sampling station to the Bass Lake study area is located at Ponderosa High School in Shingle Springs. That station has only been operational since July 1989. The limited amount of data collected at that station is presented in Table G3. The next closest sampling station to the Bass Lake area is located in Citrus Heights along Sunrise Boulevard. The recorded carbon monoxide concentrations at that station are presented in Table G3.

No violations of the carbon monoxide standard have been recorded at the Shingle Springs or Citrus Heights sampling stations.

TABLE G3
CARBON MONOXIDE LEVELS (PPM)

SHINGLE SPRINGS SAMPLING STATION

	Hourly Conc.		8 Hour Mean		Occurrences of 8 Hour Conc. > 9.0	
Year	1st high	2nd high	1st high	2nd high	days	hours
1989	6.0*	6.0*	4.6*	4.3*	0	0

CITRUS HEIGHTS MONITORING STATION

	Hourly Conc.		8 Hour Mean		Occurrences of 8 Hour Conc. > 9.0	
Year	1st high	2nd high	1st high	2nd high	days	hours
1989	9.0	9.0	6.9	6.4	0	0
1988	10.0	9.0	7.5	7.0	0	0
1987	8.0	8.0	5.0	5.0	0	0
1986	11.0	10.0	6.1	6.0	0	0
1985	9.0	9.0	7.4	6.5	0	0
1984	9.0	8.0	5.1	5.1	0	0

* **Data are valid but incomplete as insufficient number of points were collected to meet EPA and/or ARB criteria.**

SOURCE: California Air Quality Data Summaries 1980-1989, California Air Resources Board, Aerometric Data Division

Particulate Matter. Standards for Total Suspended Particulates (TSP) have been replaced with standards which evaluate particles which are considered "inhalable", i.e. 10 microns or smaller in size. The California standard for inhalable suspended particulate matter levels is measured as the concentration of particles in a cubic meter of air which will not pass through a 10 micron screen, and designated as PM_{10}. PM_{10} is reported in 24 hour occurrences and as an annual geometric mean; the respective new PM_{10} standards are 50 $\mu g/m^3$ and 30 $\mu g/m^3$. The closest pm_{10} sampling station to the project site is located at the library in Placerville. Recorded levels of PM_{10} at that station are presented in Table G4.

TABLE G4
RECORDED PM_{10} LEVELS (MICROGRAMS(μ)/M^3)

PLACERVILLE LIBRARY

	High	Low	Geometric Mean	Arithmetic Mean	Number of Samples >50	>100	>150	>250
1989	59	9	24.4*	26.6*	3	0	0	0
1988	56	22	31.3*	32.3*	1	0	0	0
1987	50	6	20.6*	23.2*	0	0	0	0
1986	37	8	20.3*	21.9*	0	0	0	0
1985	41	20	32.3*	33.5*	0	0	0	0

* Data are valid but incomplete as insufficient number of points were collected to meet EPA and/or ARB criteria.

SOURCE: California Air Quality Data Summaries 1985-1989, ARB

Particulate impacts produced by this project can generally be divided into short term and long term impacts. The greatest short term impact associated with development of the project site will be dust generation associated with grading and construction activities on the site. Dust emissions generated during construction can vary substantially from day to day depending on numerous factors, such as, percent silt content of the soil, moisture level of the soil, wind direction and velocity, and level of construction activity. Studies indicate that assuming a medium level of construction activity, moderate silt content of the soil, and semiarid climate conditions, approximately 1.2 tons of dust per acre per month of construction activity would be generated (EPA-450/3-74-037: 1974). Short term impacts will also result from vehicle emissions due to the use of construction equipment and private vehicles of workers. Components of residential use which are notable long term contributors to particulate levels include motor vehicle operation and wood burning activities.

STATIONARY EMISSIONS

Principal stationary generators of emissions within the study area will include home furnaces and wood-burning appliances.

Furnace Emissions. As indicated in Table G5, an estimate of furnace emissions associated with development of the Bass Lake study area has been developed using emission rates from AP-42 and fuel consumption data from Pacific Gas and Electric (PG&E). As shown, the operation of gas furnaces is predicted to generate 127 pounds of particulates, 31 pounds of sulfur dioxide, 5,077 pounds of nitrogen dioxide, 1,015 pounds of carbon dioxide, 269 pounds of non-methane hydrocarbons, and 137 pounds of methane hydrocarbons.

TABLE G5
PREDICTED FURNACE EMISSIONS

BASS LAKE PROPERTIES		
Size of project:	2,901	homes
Fuel Use Rate:	175.0	therms/year/home
Project Fuel Use:	507,675	therms/year
	50,767,500	cubic feet of gas

Pollutant	Emission Rates (lbs/mil cuft fuel)	Project Emissions (lbs/year)
Particulates	2.5	126.9
Sulfur Dioxide	0.6	30.5
Nitrogen Dioxide	100.0	5,076.8
Carbon Dioxide	20.0	1,015.4
Non-Methane HC'	5.3	269.1
Methance HC's	2.7	137.1

SOURCES: Emission rates per AP-42. Fuel use per PG&E.

Wood-burning Emissions. Although wood-burning does not generally pose a serious air quality problem in rural areas where the density of homes is relatively low, wood combustion emissions contribute significantly to the poor air quality observed during the winter in rural and small urban communities where numerous stoves are in use. The major criteria pollutants produced are PM10 and carbon monoxide, but polycyclic aromatic hydrocarbons (PAH), formaldehyde, dibenso-p-dioxins, and dibenzofuans also occur in the emissions. Polycyclic aromatic hydrocarbons are a minor component of wood combustion emissions, but potentially an important one since they may contain suspected carcinogenic compounds such as benzo(a)pyrene. In the Sacramento Valley and lower foothills, the concentration of wood emissions can be exacerbated by seasonal inversions and air stagnation.

The relatively recent resurgence of wood stoves as a popular and practical means of home heating has aggravated increased particulate levels. Recognizing the seriousness of stove generated particulates, the EPA recently adopted (July 1, 1988) national standards for the regulation of wood burning stoves. These standards specify that catalytic equipped stoves manufactured after July 1, 1988 may not emit more than 5.5 grams per hour of particulates, and non-catalytic stoves cannot emit more than 8.5 grams per hour. In addition to the recently adopted Federal standards, the California ARB has formulated a Suggested Control Measure strategy to reduce wood emissions. The main elements of this suggested strategy include:

- Implementation of an extensive public awareness program encouraging cleaner-burning practices,
- Mandatory replacement of non-certified wood heaters upon the sale of real property,
- Acceleration of implementation of the EPA's Phase II emission standards for the sale of new wood heaters,
- Restrictions on the sale and installation of used wood heaters,
- Establishment of a moisture content limit for seasoned wood,
- Prohibition on the types of materials that may be burned in wood heaters, and,

- declaration of voluntary "no-burn" days during periods of poor air quality.

Emissions from wood-burning are highly variable depending on such variables as type of wood, moisture content of wood, type of stove, fireplace, or insert, etc. Because of this wide variability, it is extremely difficult to predict the volume or type of emissions. Table G6 identifies representative emission rates for a variety of wood-burning devices. These rates are from A Proposed Suggested Control Measure for the Control of Emissions from Residential Wood Combustion, prepared by the Air Resources Board, Stationary Sources Division, October 1989.

Based on information collected by Northern California Research Associates (NCRA) and presented in the draft report Residential Wood Use in California (Sierra Research, 1989), a portion of new homeowners are predicted to rely upon wood-burning as their primary heat source, while others will augment furnace use with occasional wood-burning for heating and/or recreational purposes. As shown in Table G7, the data indicates that roughly 73% of the households in the El Dorado County portion of the Mountain Counties Air Basin burn wood to some extent. Of these households, approximately 19% use a fireplace, the remainder use stoves or fireplaces fitted with stove inserts. Assuming the project exhibits similar wood use characteristics, 560 (19%) of the homes in the Bass Lake project are predicted to have a fireplace, and 1,578 (54%) of the homes would be expected to have stoves or fireplaces fitted with an insert.

The NCRA survey provides information regarding the amount of wood used per household by wood-burning device in each Air Basin in each County. According to the survey, a home in the El Dorado County portion of the Mountain Counties Air Basin uses 1.2 cords of wood per year in a fireplace, 2.0 cords per year in a stove, and 2.9 cords per year in a fireplace fitted with a stove insert. Application of these wood consumption volumes to the predicted number and type of wood-burning households in the project indicates that the project would consume approximately 5,054 cords of wood per year.

TABLE G6
EMISSION RATES FOR WOOD-BURNING DEVICES

	Emission Rate (g/kg)*		
	Low	Avg	High
Particulate Matter			
EPA Phase II stoves and fireplace inserts	6.6	8.1	9.6
Conventional wood stoves and fireplace inserts	11.9	15	24.6
Fireplaces	10	16	22.4
Carbon Monoxide			
EPA Phase II stoves and fireplace inserts	---	Not calculated	---
Conventional wood stoves and fireplace inserts	50	115	180
Fireplaces	20	65	110
PAH			
EPA Phase II stoves and fireplace inserts	---	Not calculated	---
Conventional wood stoves and fireplace inserts		0.04	
Fireplaces		0.029	
Weight of a cord (kg)	1,011	1,400	1,814

* Emission factors are stated as grams of pollutant per kilogram of wood burned (g/kg)

SOURCE: A Proposed Suggested Control Measure for the control of emissions from residential wood combustion Technical Support Document. California ARB. 10/1989.

As indicated in Table G7, application of the emission and wood consumption rates discussed above predicts that wood-burning households in the project would produce <1.0 ton of PAH, 846 tons of carbon monoxide, and 71 tons of particulates per year.

MOBILE SOURCES

The mobile emissions analysis has been prepared using three computer models provided in the AQAT-2, Air Quality Analysis Tools package assembled by the California Air Resources Board. The models include EMFAC7PC, URBEMIS2, and CALINE4.

EMFAC7PC. EMFAC7PC is an Emissions Factor model which is used to determine vehicle fleet emission factors for use in URBEMIS and CALINE. Considerations in development of these factors include year modelled, vehicle fleet mix, trip type and length generated by the project, and meteorological characteristics.

URBEMIS. The URBEMIS model is an urban emissions prediction model which estimates mobile emissions which would be generated by development of various types of land uses. Inputs utilized in this analysis include an ambient temperature of 40°F, trip rate of 10.0 daily trips per unit, and the default trip data developed by the California Air Resources Board for the Sacramento region. The URBEMIS model predicts that development of the Bass Lake area will generate approximately 120 tons of carbon monoxide, 1438 tons of hydrocarbons, and 148 tons of nitrogen oxides per year.

CALINE. CALINE4 is a micro scale analysis developed by the California Department of Transportation (CalTrans) which predicts the concentration of various pollutants (in this instance carbon monoxide) at a specific location based on the proximity to nearby roadways. Because the intersection of Bass Lake Road and Country Club Drive is predicted to be the heaviest used intersection in the study area, it is expected to experience the highest carbon monoxide concentrations. Future carbon monoxide concentrations at this intersection were predicted using CALINE4, the fourth generation California Line Source Dispersion Model, prepared by Caltrans.

TABLE G7
PREDICTED PROJECT EMISSIONS FROM WOOD-BURNING DEVICES

BASS LAKE PROPERTIES	
2901	Homes proposed in project
2	El Dorado County
	1 Sacramento County
	2 El Dorado County
	3 Placer County
2	Mountain Counties Air Basin
	2 Mountain Counties Air Basin
	3 Lake Tahoe Air Basin

EMISSION RATES (lbs/cord)	
PAH	
Fireplaces	0.1
Stoves/Inserts	0.1
CARBON MONOXIDE	
Fireplaces	200.6
Stoves/Inserts	354.9
PARTICULATES	
Fireplaces	49.4
Stoves/Inserts	25.0

WOOD USE CHARACTERISTICS	
El Dorado County	Mountain Counties Air Basin
Cords burned:	Of all households:
1.18 cords/year/fireplace	19.3 % have fireplaces
2.00 cords/year/stove	7.0 % have stoves
2.90 cords/year/insert	47.4 % have inserts
Of all households:	Wood-burning Households:
26.3 % do not burn wood	26.2 % use fireplaces
73.7 % burn wood	9.5 % use stoves
	64.3 % use inserts

PROJECT CHARACTERISTICS / EMISSIONS		
560 homes are predicted to have fireplaces		
204 homes are predicted to have stoves		
1374 homes are predicted to have inserts		
PAH	<1.0	ton per year
CARBON MONOXIDE	845.8	tons per year
PARTICULATES	71.2	tons per year

SOURCES:

A Proposed Suggested Control Measure for the Control of Emissions from Residential Wood Combustion. ARB Stationary Source Div. Oct 1989.

A Proposed Suggested Control Measure for the Control of Emissions from Residential Wood Combustion. Technical Support Document. ARB Stationary Source Div. Oct 1989.

Residential Wood Use in California. Draft Report. Sierra Research. Oct 20, 1989.

The results of the CALINE4 analysis are shown in Table G8. Input data for this model includes meteorology, street network geometrics, traffic information, receptor locations and surrounding land use factors. Worst case meteorologic criteria was utilized as prescribed by CalTrans in Development of Worst Case Meteorology Criteria. Under the worst case option, the model identifies the various wind bearings which produce the highest concentration at individual receptors. The intersection geometry utilized in this analysis assumes six 400-meter links representing northbound/southbound lanes on Bass Lake Road, and two eastbound/westbound links on Country Club Drive. Sensitive receptors were modelled on each quadrant of the intersection at 50' and 100' equidistance from the adjacent roadways. Daily traffic volumes were obtained from the impact evaluation prepared by Omni·Means for cumulative conditions "with" and "without" the project. As recommended in the Air Quality Technical Analysis Notes (CalTrans, June 88), a background concentration of 6 ppm was utilized for the 1-hour analysis, and 4 ppm for the 8-hour analysis. A persistence factor of 0.6 was utilized in calculation of the 8-hour concentrations.

Without the project, the average 8-hour CO concentration at 50 feet from the intersection is predicted to be 5.3 ppm, with the highest concentration of 5.4 ppm occurring on the SW and NW quadrants of the intersection. These concentrations would be 60% of the 9.0 ppm Federal and State 8-hour standards. The average 1-hour concentration at 50' from the intersection would be 8.2 ppm which is 40% of the State 1-hour standard and 23% of the Federal 1-hour standard. Following implementation of the project, the average 8-hour concentration at receptors located 50 feet from the intersection is predicted to increase by 3.2 ppm to 8.5 ppm. Similarly, the highest concentration is predicted to increase to 8.6 ppm. These concentrations would not exceed either the State or Federal carbon monoxide standards, however, the 8.5 ppm value approaches the 9.0 ppm 8-hour standard.

It should be recognized that the predicted difference in future CO levels for "with project" and "without project" conditions are smaller than the resolution of the CALINE4 model, and consequently, are only estimates of the actual changes.

TABLE G8
PREDICTED CARBON MONOXIDE CONCENTRATIONS

Bass Lake Road and Country Club Drive
Cumulative Conditions without project
(Concentrations are in PPM)

Receptor Location	Wind Brg Deg	1 HOUR						8 HOUR		
		Bgnd	Conc	A	B	C	D	Pers	Bgnd	Conc
NE Quadrant 50'	235	6.0	7.9	0.8	0.9	0.2	0.0	0.6	4.0	5.1
SE Quadrant 50'	306	6.0	8.1	1.0	0.8	0.3	0.0	0.6	4.0	5.3
SW Quadrant 50'	55	6.0	8.3	1.0	1.0	0.3	0.0	0.6	4.0	5.4
NW Quadrant 50'	128	6.0	8.4	0.9	1.2	0.3	0.0	0.6	4.0	5.4
NE Quadrant 100'	230	6.0	7.4	0.6	0.6	0.2	0.0	0.6	4.0	4.8
SE Quadrant 100'	311	6.0	7.4	0.7	0.5	0.2	0.0	0.6	4.0	4.8
SW Quadrant 100'	50	6.0	7.5	0.6	0.7	0.2	0.0	0.6	4.0	4.9
NW Quadrant 100'	131	6.0	7.5	0.6	0.7	0.2	0.0	0.6	4.0	4.9

Bass Lake Road and Country Club Drive
Cumulative Conditions with project
(Concentrations are in PPM)

Receptor Location	Wind Brg Deg	1 HOUR						8 HOUR		
		Bgnd	Conc	A	B	C	D	Pers	Bgnd	Conc
NW Quadrant 50'	225	6.0	13.3	3.3	2.2	0.6	1.2	0.6	4.0	8.4
NE Quadrant 50'	310	6.0	13.6	3.6	2.6	0.6	0.8	0.6	4.0	8.6
SE Quadrant 50'	56	6.0	13.1	2.6	3.0	0.6	0.9	0.6	4.0	8.3
SW Quadrant 50'	129	6.0	13.5	2.7	3.4	0.5	0.9	0.6	4.0	8.5
NE Quadrant 100'	227	6.0	11.3	2.2	1.9	0.4	0.8	0.6	4.0	7.2
SE Quadrant 100'	315	6.0	11.4	2.4	1.9	0.4	0.7	0.6	4.0	7.2
SW Quadrant 100'	50	6.0	11.3	2.0	2.2	0.5	0.6	0.6	4.0	7.2
NW Quadrant 100'	125	6.0	11.2	1.9	2.4	0.3	0.6	0.6	4.0	7.1

Wind Brg Deg = Wind bearing in degrees
Bgnd = Background concentration
Conc = Predicted concentration at receptor location
A-D = Contribution of individual links to predicted concentration
Pers = Persistence factor

Although furnaces and wood-burning devices contribute to poor air quality, motor vehicle use represents the greatest detriment to air quality in western El Dorado County posed by continuing growth. The contribution of traffic to the growing emission is predicted to worsen in direct proportion to increasing traffic volumes. Recognizing the growing importance of controlling motor vehicle emissions, recent amendment of the California Clean Air Act empowers the Air Pollution Control Districts to require air quality offsets from projects which are indirect sources of pollutants. The El Dorado County APCD is currently preparing its air quality attainment plan for compliance with the recent California Clean Air Act amendment. This plan will establish the course by which the District proposes to attain the ambient air quality standards for criteria pollutants. The attainment plan is scheduled to be submitted to the ARB prior to June 30, 1991.

Although it is currently not known what measures will be identified in the attainment strategy, it is likely that there will be a variety of measures which are not stipulated by the current air quality plan. Types of measures which may be required include installation of vapor recovery hoses at service stations, greater allocation of resources and incentives to regional transit programs, mandatory implementation of alternative fuel technology, reduced emission allowances for industrial and commercial uses, implementation of stringent trip reduction programs, or adoption of indirect source control measures. If indirect source control measures are adopted, the projects within the study area may be required to provide off site measures which compensate for emissions produced by vehicular trips generated by residential development.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Construction activity will produce short term air quality impacts. The greatest short term air quality impact

associated with development will be dust generation produced during grading and land development activities. Assuming that development of the study area takes 10 years, and that half of the development time involves grading and/or activities which require disturbance of the soil, there would be an average of 5 acres per month being disturbed. Assuming the EPA referenced dust generation rate of 1.2 tons/acre/month, development would be expected to generate approximately 6 tons of dust per month.

This impact will be mitigated through implementation of mitigation measures **G01** and **G02**.

[M] Project generated traffic will contribute to local and regional air contaminant levels. Predicted emissions from project generated traffic include 120 tons of carbon monoxide, 1438 tons of hydrocarbons, and 148 tons of nitrogen oxides per year. The volume of ozone which will form as a consequence of project traffic emissions is assumed to be comparable to the predicted production of hydrocarbons. These emissions will exacerbate regional efforts to reduce carbon monoxide, particulate, and ozone levels, compounding the nonattainment status for ozone.

This impact will be reduced to a less than significant level by measure **G03** and **G04**.

[L] Use of gas furnaces and wood-burning devices will produce air contaminants, contributing to the degradation of local air quality. Operation of gas furnaces is predicted to generate 127 pounds of particulates, 31 pounds of sulfur dioxide, 5,077 pounds of nitrogen dioxide, 1,015 pounds of carbon dioxide, 269 pounds of non-methane hydrocarbons, and 137 pounds of methane hydrocarbons. Wood-burning devices are predicted to produce <1.0 ton of PAH, 846 tons of carbon monoxide, and 71 tons of particulates per year.

Aside from continuing technological improvement, mitigation to reduce furnace emissions has not been identified.

Mitigation of wood stove emissions is provided by the Federal government through regulation of design and sale of wood stoves.

MITIGATION MEASURES

G01 Sprinkling of graded or similarly exposed areas will be performed at least twice a day during construction. EPA estimates indicate that this action can reduce dust emissions by up to 50% (EPA-450/3-74-036a: 1974).

G02 Consistent with the County Ordinance 3983, grading will not be permitted during periods of high winds.

G03 The most recent amendment of the California Clean Air Act stipulates that each APCD designated as a nonattainment area is required to prepare and submit a plan for attaining and maintaining the State Ambient Air Quality standards. The El Dorado County APCD is currently preparing the required plan which is due to the ARB no later than June 30, 1991. The plan will identify measures required to facilitate attainment of the ambient air quality standards. Individual projects within the Bass Lake study area will comply with the requirements of the attainment plan.

G04 Individual projects will provide turn out lane(s), bus stop shelters, or other infrastructure necessary to facilitate extension of transit services to the study area. The location, number, and design of these facilities will be established based on consultation with RT and the El Dorado County Department of Public Works. The required facilities will be identified on Tentative Maps and identified as conditions of approval of the various projects.

PLANNING CONSIDERATIONS

- Development of a "Park & Ride" facility near the intersection of Bass Lake Road and Country Club Drive should

be required in conjunction with development of the area. Such a facility should be identified early in the planning process to ensure adequate space is reserved prior to development. Individual projects could be assessed a prorated portion of the costs associated with establishment of this facility.

- A pedestrian/bicycle oriented circulation system should be established which provides safe travel corridors throughout the study area. The pathway, which could be constructed in conjunction with the roadways, should connect the various developments with local schools, parks, and the proposed commercial center located north of the study area. In addition to bikeways along major roadways in the study area, stream corridors and utility easements should be considered as potential pathway alignments.

NOISE

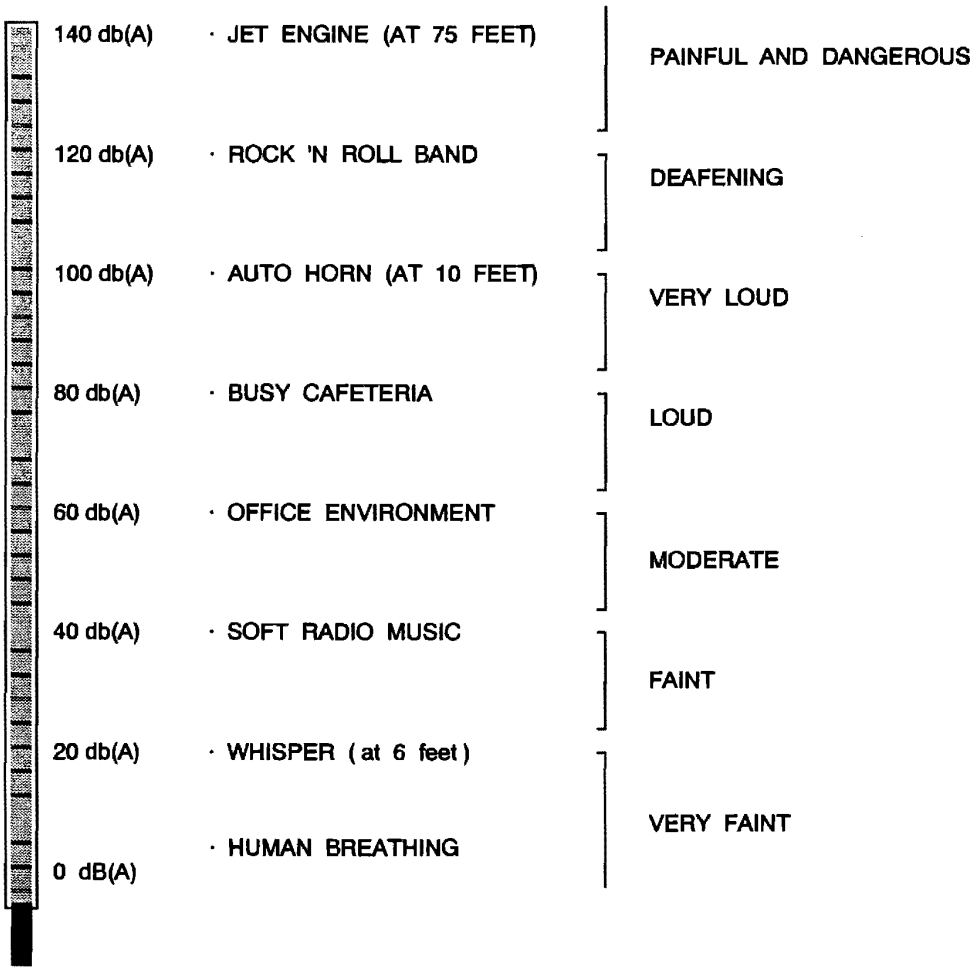
The firm of Brown-Buntin Associates (BBA), Community Noise Consultants, was retained by R.C. Fuller Associates to evaluate the noise environment of the Bass Lake study area. The noise analysis prepared by BBA is appended to this report. Information from that analysis was used in preparation of this section of the EIR. Noise levels from Highway 50 are based on levels monitored during a 24-hour period from July 23 through July 24, 1990.

Noise is a fundamental component of the human environment. Outdoor ambient noise levels tend to be higher in urban settings than those associated with more rural land uses. These higher noise levels can be detrimental to the health and well being of residents of urban environs.

Although the physical intensity of a sound can be easily measured, the effect of the sound on individuals is a complex and intangible value which must consider both physical and social factors. The seriousness of any given sound is a combination of its intensity, duration, and time of day. Louder noises are perceived as acceptable if they last for shorter periods of time. Similarly, levels which may be regarded as acceptable during the day, can be annoying or intolerable during evening or nighttime periods. The "loudness" of a sound is measured in decibels, dB.

The noise environment includes a multitude of sounds, many of which are beyond the range of human hearing. In order to realistically assess noise impacts to people, noise measurements are often performed with an "A" filter. An "A" filter replicates the human range of hearing. When an "A" filter is used in monitoring or modelling, the measurement is denoted as dB(A). Figure H1 is a "noise thermometer" which indicates the approximate decibel levels, dB(A), associated with noise producing activities.

FIGURE H1
NOISE THERMOMETER



SOURCE: Architectural Acoustics, David M. Egan, 1988.

In order to evaluate noises in urban environments, two principal methods of noise expression have been developed, the Community Noise Equivalent Level (CNEL) and the Day-Night Average Sound Level (Ldn). Most communities recognize one or both of these measurements; El Dorado County recognizes Ldn. These methods are used to describe average noise levels over a period of time, generally 24 hours. Noises during evening or nighttime periods are weighted to account for the increased sensitivity of the community to noises during these periods. These methods are only applicable to relatively constant sounds, such as traffic or train noise. The impacts of intermittent noise, sounds which are relatively loud for short periods, may be underestimated by Ldn or CNEL. Intermittent noise can pose a unique situation for regulation. Because of its infrequent nature, this type of noise may produce unusually loud sounds for short periods of time, but because of the averaging nature of Ldn or CNEL, not result in a violation. These brief but loud sounds can be as annoying and disruptive to the community as noise of longer duration but less volume. In response to this type of situation, many communities have adopted performance standards as a method of regulating intermittent noise. Performance standards entail limiting the amount of time that sounds in excess of a specified level may be generated. For example, a manufacturing plant may be allowed to generate exterior sounds in excess of 60 dB for a total of five minutes in every hour.

The adopted practice for noise regulation in the United States is to identify acceptable noise levels which can be associated with a particular land use or zoning designation. In California, establishment and enforcement of noise standards is largely the responsibility of local communities, and standards are established through adoption of a Noise Element to a General Plan. Although specific noise standards for community land uses are not established at the State level, the State has established stringent requirements for multi-family dwellings. Title 24 of the California Administrative Code specifically requires acoustical analysis for multi-family dwellings proposed for location within the 60 dB Ldn contour, with a maximum allowable interior noise level of 45 dB Ldn specified for habitable rooms.

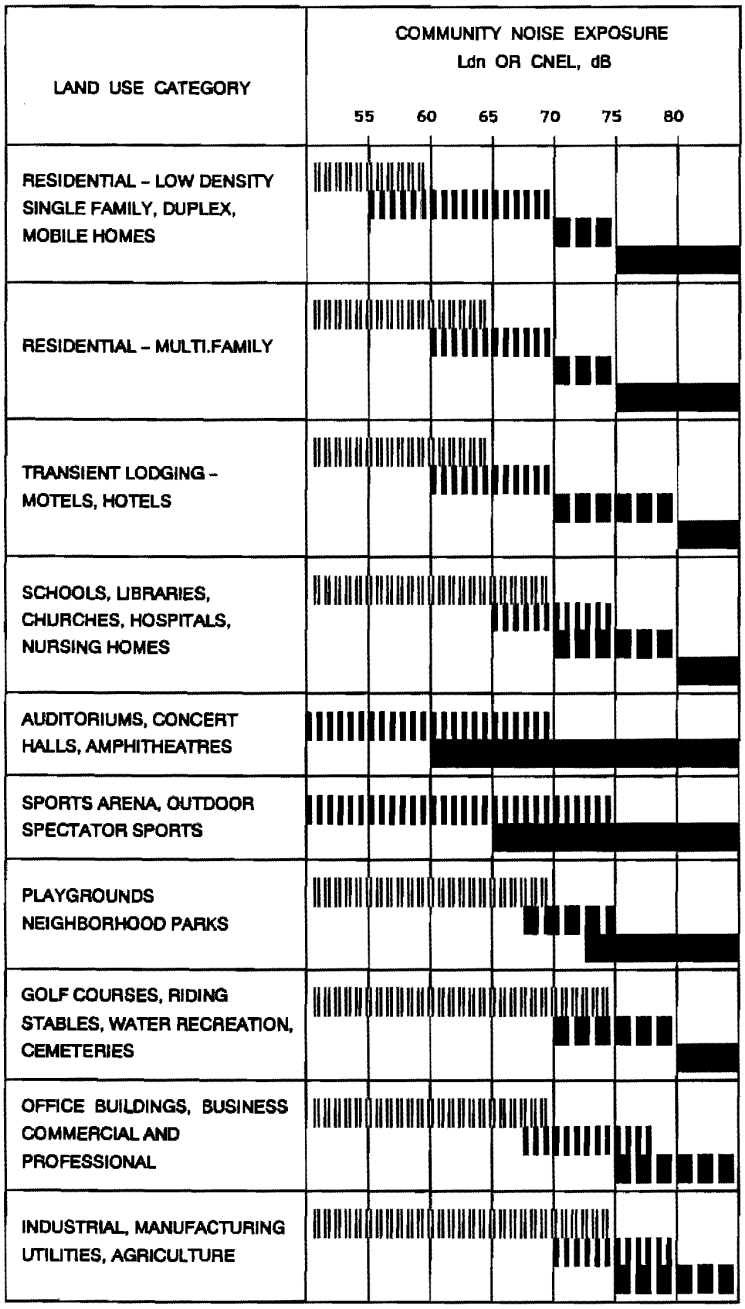
In order to assist local communities in the implementation of noise elements, the California Department of Health, Office of Noise Control (ONC), has published extensive material on assessment and regulation of noise. Perhaps the most widely utilized noise related publication produced by the ONC is **Guidelines for the Preparation and Content of Noise Elements of the General Plan.** For reference, the noise levels recommended by the ONC publication are presented in Figure H2. The Noise Element of the El Dorado County recognizes the noise levels identified in the U. S. Housing and Urban Development (HUD) Environmental Criteria and Standards. The HUD standards establish the degree of acceptability for noise exposure in terms of the Day/Night Average Level (L_{dn}) in exterior areas of noise sensitive land uses. The HUD standards recognize a noise exposure of 65 dB L_{dn} and less as "Acceptable", 65-75 dB L_{dn} as "Normally Acceptable", and above 75 dB L_{dn} as "Unacceptable". The HUD goal for interior noise levels is 45 dB L_{dn} or below.

EXISTING NOISE CONDITIONS

At present, the sound environment of the Bass Lake study area is relatively quiet. The noise environment is dominated by natural sounds including wind and wildlife. Ambient noise levels in the study area are less than 50 dB L_{dn}, with higher levels occurring closer to Highway 50. A variety of sounds are produced by the existing homes in the study area, but because of the rural setting, none of these sounds are particularly annoying. The major noise generator in the study area is traffic, most notably on Highway 50 and Bass Lake Road.

Existing noise levels were monitored on Highway 50, and used to calibrate the FHWA noise prediction model which was then used to predict noise levels at varying distances from the roadway. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) is the analytical method currently favored by most state and local agencies for traffic noise prediction, including the California Department of Transportation (CalTrans).

FIGURE H2
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



INTERPRETATION

NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE

New construction of development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and the needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

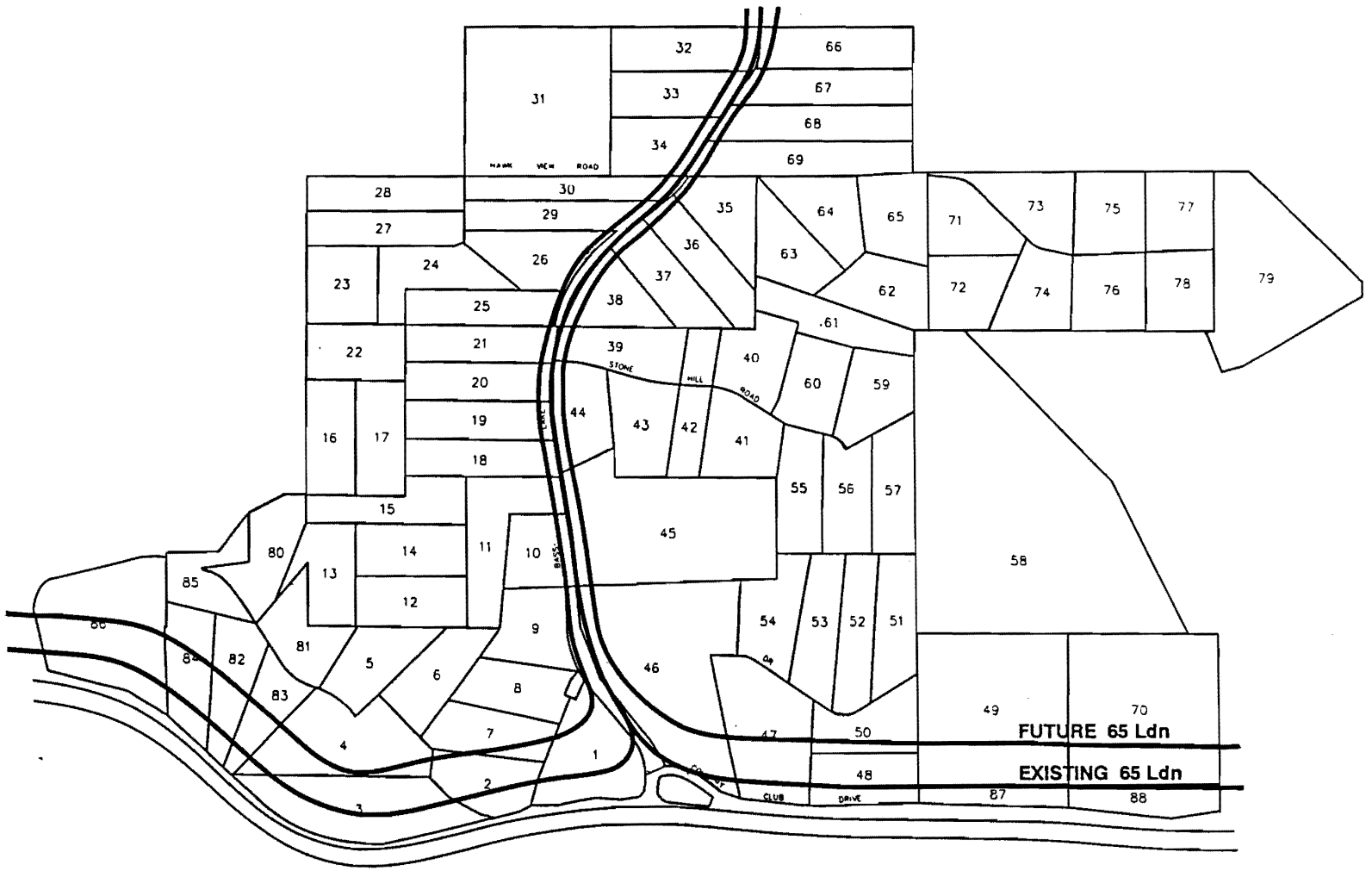
SOURCE: **Guidelines for the Preparation and Content of Noise Elements of the General Plan**, Office of Noise Control, California Department of Health, Berkeley, California, February, 1976.

The FHWA model is based upon the Calveno reference energy emission levels for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA methodology presents a "worst case" analysis in that it assumes the surface between the receptor and the noise source to be a flat plain with no obstructions. In actuality, numerous factors exist, such as topography, vegetation, or structures, exist which reduce the distance noise can travel from a roadway. Actual traffic noise levels which occur in the study area will likely be less than those identified in this report. The results of the FHWA traffic noise analysis are presented in Table H1. The noise contours are presented in Figure H3. Locations closer to the roadway than the identified distance are predicted to experience levels higher than the 65 dBA recognized by the County as an acceptable noise level. Receptors located farther than the identified distance would be exposed to less than 65 dBA.

TABLE H1
EXISTING DISTANCE (FEET) TO THE 65 dB Ldn NOISE CONTOUR
Distances predicted using FHWA Model RD-77-108

	ADT	Distance from Centerline (feet)
Bass Lake Road		
north of study area	2,200	20
south of Hollow Oak Drive	3,150	25
south of Country Club Drive	3,100	25
Highway 50	39,500	393

The study area is approximately 1.5 miles southwest of the Cameron Park Airport, situated well outside of Flight Zone 3. The centerline axis of the runway is generally northwest/ southeast. Aircraft approaching or departing the airport on this axis cross Highway 50 in the vicinity of the Cameron Park interchange, three miles east of Bass Lake Road.



LOCATION OF 65 dB Ldn CONTOURS | **FIGURE H3**

Review of the 1984-85 noise contours established for the airport indicates that the 55 dB CNEL noise contour is approximately one mile from the study area at its closest point. Consequently, noise from aircraft operations at Cameron Park Airport do not perceivably impact the noise environment of the study area.

FUTURE NOISE ENVIRONMENT

Future development in and around the Bass Lake study area will alter the noise environment of the vicinity. Changes will include short term construction noise, a permanent change in the character of sounds on the site, and an increase in traffic generated noise levels.

Initially, noise on the site will be generated by construction equipment. As shown in Table H2, activities involving grading and scraping, road construction, building construction, and landscaping are anticipated to generate noise levels on the site ranging from 70 to 95 dB(A). Some blasting may be required at locations where rock is encountered during construction. Short term noise associated with this activity could be in excess of 100 dB(A) at the source.

TABLE H2
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment Type	Maximum Level – dB(A) (Measured at 50 feet)
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85
Chain Saw	95

Source: Patrick Cuniff, Environmental Noise Pollution, 1977.

The most noticeable permanent change in the noise environment will be the level and character of the sounds generated in the study area. Natural sounds which dominate the existing setting will be replaced by more typical residential sounds including stereos, car doors, lawnmowers, children playing, dogs barking, etc. These sounds are typical of the residential environment and generally do not produce violation of adopted noise standards. However, long time residents of the rural setting could experience difficulty adjusting to the urban environment. In addition to the elevated level of noise, the new types of noises can be particularly annoying. An assessment of the subjective reaction of individuals to changes in noise levels is presented in Table H3.

TABLE H3
SUBJECTIVE REACTION TO CHANGES IN NOISE LEVELS

Change in Level, dB	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (except for tones)	1.3
3	Just Barely Perceptible	2.0
5	Clearly Noticeable	4.0
10	Twice (or half) as Loud	10.0

SOURCE: Architectural Acoustics, M. David Egan, 1988.

Typical of most residential settings, traffic will represent the noise source with the greatest potential to exceed adopted noise standards in the study area. Because of the relatively light traffic volumes, and the lower traffic speeds, noise levels along streets within the various developments will not exceed noise standards. The greatest potential for noise conflicts to occur will be along the major roadways in the area, namely Bass Lake Road and Highway 50. Future roadway noise levels were predicted using the FHWA model. The results of the model are presented in Table H4.

TABLE H4
PREDICTED DISTANCE (FEET) TO THE 65 dB Ldn NOISE CONTOUR MEASURED FROM ROADWAY CENTERLINE

	Existing	Existing plus project	Future without project	Future with project
Bass Lake Road				
north of study area	20	54	119	138
south of Hollow Oak Drive	25	62	120	144
south of Country Club Drive	25	85	130	166
Highway 50	393	___	793	858

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] The most significant short term noise impact generated by development of the study area will be that produced by construction activities. As shown in Table H2, these noise levels can be expected to range from 70 to 95 dB(A). If blasting is utilized, noise in excess of 100 dB(A) within 50 feet of detonation would be expected.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **H01**.

[M] Traffic generated by development of the study area will contribute to noise levels along roadways. Assuming buildout of the study area in 2010, the Federal Highway Administration (FHWA) Traffic Noise Prediction Model

predicts that the 65 dB L_{dn} noise contour will be 858 feet from the centerline of Highway 50. Within the study area, the predicted distance to the 65 dB L_{dn} contour will range from 138 to 166 feet from the centerline of Bass Lake Road.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **H02**.

[L] It is probable the development will include establishment of a fire station somewhere in the study area. Residences located near the station would be routinely exposed to siren noise in excess of 100 dB(A). A **Class A** siren approved for use in California must have a minimum sound level output measured at three meters of 120 dB(A) on the axis and 113 dB(A) at 50° right and left. Although such exposure can be extremely disruptive, emergency equipment is exempted from community noise standards.

[L] Residential development of the study area will produce in permanent change in the noise environment. Natural sounds which dominate the existing setting will be replaced by more typical residential sounds including stereos, car doors, lawnmowers, children playing, dogs barking, etc. These sounds are typical of the residential environment and generally do not produce violation of adopted noise standards.

Domestic noises, such as dogs barking or loud stereos, are regulated through enforcement of nuisance or similar ordinances on an incident by incident basis.

MITIGATION MEASURES

H01

Construction activity commonly occurs in developed or developing residential areas. Practical considerations and common sense have, in practice, minimized noise impacts to

already occupied homes. All construction equipment is subject to established performance regulations which include adequate mufflers, enclosure panels, or other noise suppression attachments as appropriate. However, should the need arise, construction noise is subject to regulation through existing ordinances. In instances where difficulties arise, the County has the authority to restrict the hours that noisy activities can be conducted to 7am-7pm weekdays, and 8am-8pm weekends. In instances of exceptional noise, such as blasting, a special County permit may be required and warning or temporary relocation of neighbors may be necessary.

H02 As individual projects are proposed within the study area, they will be subjected to an environmental review. This review will include the determination of the need for further noise analysis. This analysis will include, as appropriate, an on site noise assessment to determine the actual location of noise contours. In situations where the predicted 65 dB(A) noise contour falls outside of the roadway right of way and within residential property, projects will be required to implement measures to reduce the noise to the recognized standards included in the **El Dorado County General Plan Noise Element**. Typical measures which may be implemented include setbacks, sound walls, and landscaped berms.

In some instances, noise attenuation of individual residential units will be most appropriate. Construction techniques which may be utilized to reduce interior noise levels include in wall insulation, double pane windows, properly sealed joints, and placement of bedrooms away from noise sources. In accordance with State standards, residential housing must attain interior noise levels of less than 45 dB.

PLANNING CONSIDERATIONS

- As described more fully in the Fire Protection section of this report, decisions regarding the possible location of a fire station within the study area should be made as soon as possible. This will help to assure that the best possible buffering and other land planning measures can be utilized to minimize potential noise and other negative impacts on residential areas.

CULTURAL CONDITIONS, PROJECT IMPACTS AND MITIGATION MEASURES

I - LAND USE, POPULATION & HOUSING, RECREATION
J - TRAFFIC
K - PUBLIC SERVICES AND UTILITIES
L - FISCAL
M - VISUAL AND AESTHETIC ENVIRONMENT
N - ARCHAEOLOGY AND HISTORY

LAND USE

The Bass Lake study area is located in western El Dorado County in the transition zone between the foothills and the Sacramento Valley. As shown in Figure C1, page C2, the Regional Location Map, the site is approximately three miles east of the Sacramento/El Dorado County line, located between the communities of El Dorado Hills and Cameron Park. Both El Dorado Hills and Cameron Park are well established, growing residential communities. Both are oriented north-south along roadways which connect Highway 50 on the south with Green Valley Road to the north. Highway 50 is the major transportation corridor connecting Placerville and South Lake Tahoe with the Sacramento metropolitan area. Green Valley Road provides an alternate route between western El Dorado County and the Sacramento metropolitan area.

The study area is located ±1.5 miles southwest of the Cameron Airpark Airport. The centerline axis of the runway is generally northwest/southeast, and aircraft approaching or departing the airport on this axis cross Highway 50 near the Cameron Park interchange, three miles east of Bass Lake Road. Although future residents of the study area will likely see and hear aircraft, review of the Cameron Airpark Airport Safety Areas map indicates that the study area is not situated within the approach, departure, or clear zones of the airport. At its closest point, the study area is over one-half mile from Zone 3 of the airpark.

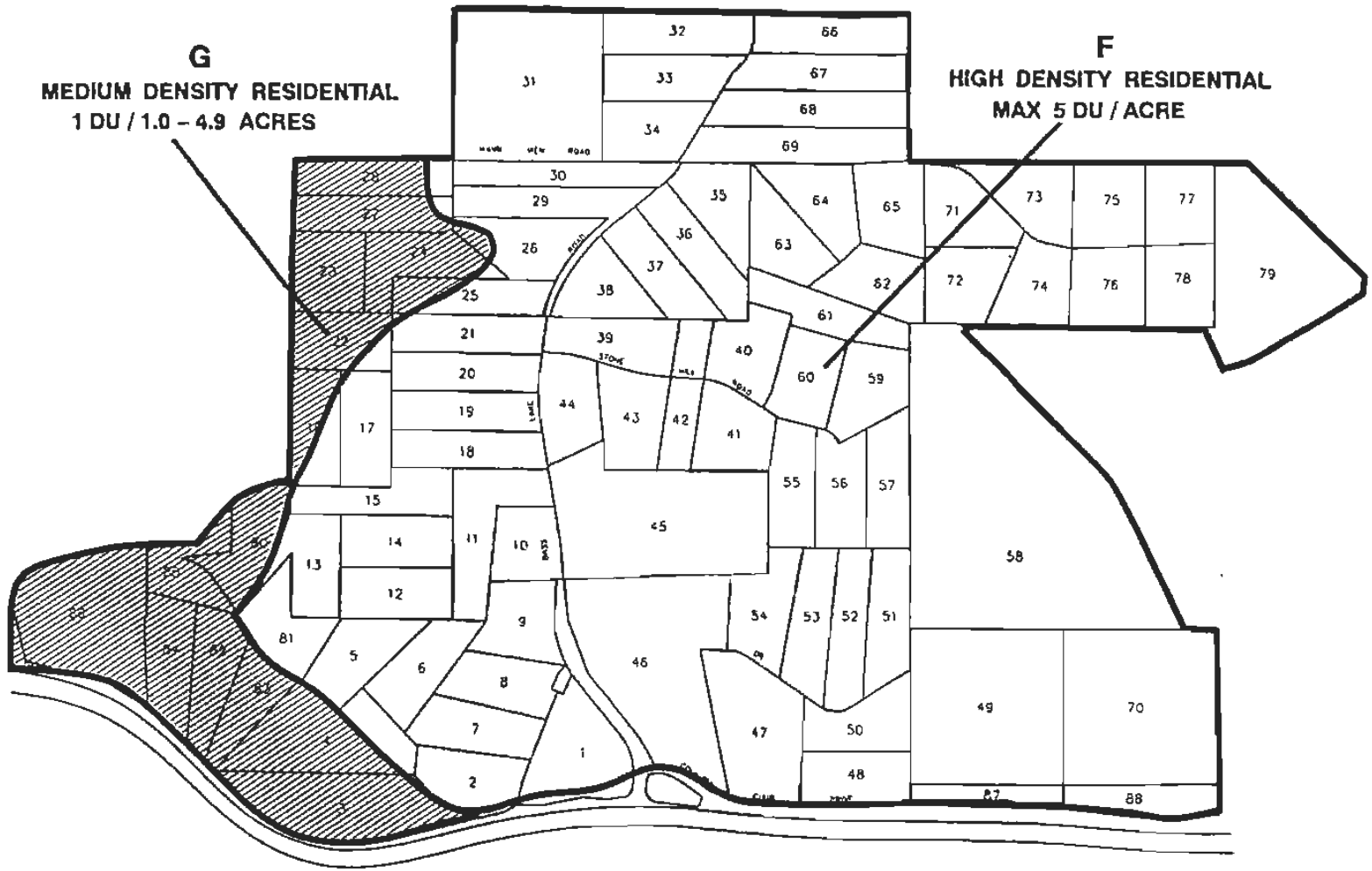
Historically, the study area has been used primarily for grazing, although evidence of past mining exists in several locations. Presently, the majority of the study area is subdivided into ten acre parcels. Of the 89 parcels included in the study area, only eleven are larger than 10 acres, with the largest being 96 acres.

Existing land use can be characterized as rural large lot residential and low intensity agriculture, i.e. grazing and keeping of horses and other livestock. There are currently dwellings on approximately 35 of the 89 parcels in the study area. Under existing zoning, 121 homes is the maximum number of dwellings which could be constructed in the study area.

Continuing growth in El Dorado Hills to the west and Cameron Park to the east has created considerable pressure to rezone the study area to the densities allowed by the **EL DORADO HILLS - SALMON FALLS AREA PLAN**, permitting construction of residential subdivisions similar to those in El Dorado Hills and Cameron Park. In anticipation of eventual development, some developers have purchased several of the 10 acre parcels in the study area with the expectation of developing larger projects on the combined acreage. Existing residents who maintain their 10 acre parcels could find themselves surrounded by higher density developments. Land use in the study area is subject to the uses identified by the **EL DORADO HILLS - SALMON FALLS AREA PLAN.** These uses are identified in Figure Il. As shown, virtually all of the study area is designated **F** HIGH DENSITY RESIDENTIAL which allows a maximum density of five units per acre. The exceptions to this include area along Carson Creek in western extreme of the study site, and the area south of Old Bass Lake Road in the southwestern corner of the study area. These locations are designated **G** MEDIUM DENSITY RESIDENTIAL with a maximum density of 1 unit per acre.

Consistent with the designated land use in the study area, the **EL DORADO HILLS - SALMON FALLS AREA PLAN** also identifies high density residential land use as appropriate on properties surrounding the study area. Recognizing that Bass Lake Road will function as a major collector facility, commercial and multi family residential uses are designated as appropriate in a small area north of the study area. The area surrounding Bass Lake is designated for park and recreational use.

Land located south of Highway 50 and west of the study area is designated **H** LOW DENSITY RESIDENTIAL, with a maximum density one dwelling unit per five acres. The area south of Highway 50 and east of the study area is designated **G** MEDIUM DENSITY RESIDENTIAL with a maximum density one unit/acre, and **K** OPEN SPACE/ CONSERVATION. The area designated OPEN SPACE/CONSERVATION includes an existing mining use.



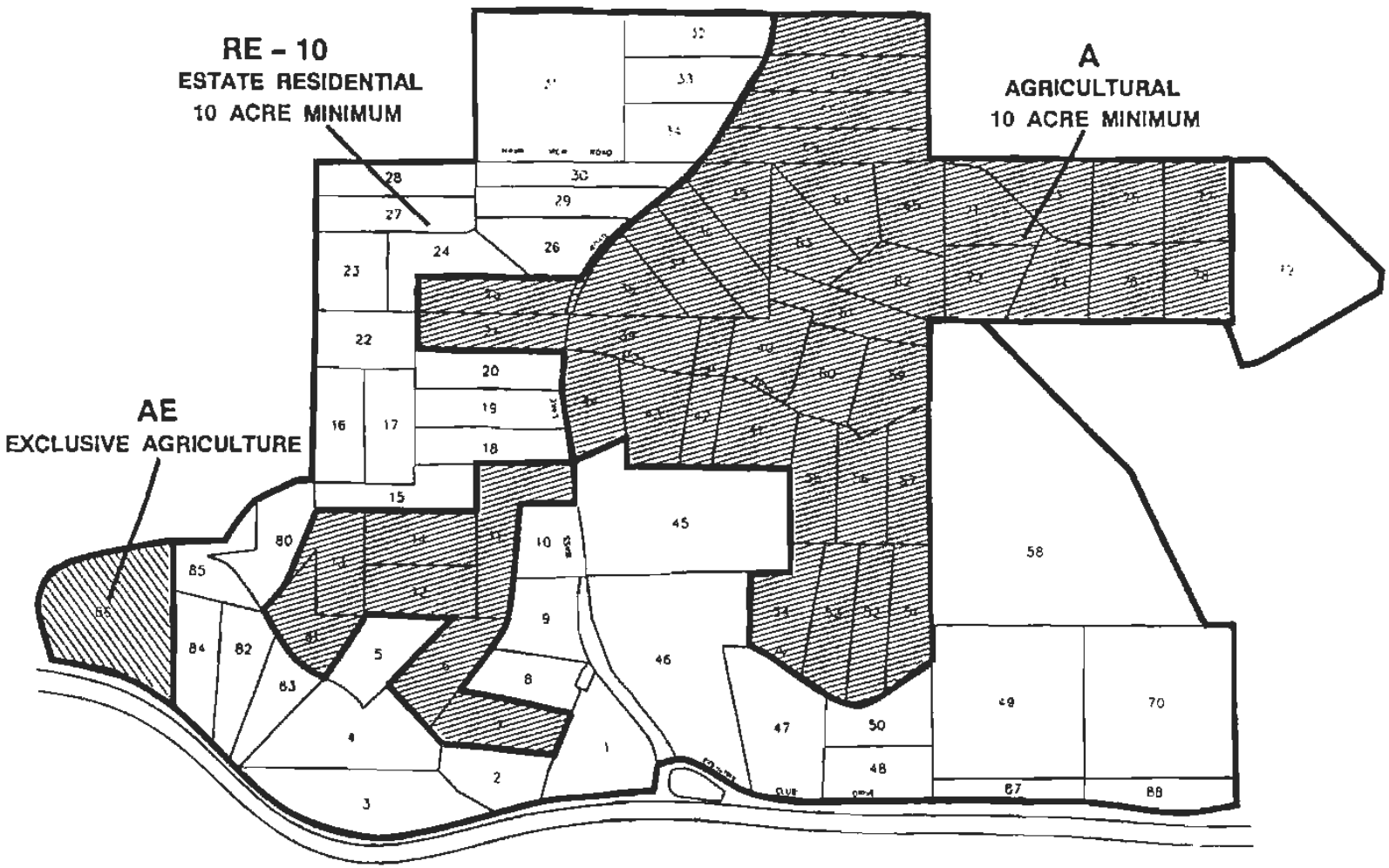
GENERAL PLAN LAND USE | **FIGURE I1**

The El Dorado County Planning Division currently has on file preliminary information and/or formal applications for development of nine residential projects in the Bass Lake study area. These projects propose development of 1,403 homes on ±638 acres, producing an average density of 2.2 units per acre. The **PROPOSED PROJECT** scenario evaluated in this Program EIR assumes that these projects would be developed as proposed. In the portion of the study area where subdivisions have yet to be proposed, the **PROPOSED PROJECT** scenario assumes development to an average density of 3 units per acre on properties where the **General Plan** allows 5 units per acre, and an average density of 1 unit per acre in the remainder of the study area.

Existing zoning designations in the study area are shown in Figure I2 which is copied from the **EL DORADO HILLS – SALMON FALLS AREA PLAN ZONING MAP** (updated March 3, 1990). As shown, there are three zoning designations in the Bass Lake study area. These include: **A**, AGRICULTURAL – 10 ACRE MINIMUM; **RE 10**, ESTATE RESIDENTIAL – 10 ACRE MINIMUM; and **AE**, EXCLUSIVE AGRICULTURE.

Virtually all of the study area is zoned either **A** or **RE 10**. A single 27.0 acre parcel is the only property zoned **AE** in the study area. This parcel is located in the extreme southwest corner of the study area, between Highway 50 and Old Bass Lake Road. It is anticipated that residential projects in the study area will request **R1** SINGLE FAMILY RESIDENTIAL zoning, allowing densities up to 1 unit per acre.

A microwave tower is located on the top of the hill in the east central portion of the study site. Power transmission lines cross the southern end of the property and roughly parallel Bass Lake Road from southwest to northeast. Overhead power distribution lines lead to homes and associated structures. Future residential development will require installation of additional transmission and distribution lines, although most distribution lines will be underground. All of these facilities, as well as home wiring and appliances, generate electrical and magnetic fields.



ZONING DESIGNATION MAP | FIGURE 12

In recent years there has been considerable public concern regarding the potential health hazard posed by electromagnetic fields. Much of this concern is the result of a possible correlation between electromagnetic fields and the incidence of childhood cancer identified by David A. Savitz, Ph.D. in a report to the New York State Department of Health. (Final Report. Case-Control Study of Childhood Cancer and residential Exposure to Electric and magnetic Fields, 1986.) The identified correlation was determined not to be statistically significant, but is noteworthy in that it may be indicative of a potential health hazard which has yet to be documented. In response to the public concern produced by the Savitz and similar studies, the California Department of Health Services prepared Electric and Magnetic Fields: Measurements and Possible Effects on Human Health (1990) to give an overview of the present state of knowledge and provide a basis for understanding science's limited ability to interpret magnetic field measurements. The following summary has been excerpted from the Department of Health publication:

> "Some, but not all, health studies of workers and children have suggested that increased cases of cancer may occur in locations thought to have high magnetic fields. One of these studies found a 50% increase in the cancer rate of children living in the 6% of homes with the highest measured magnetic fields, but this was not statistically significant. In this study the usual rate of 1 case was increased to 1.5 to 2 cases per 10,000 children per year. If this increase is proven to be real it will be about the same as the increased risk of lung cancer experienced by a non-smoking wife exposed to the 'side-stream' smoke of a heavily smoking husband. A number of research studies are now under way to determine with greater certainty if magnetic fields do indeed pose any health risk and, if so, what aspect of the field is harmful."

> "With the scientific information now available it is not possible to set a standard or say that any given level is 'safe' or 'dangerous'. Individuals who are concerned may choose to take steps such as moving an electric clock a few feet away from a bedside table or working on their computer key board further away from a screen or perhaps not using some electrical appliances at all. A reasonable public policy at this time is to inform people about what is known and unknown about this matter."

Pending the development of definitive planning guidelines, many jurisdictions have elected to minimize the potential risk by locating potentially sensitive land uses such as schoolrooms and residences, as far as possible from microwave facilities and electrical transmission/distribution lines. To minimize exposure

of residents, home service mains should not be situated in walls adjacent to sleeping areas and service wiring should be undergrounded. Individual residents may choose to avoid use of electric blankets, water bed heaters, or other electrical devices which, because of the manner in which they are used, are close to the body for an extended period, such as all night.

Development of the study area to residential land uses is consistent with growth occurring throughout the foothills, and evidenced in the local area by continuing residential growth in the El Dorado Hills and Cameron Park areas. However, much of El Dorado County is predominantly rural, supported by a resource oriented economy which cannot easily absorb the greater number of residents. The resulting job/housing imbalance forces many residents to commute to employment centers in the Sacramento metropolitan area. El Dorado County is not unique, such a job/housing imbalance has developed in most of the communities surrounding Sacramento, and is the single most significant cause of the region's traffic congestion and air quality difficulties. Remedy of this situation must be regional in nature and include the establishment of employment generating land uses in proximity to developing residential areas and vice-versa.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] Implementation of the required zoning change and subsequent development of residential projects within the study area will produce a substantial change in land use from the present low intensity rural residential and agricultural use to a more urban environment consistent with high density single family residential land use.

This is a significant unavoidable consequence of project implementation which cannot be fully mitigated,

M The introduction of high density residential development into the existing low density rural residential setting will increase the potential for land use compatibility conflicts. This will be especially true during the transition period when higher density residential land use will be juxtaposed with existing established land uses. Problems which could occur include flies and odors associated with the keeping of livestock, noise from agricultural machinery at unusual hours, the application of agricultural chemicals in close proximity to homes, loose domestic pets disturbing livestock, and an increased need for security and fencing for agricultural operations.

The potential for such conflicts is minimized in the study area by: 1) many of the current parcels are being integrated into the new developments; 2) There are no substantial areas of traditional crop related agriculture adjacent to the study site; and 3) the two areas on the site which could be affected (one at the northwest corner and one at the southwest corner) are both within the one unit per acre portion of the site. The property at the southwest corner also has **(AE) - EXCLUSIVE AGRICULTURE** zoning.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **I01**.

MITIGATION MEASURES

I01 Mitigation for potential land use conflicts between existing agricultural operations and urban development is provided by the **EL DORADO HILLS - SALMON FALLS AREA PLAN** which designates the most likely affected areas as **(G) MEDIUM DENSITY RESIDENTIAL** with a maximum density of one unit per acre and the concurrent zoning designation of **(AE) - EXCLUSIVE AGRICULTURE** for the southwest portion of the site.

The change in land use from low density rural residential to high density urban residential will also be mitigated by the

provisions of the **EL DORADO HILLS - SALMON FALLS AREA PLAN** which requires (page 61, M.M. No. 4) "Non-building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds." M.M. No. 2 (page 63) "Riparian areas should be maintained in a natural state. Where alteration is proposed, the Department of Fish and Game will be notified." Within the study area, the **(G) MEDIUM DENSITY RESIDENTIAL** Area Plan land use designation is applied to the riparian area of Carson Creek along the western edge of the site. This classification requires a minimum of one dwelling unit per acre in recognition of the need to leave the riparian corridor relatively undisturbed.

M.M. No. 4 (page 63) States "Developments having the potential of removing large numbers of trees should be reviewed by qualified individuals in the field of forestry to make recommendations on which trees could be removed in order to maintain a healthy residual stand." This mitigation will be enhanced upon adoption of the proposed County tree ordinance. This proposed ordinance defines a "protected tree" as any oak with a trunk at least eight inches in diameter, and a "heritage tree" as any oak at least 24 inches in diameter, both measured at four and one half feet from the ground. Removal of such trees will be subject to the provisions of the ordinance.

PLANNING CONSIDERATIONS

- Planning of high density residential subdivisions adjacent to land uses which are to remain rural should include measures to minimize the potential conflict resulting from the juxtaposition of these two types of land use.

- Residential development near to power and microwave transmission facilities carries the potential to expose residents to high microwave levels and high electromagnetic fields. As the health effects, if any, are not yet known, no assessment of risk can be made, nor can guidelines

regarding safe exposure be given. Therefore, any mitigation must be precautionary. It is suggested that the potential risk, if any, from microwave transmission/reception and electromagnetic fields be minimized by providing maximum separation of residences from sources.

POPULATION AND HOUSING

The **EL DORADO HILLS - SALMON FALLS AREA PLAN**, which includes the study area, contained 5,459 persons in 1980. As stated in the plan document on page 48, past growth in the plan area has been as follows: 1960-70 - 7.8%; 1970-1980 - 9.0%. For 1980 - 1990, three scenarios were predicted with the following results for the 1990 population: 3% annual growth - 7340; 5% annual growth - 8890; and 8.5% annual growth - 12,360. For the year 2000, these figures are: 3% annual growth - 9850; 5% annual growth - 15,208; and 8.5% annual growth - 27,950.

As stated in the plan, in 1980 the median age was 31.5 years, 50.5% were female, 49.5 were male. The median family income was $30,682, compared to the County average of $20,182.

Education levels were high with 65.5% of heads of household attending some college, 37.2% attended four years for a degree, and 20.2% completed high school.

Only 17% of the population lived in the plan area before 1965; approximately 33% moved to the area between 1965 and 1971; and about 10% moved to the area and stayed until 1971.

Most of the working population is employed in white collar occupations: professional, technical, managerial, office and sales. In 1982, approximately 62% worked in Sacramento County while approximately 21% worked in El Dorado County, including 6.1% in Placerville, 5.8% in El Dorado Hills and 4.9% in Cameron Park.

Housing data from the 1980 U.S. Census (plan, page 53) indicates that there were 1815 total housing units in the plan area. Of

this total, 94% were single family dwellings, just over 2% were duplexes, and 4.4% were in the Sunset Mobile Home Park. The average vacancy rate was 7.71%.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] Utilizing the County Planning Division figure of 3.3 persons per dwelling unit, the 2,901 single family houses anticipated to develop in the study area would, at full buildout, result in a population of approximately 9,573 persons.

As discussed in the various sections of this report, this increase in housing and population will result in significant and unavoidable impacts to vegetation and wildlife, air quality, traffic, and water supply. For this reason, the impacts of the population increase itself are considered significant and unavoidable.

MITIGATION MEASURES

No mitigation measures directly associated with the predicted population and housing increases are warranted. Mitigation measures for specific impacts which will result from the projected growth, such as vegetation, wildlife, traffic, air quality, services, and utilities, are discussed under the appropriate sections of this report.

RECREATION

The recreational needs of future residents of the study area will largely be met through development of local park and recreation facilities. However, regional resources such as Folsom Lake and the American River are vital providers of more extended recreational activities such as swimming, fishing, and boating in El Dorado County. The closest public facilities at Folsom Lake are Browns Ravine and Dyke 8, both of which are accessible from Green Valley Road, approximately 4 miles from the study area. The Browns Ravine marina includes docks and service facilities for roughly 665 boats, as well as a picnic area and parking facilities. Dyke 8, located just west of Browns Ravine, is a major day use area which provides boat launching facilities, picnic areas, swimming, and general use recreation areas. The South Fork of the American River, located approximately 5 miles north of the study area, provides swimming, fishing, and boating opportunities in El Dorado County. The Bureau of Land Management recently recognized the American River, including the portion of the South Fork downstream of the Chili Bar dam, as worthy of National Recreation Area status.

The El Dorado Hills Community Service District (EDHCSD) maintains recreation facilities within the **EL DORADO HILLS - SALMON FALLS AREA PLAN** vicinity. Most of the currently developed EDHCSD facilities are concentrated in the El Dorado Hills area to the west of the study area. These facilities include picnic areas, tennis courts, playgrounds, ponds, pools, ball fields, soccer fields, and nature areas.

Requirements for the provision of recreation and park space within new developments in El Dorado County are contained in County Ordinance Section 16.12.090. The ordinance recognizes a ratio of five acres per thousand population.

The amount of area required to be dedicated for park and recreation facilities is determined based upon the size of the area to be developed, and the proposed density of the development. As proposed housing density increases, so does the amount of area required for recreational space. Developers, at

the County's option, may be allowed to pay an "in lieu" fee rather than set aside recreational area. These in lieu fees are utilized to develop facilities at existing recreation sites within the vicinity. The formula for determining in lieu fees is based upon the fair market value of the area being developed, the size of the area being developed, and the proposed density of the development.

The **EL DORADO HILLS - SALMON FALLS AREA PLAN** (Exhibit 9, page 44) shows both park sites and recreation and bicycle corridors in the vicinity of the study area. The park sites are: 1) at Bass Lake just north of the study area; 2) at Debocco Reservoir northeast of the study site; and 3) Camerado Park, just to the southeast of the study site.

Recreation and bicycle routes identified include: 1) a route paralleling Bass Lake Road from north of Bass Lake to Highway 50 where it turns west to El Dorado Hills; 2) a connection from the Bass Lake/Highway 50 intersection to the east, paralleling Country Club Drive; and 3) a route paralleling the proposed new roadway (Village Green Parkway) connecting the Debocco Reservoir area on the east to the trail system at Oak Ridge High School to the west. The Debocco Reservoir has been integrated into a subdivision as a private recreation facility without any development of a recreation trail to date, so the portion of the trail between Bass Lake and Debocco Reservoir may not be developed. The EDHCSD, however, has expressed interest in development of a full scale recreation facility at Bass Lake.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Using 3.3 persons per household and a recreational space requirement of 5 acres per thousand persons, development of the proposed project will generate a need for approximately 48 acres of recreational space. This need includes both

large area-wide facilities as well as small neighborhood facilities consisting primarily of tot lots with some improvements and open space area for more passive recreational activities.

Recreational impacts of study area development will be mitigated to a less than significant level by implementation of mitigation measure I02.

MITIGATION MEASURES

I02 El Dorado County ordinances require an agreement with the Board of Supervisors as to the manner in which the park requirements are met. This may be land dedication, payment of fees, or a combination of both.

PLANNING CONSIDERATIONS

- To assure that the recreation and bicycle routes are implemented, the County and the EDHCSD should review each proposed tentative map in areas with designated routes. Such a review would be designed to confirm that these routes are adequately accommodated.

TRAFFIC CIRCULATION

This traffic section is based upon the traffic analysis prepared by Omni·Means Transportation Engineers. This section provides a discussion of the traffic conditions and mitigation necessary to fulfill CEQA requirements. Persons requiring detailed traffic engineering data are referred to the Omni·Means Traffic analysis which is appended to this EIR for that purpose.

Currently, land use in the Bass Lake study area is dominated by low density rural residential and agricultural uses. The ±35 residences in the study area are served by a modest roadway system consisting of small unimproved drives which access Bass Lake Road. The most notable drive is Stone Hill Road, which intersects Bass Lake Road about one mile north of Highway 50. Stone Hill Road is a two-lane drive which provides access to a dozen homes located east of Bass Lake Road.

Access to the study area is via Country Club Drive and Bass Lake Road. Country Club Drive is a two-lane improved frontage Road which parallels the north side of Highway 50. There are no residences along Country Club Drive in the study area, but the roadway is a busy residential collector in the Cameron Park community located east of the study area. Presently, the alignment of Country Club Drive through the study area serves as an alternate route between Highway 50 and Cameron Park.

Bass Lake Road is the sole north-south arterial in the study area, providing access to Highway 50 south of the study area, and to Green Valley Road approximately two miles north of the study area. Bass Lake Road is a narrow paved two-lane roadway with numerous horizontal and vertical curves, many of which are sub-standard with estimated design speeds of less than 25 mph.

Highway 50, which parallels the southern boundary of the Bass Lake study area, serves as the primary east/west travel corridor through El Dorado County. From the project study area, Highway 50 continues east through Placerville, South Lake Tahoe, and into Nevada. To the west, Highway 50 connects El Dorado County to the Sacramento metropolitan area. Highway 50 is currently paved and

striped to provide two lanes of travel in each direction. The roadway is rough graded to allow an additional lane in each direction if necessary. In the past, traffic between Sacramento and Lake Tahoe comprised the majority of traffic on the highway. However, as a consequence of development in the foothill communities, an increasing proportion of the traffic is of local origin, commuting to/from the Sacramento area.

Green Valley Road was once the major east-west roadway connecting Sacramento with Placerville and the smaller foothill towns. Completion of Highway 50 in the mid 1970s provided a more direct route for regional traffic, transforming Green Valley Road into a rural collector used principally by local businesses and residents. However, like Highway 50, development of the foothill communities has resulted in notable increases in traffic volumes, particularly during peak commute periods.

EXISTING CONDITIONS

Five existing intersections have been identified by El Dorado County staff as critical to traffic circulation in the project vicinity. These intersections include:

- Bass Lake Road/Highway 50 EB Ramps
- Bass Lake Road/Highway 50 WB Ramps
- Bass Lake Road/Green Valley Road
- Bass Lake Road/Stone Hill Road
- Bass Lake Road/Country Club Drive

All of these intersections are currently stop sign controlled and none have any notable improvements beyond two lanes which provide a left turn lane and a through plus right turn lane where required. Traffic volume counts conducted during the PM peak hour period indicate that all of the examined intersections function at Level of Service (LOS) A, and do not presently warrant signalization.

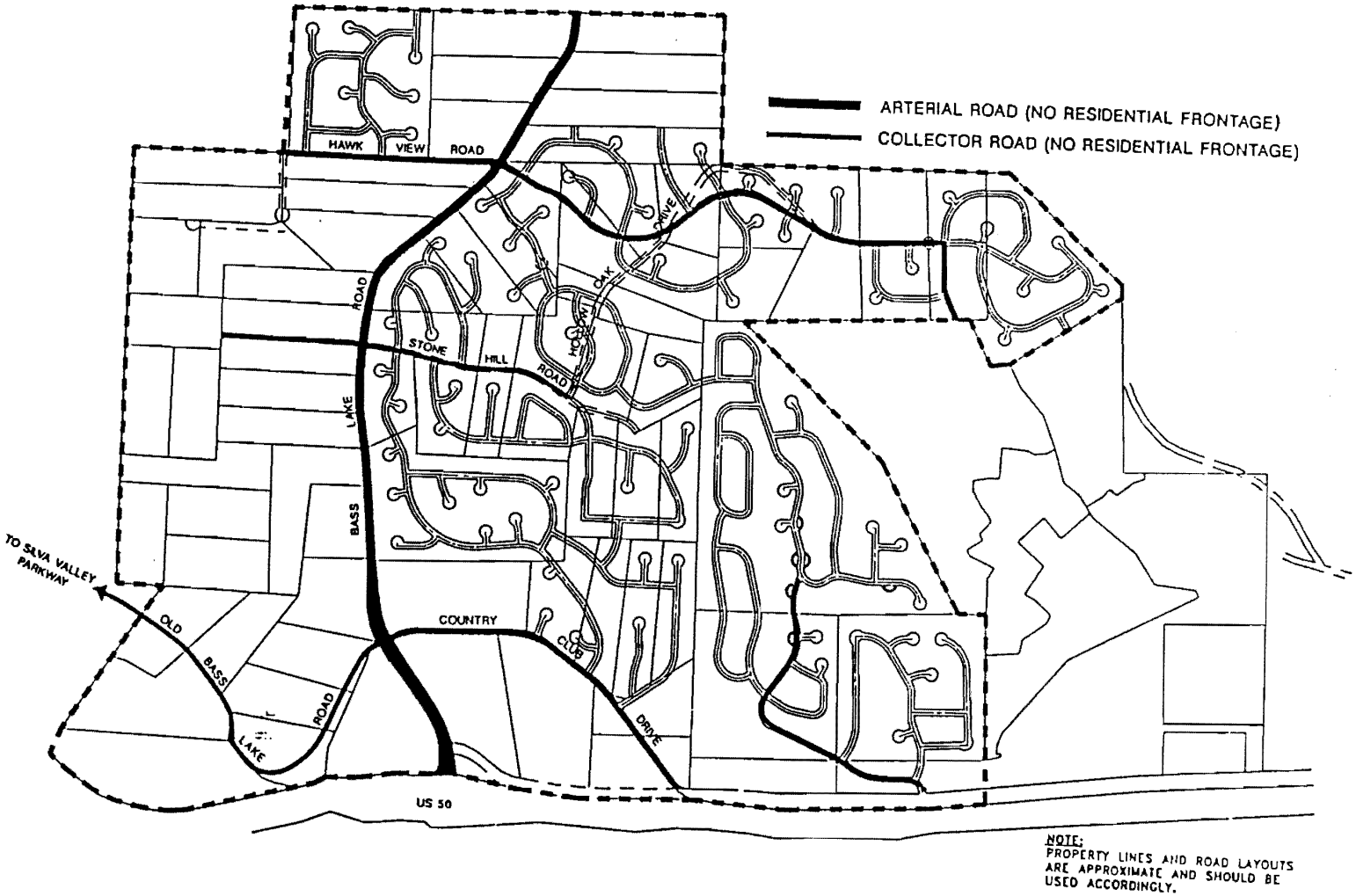
All of the examined roadways (Bass Lake Road, Highway 50, Green Valley Road) operate at LOS A. Bass Lake Road and Green Valley Road have capacity to provide LOS C or better for ±1,500 vehicles per hour (vph). Currently, two-way traffic on Bass Lake Road is ±300 vph, while Green Valley Road serves ±700 vph. Existing volumes of ±4,000 vph on Highway 50 comprise about half of the 8,000 vph LOS C capacity provided by that roadway.

INTERNAL STREET SYSTEM, LOCAL AND COLLECTOR ROADWAYS

Projects within the study area will connect to either Bass Lake Road and/or Country Club Drive. The design and construction of internal streets will be subject to review and approval at the time individual projects are submitted for consideration. Preliminary alignments of internal streets have been prepared for some of the already submitted projects. The configuration of these streets is depicted in Figure J1.

Country Club Drive, Stone Hill Road, Silver Dove Road, Hollow Oak Road and Hawk View Road will serve as the primary collector facilities in the study area. At buildout of the area, these facilities are projected to carry from 3,000 to 10,000 daily vehicles. Two lane facilities with appropriate intersection channelization is estimated to provide satisfactory operations on these facilities. Actual roadway sections will be primarily dependent upon parking and bikelane provisions and residential frontage considerations.

The street network associated with the currently proposed tentative maps consists of the above mentioned collector streets and a network of local loop roadways and cul-de-sacs serving individual lots. The winding alignment of the local roadways is proposed to conform to the existing topography and to discourage alternative "through travel" routes. Bass Lake Road is proposed to be a primary north-south arterial between Highway 50 and Green Valley Road, supported by designated east/west collector facilities. Individual development proposals will need to be further evaluated for consistency with this concept and to discourage cut-through traffic from the major roadway network.



BASE MAP PREPARED BY OMNI MEANS

PROJECT ROADWAYS MAP	FIGURE J1

PROJECT TRIP GENERATION

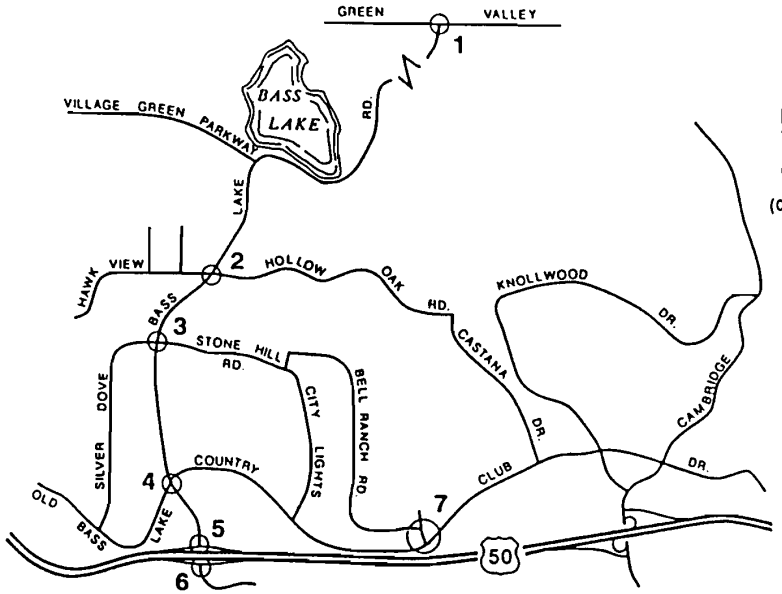
Each home in the study area is predicted to generate 10.1 average daily trips (ADT), and consequently, development of the ±2,903 homes included in the proposed project are predicted to produce 29,320 ADT. Based on a peak hour trip generation rate of 1.0 peak hour trip per home, the proposed project is predicted to generate ±2,903 trips during the PM peak hour period.

TRIP DISTRIBUTION

Project generated trips were distributed based on directional distribution patterns identified using the traffic model for the area developed by TJKM. The model is a land-use driven model which utilizes standard gravity modelling techniques. The model encompasses an area from Cameron Park to the City of Folsom and from Green Valley Road to areas approximately 2 miles south of Highway 50. The model assumes that 50% of the PM peak hour trips would have destinations west on Highway 50, 10% would travel east on Highway 50, and 40% are predicted to travel north to Green Valley Road. Traffic volume estimates associated with individual development areas and proposals in the study area were manually assigned to the roadway network based upon proposed street connections and estimated least time travel paths.

EXISTING PLUS PROJECT SCENARIO

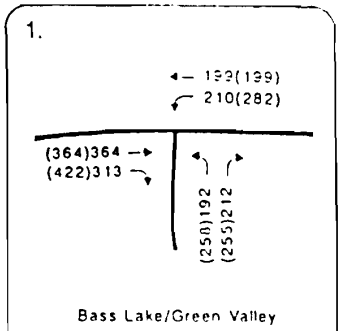
EXISTING PLUS PROJECT traffic volumes are presented in Figure J2. These volumes are calculated by adding project and existing traffic volumes. The predicted operating characteristics of major intersections under EXISTING PLUS PROJECT conditions are presented in Table J1. As indicated, the addition of project traffic to existing volumes will result in unacceptable levels of service at all existing facilities. The only intersection predicted to function at a satisfactory level is the proposed junction of Country Club Drive with Bell Ranch Road.

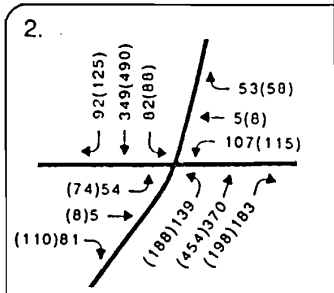


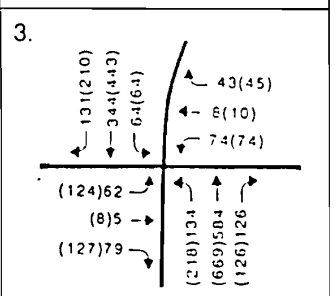
LEGEND

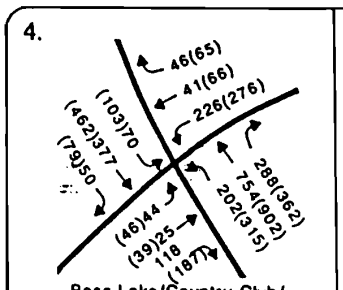
000 = 3 Dwelling Units Per Acre Alternative

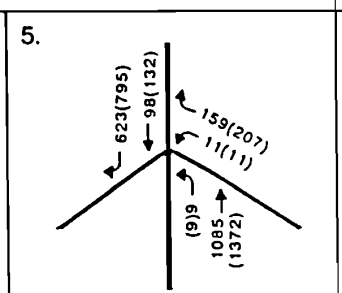
(000) = General Plan Alternative

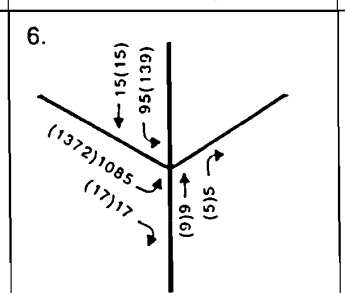


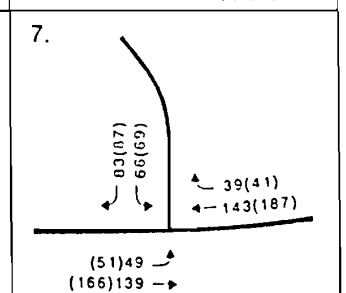












MAP PREPARED BY OMNI MEANS

EXISTING PLUS PROJECT
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE J2

TABLE J1
INTERSECTION AND ROADWAY LEVELS OF SERVICE
EXISTING PLUS PROJECT CONDITIONS

Intersection	LOS without Improvements	Warrants signalization?
Bass Lake Road at Green Valley	F	Yes
Bass Lake Road at Hollow Oak Road	F	Yes
Bass Lake Road at Stone Hill Road	F	No
Bass Lake Road at Country Club	F	Yes
Bass Lake Road at Hwy 50 WB Ramps	E	No
Bass Lake Road at Hwy 50 EB Ramps	F	No
Country Club Drive at Bell Ranch	A	Yes
Bass Lake Road south of Hollow Oak	D	2 lanes
Bass Lake Road south of Country Club	F	2 lanes

All segments of Bass Lake Road south of Hollow Oak Drive would function at LOS F. Under EXISTING PLUS PROJECT conditions, the predicted 12,280 daily trips on Bass Lake Road south of Hollow Oak Road will produce LOS D conditions. South of Country Club Drive, the predicted volume is ±19,650 trips, resulting in LOS F operating conditions.

Under the EXISTING PLUS PROJECT scenario, improvements that would be required to maintain satisfactory levels of service at impacted facilities include:

- The intersection of Bass Lake Road and Hawk View Road would warrant signalization. With signalization, the intersection is projected to operate at LOS B.
- The intersection of Bass Lake Road and Country Club Drive is projected to meet peak hour signal warrant criteria. In addition to signalization, provision of four travel lanes (two lanes per direction) and separate left turn lanes on the Bass Lake Road approaches would be required to maintain LOS C.
- Northbound left turns from the eastbound Highway 50 off-ramp at Bass Lake Road are projected to function at LOS F during the PM peak hour. Traffic control which conveys off-ramp traffic onto Bass Lake Road without interruption would be sufficient to relieve the LOS F condition. Installation of stop signs on the northbound and southbound Bass Lake Road approaches would provide the necessary control.

- Widening of Bass Lake Road to four lanes will be required to maintain LOS C under the EXISTING PLUS PROJECT scenario. With four lanes, Bass Lake Road will function at LOS A south of Hollow Oak Road, and LOS B south of Country Club Drive. This widening is specified by the El Dorado Hills Specific Plan by the year 2000.

All other intersections and facilities are projected to function at acceptable levels without improvements.

ANALYSIS OF FUTURE SCENARIOS

The year 2010 was identified as the year in which buildout of the vicinity is predicted to occur, and consequently, an appropriate year to use in modelling future traffic conditions. In addition to the five existing intersections identified as critical to traffic circulation in the vicinity, El Dorado County staff identified five additional intersections which do not currently exist, but will be constructed by 2010. These include:

Existing Intersections:

- Bass Lake Road/Highway 50 EB Ramps
- Bass Lake Road/Highway 50 WB Ramps
- Bass Lake Road/Green Valley Road
- Bass Lake Road/Stone Hill Road
- Bass Lake Road/Country Club Drive

Proposed Intersections:

- Bell Ranch Road and Country Club Drive
- Bass Lake Road and Village Green Parkway
- Bass Lake Road and Hollow Oak Road
- Bass Lake Road and New Bass Lake Road
- New Bass Lake Road and Green Valley Road

Numerous improvements are proposed to the area roadway system before 2010, and are assumed to occur regardless of the proposed project. Most of the significant improvements are specified in the El Dorado Hills Specific Plan, are to be financed by a fee ordinance. These improvements include:

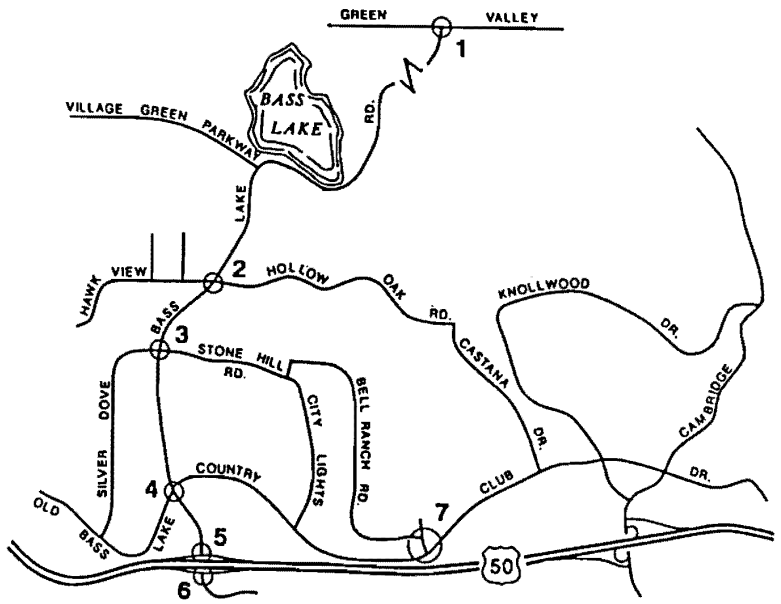
- Signalization of the intersection of Bass Lake Road and the Highway 50 WB ramps.
- Signalization of the intersection of Bass Lake Road and the Highway 50 EB ramps.
- Widen Bass Lake Road to four lanes from Village Green Parkway to Highway 50.

In addition to the improvements specified by the El Dorado Hills Specific Plan, a new alignment of Bass Lake Road is proposed between Bass Lake and Green Valley Road. In this text, the existing alignment is referred to as Bass Lake Road, and the new alignment as New Bass Lake Road.

In order to model future operating conditions, it is necessary to make some assumptions about future intersection geometry. Intersections located on the four lane segment of Bass Lake Road are assumed to have an exclusive left turn lane, one through lane, and a through plus right turn lane on Bass Lake Road. Side streets are assumed to have an exclusive left turn lane and a combination through plus right turn lane. Highway 50 ramp geometries assume separate lanes for each approach movement.

FUTURE WITHOUT PROJECT SCENARIO

Traffic volumes projected for the FUTURE WITHOUT PROJECT scenario include traffic generated by new development other than the proposed project, and traffic from outside of the area that will use local roadways as a consequence of new roadway improvements, such as Village Green Parkway. A description of development assumed for the 2010 scenario is included in the Omni·Means Traffic Analysis appended to this report. Projected PM peak hour traffic volumes for FUTURE WITHOUT PROJECT are shown in Figure J3.



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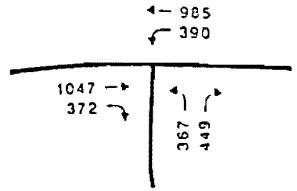
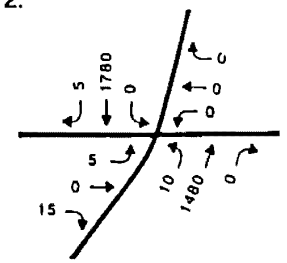


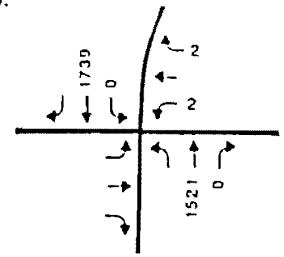
Bass Lake/Green Valley

2.



Bass Lake/Hawk View/Hollow Oak

3.



Bass Lake/Silver Dove/Stone Hill

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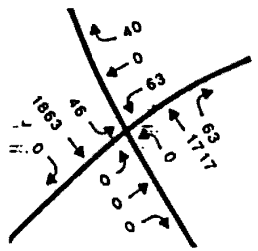
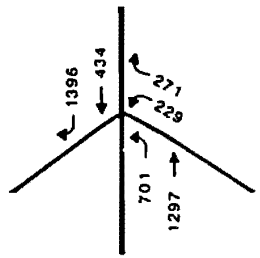


Bass Lake/Country Club/
Old Bass Lake

5.



Bass Lake/Hwy. 50 W.B.Ramps

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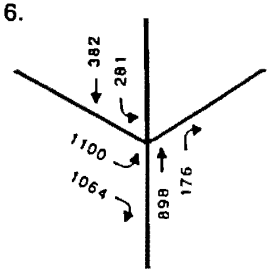

Bass Lake/Hwy. 50 E.B. Ramps

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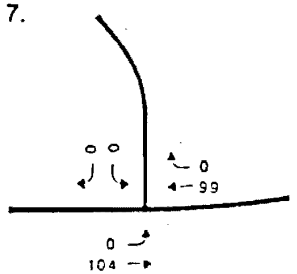


Bell Ranch/Country Club

MAP PREPARED BY OMNI MEANS

FUTURE WITHOUT PROJECT
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE J3

As indicated in Table J2, under FUTURE WITHOUT PROJECT conditions all of the area intersections are predicted to function at less than acceptable levels of service.

TABLE J2
LEVELS OF SERVICE
FUTURE WITHOUT PROJECT CONDITIONS

	LOS*	Warrants signalization?
Existing Intersections		
Old Bass Lake Road at Green Valley	E	No
Bass Lake Road at Stone Hill Road	E	No
Bass Lake Road at Country Club	F	Yes
Bass Lake Road at Hwy 50 WB Ramps	F	1.10
Bass Lake Road at Hwy 50 EB Ramps	F	1.52
Future Intersections		
Bass Lake Road at Hollow Oak Road	E	No
Bass Lake Road at New Bass Lake Road	E	Marginal
Bass Lake Road at Village Green Parkway	F	Yes
New Bass Lake Road at Green Valley	F	Yes
Country Club Drive at Bell Ranch	---	
Roadways		
Bass Lake Road south of Hollow Oak	F	4 lanes
Bass Lake Road south of Country Club	F	4 lanes

* LOS calculated assuming intersections on the four lane segment of Bass Lake Road are assumed to provide an exclusive left turn lane, one through lane, and a through plus right turn lane on Bass Lake Road. Side streets are assumed to provide an exclusive left turn lane and a combination through plus right turn lane. Highway 50 ramp geometries assume separate lanes for each approach movement.

Hollow Oak Road/Bass Lake Road and Stonehill Road/Bass Lake Road. Under the FUTURE WITHOUT PROJECT scenario, the unsignalized intersections of Hollow Oak Road/Bass Lake Road and Stonehill Road/Bass Lake Road are predicted to operate at worst-case LOS E.

Because of the negligible traffic volumes that will exist on the side streets, the intersections would not meet signal warrants.

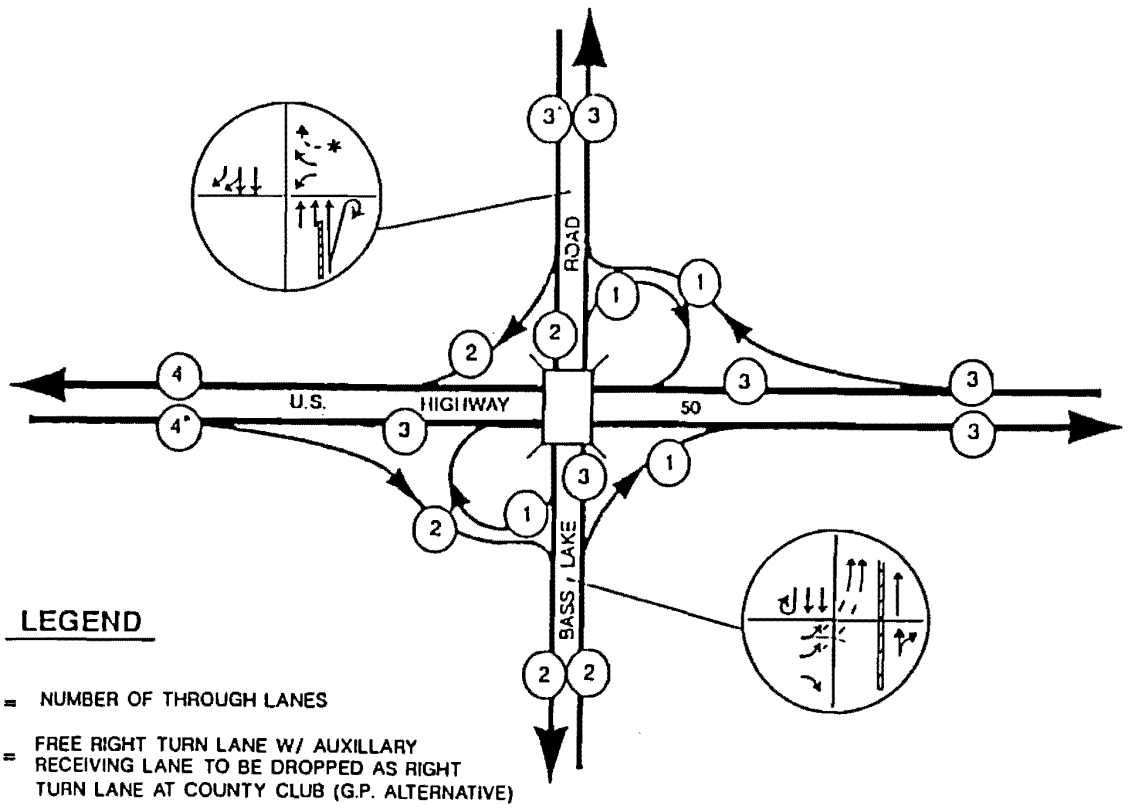
Country Club Drive and Bass Lake Road. Without improvement, the intersection of Country Club Drive and Bass Lake Road will operate at LOS F under the FUTURE WITHOUT PROJECT scenario. The intersection will require signalization, construction of a separate northbound right turn lane and a southbound left turn lane on Bass Lake Road, and a separate left turn lane on the westbound Country Club Drive approach in order to maintain LOS C.

Highway 50 Ramps and Bass Lake Road. In order to accommodate FUTURE WITHOUT PROJECT traffic volumes, it will be necessary to reconstruct the Highway 50/Bass Lake Road interchange as a standard L-9 configuration. This configuration is shown in Figure J4. A four lane undercrossing (2 SB and 2 NB lanes) with a 2-phase signal at each ramp intersection will be required under FUTURE WITHOUT PROJECT conditions.

Bass Lake Road and Village Green Parkway. Signalization of the intersection of Bass Lake Road with Village Green Parkway with construction of dual left turn lanes on northbound Bass Lake Road, and separate left and right turn lanes on eastbound Village Green Parkway will be required at to maintain LOS C.

Bass Lake Road and New Bass Lake Road. The intersection of New Bass Lake Road and Bass Lake Road will marginally approach peak hour signal warrants under FUTURE WITHOUT PROJECT conditions. Left turn channelization on southbound Bass Lake Road with separate left and right turn lanes on Bass Lake Road is recommended. Signalization will not be required under the FUTURE WITHOUT PROJECT scenario.

Bass Lake Road and Green Valley Road. Construction of the new Bass Lake Road alignment is projected to alleviate the need for signalization of the intersection of the Bass Lake Road and Green Valley Road under the FUTURE WITHOUT PROJECT scenario. Separate left and right turn lanes will be required on Bass Lake Road. Left turn channelization in conjunction with four travel lanes on Green Valley Road is recommended.



TYPE L-9

FIGURE COURTESY OF TJKM TRAFFIC ENGINEERS

BASS LAKE ROAD / HIGHWAY 50 FUTURE WITHOUT PROJECT	FIGURE J4

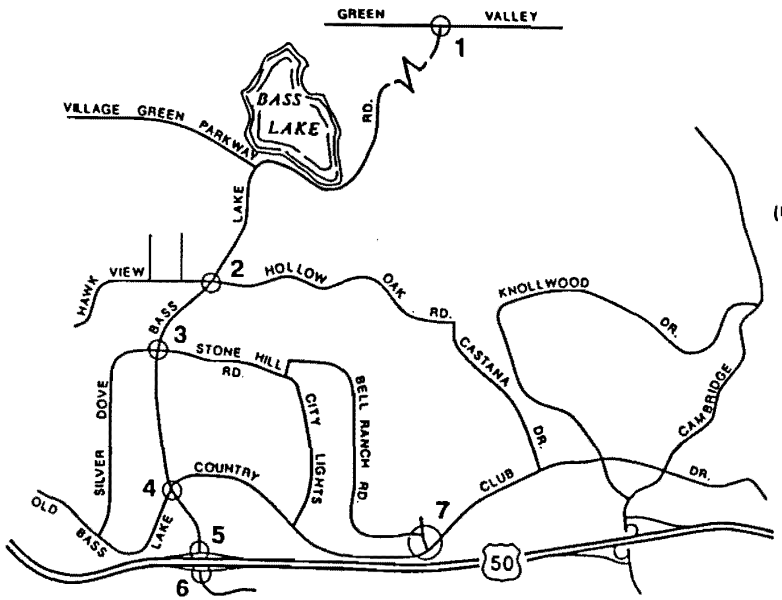
New Bass Lake Road and Green Valley Road. Under the FUTURE WITHOUT PROJECT scenario, the intersection of New Bass Lake Road and Green Valley Road will require signalization with four travel lanes on Green Valley Road (two in each direction), a separate eastbound right turn lane, dual westbound left turn lanes, and separate northbound left and right turn lanes. With this configuration, the intersection will function at LOS B.

Highway 50. To maintain acceptable operating conditions on Highway 50, it will be necessary to widen the roadway west of Bass Lake Road to four lanes in the westbound direction and to three through lanes plus one exit only lane eastbound. Under FUTURE WITHOUT PROJECT conditions, these improvements will provide LOS E. East of Bass Lake Road, three through lanes in each direction will be required to maintain LOS E on Highway 50.

FUTURE PLUS PROJECT SCENARIO

Traffic volumes projected for the FUTURE PLUS PROJECT scenario include traffic generated by new development including the proposed project, as well as traffic from outside of the area that will use local roadways as a consequence of new roadway improvements, such as Village Green Parkway. A list of assumed development for the 2010 scenario is provided in the Omni·Means Traffic Analysis appended to this report. Projected traffic volumes for FUTURE PLUS PROJECT conditions are shown in Figure J5.

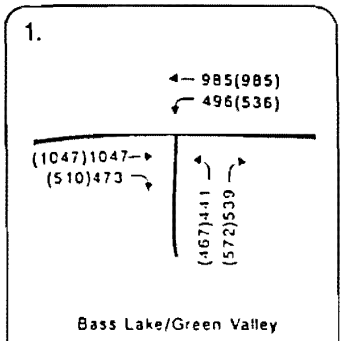
Bass Lake Road at Hollow Oak Road. Without improvements beyond those required for the FUTURE WITHOUT PROJECT scenario, the intersection of Bass Lake Road at Hollow Oak Road will function at LOS F under the FUTURE PLUS PROJECT scenario. Under FUTURE WITHOUT PROJECT conditions, the intersection was unsignalized and Bass Lake Road was assumed to be four lanes with an exclusive left turn lane, one through lane, and a through plus right turn lane. Hollow Oak Road was assumed to have an exclusive left turn lane and a combination through plus right turn lane. Under FUTURE PLUS PROJECT conditions, Bass Lake will have to be widened to six lanes, the intersection will have to be signalized,, and separate left turn lanes will have to be added on all approaches.



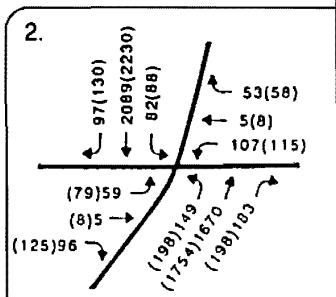
LEGEND

000 = 3 Dwelling Units Per Acre Alternative

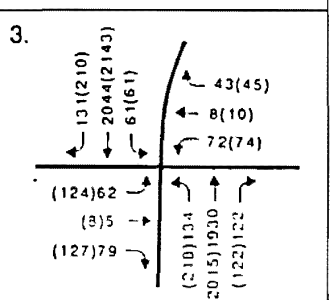
(000) = General Plan Alternative



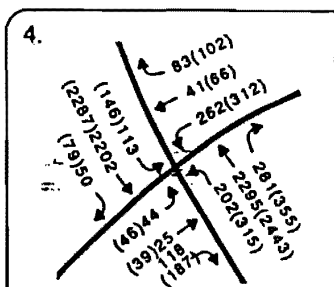
Bass Lake/Green Valley



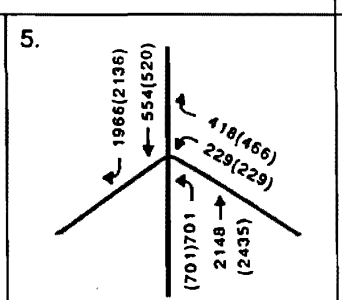
Bass Lake/Hawk View/Hollow Oak



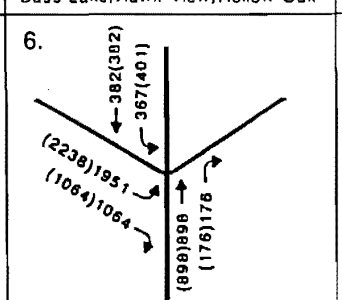
Bass Lake/Silver Dove/Stone Hill



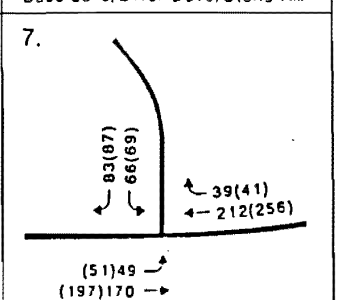
Bass Lake/Country Club/
Old Bass Lake



Bass Lake/Hwy. 50 W.B.Ramps



Bass Lake/Hwy. 50 E.B. Ramps



Bell Ranch/Country Club

MAP PREPARED BY OMNI MEANS

FUTURE WITH PROJECT PM PEAK HOUR TRAFFIC VOLUMES

FIGURE J5

TABLE J3
LEVELS OF SERVICE
FUTURE PLUS PROJECT CONDITIONS

	LOS*	V/C or R.C.
Existing Intersections		
Old Bass Lake Road at Green Valley	E	55
Bass Lake Road at Stone Hill Road	F	1.00
Bass Lake Road at Country Club	F	1.31
Bass Lake Road at Hwy 50 WB Ramps	F	1.67
Bass Lake Road at Hwy 50 EB Ramps	F	2.26
Future Intersections		
Bass Lake Road at Hollow Oak Road	F	1.05
Bass Lake Road at New Bass Lake Road	F	-30
Bass Lake Road at Village Green Parkway	F	-280
New Bass Lake Road at Green Valley	F	1.19
Country Club Drive at Bell Ranch	A	431
Roadways		
Bass Lake Road south of Hollow Oak	F	4 lanes
Bass Lake Road south of Country Club	F	4 lanes

* LOS calculated assuming intersections on the four lane segment of Bass Lake Road are signalized, and provide an exclusive left turn lane, one through lane, and a through plus right turn lane on Bass Lake Road. Side streets are assumed to provide an exclusive left turn lane and a combination through plus right turn lane. Highway 50 ramp geometries assume separate lanes for each approach movement.

Bass Lake Road at Stone Hill Road. Without improvements beyond those required for the FUTURE WITHOUT PROJECT scenario, the intersection of Bass Lake Road at Stone Hill Road will function at LOS F under the FUTURE PLUS PROJECT scenario. Under FUTURE WITHOUT PROJECT conditions, the intersection was able to function unsignalized. Bass Lake Road was assumed to be four lanes with an exclusive left turn lane, one through lane, and a through plus right turn lane at the intersection. Stone Hill Road was assumed

to have an exclusive left turn lane and a combination through plus right turn lane. This geometry is not sufficient to maintain LOS C under FUTURE PLUS PROJECT conditions. To maintain LOS C, Bass Lake will have to be widened to six lanes, the intersection will have to be signalized, and separate left turn lanes will have to be added on all approaches.

Country Club Drive and Bass Lake Road. In order to provide LOS C under FUTURE WITHOUT PROJECT conditions, the intersection of Country Club Drive and Bass Lake Road required signalization, a separate northbound right turn lane and a southbound left turn lane on Bass Lake Road, and a separate left turn lane on the westbound Country Club Drive. Under FUTURE PLUS PROJECT conditions, six travel lanes will be required on Bass Lake Road, and separate left-turn lanes (dual lefts on NB and WB approaches) will be required on all approaches to maintain LOS C.

Country Club Drive and Bell Ranch Road. This intersection would be constructed in conjunction with development of the Bell Ranch development. Bell Ranch Road would be a two lane residential collector. Provision of an eastbound left turn pocket will be the only improvement required on Country Club Drive.

Highway 50 Ramps and Bass Lake Road. Construction of a standard L-9 intersection would be warranted to accommodate FUTURE WITHOUT PROJECT traffic conditions at the intersection of the Highway 50 ramps and Bass Lake Road. However, under that scenario, a four lane underpass (two lanes in each direction) was all that would be required. Under the FUTURE PLUS PROJECT scenario, a five lane undercrossing (2 southbound and 3 northbound lanes) with a two phase signal at each ramp intersection will be required. The overall configuration will have to be constructed to provide the southbound Bass Lake Road approach with a two lane on-ramp to westbound Highway 50 and a one lane loop on-ramp to eastbound Highway 50. The northbound Bass Lake Road approach will need to provide a one lane on-ramp to eastbound Highway 50 and a one lane loop on-ramp to westbound Highway 50. This northbound Bass Lake Road approach will consist of a one lane undercrossing from south of the eastbound ramp intersection and will be a controlled lane under the entire length of the undercrossing. Two additional

northbound lanes are required to accommodate left turning vehicles from the eastbound off-ramp to northbound Bass Lake Road. This results in a total of three northbound lanes passing under the overcrossing. Vehicles travelling from eastbound Highway 50 to northbound Bass Lake Road will require this channelization to permit two-phase signal operations.

Bass Lake Road and Village Green Parkway. Under FUTURE WITHOUT PROJECT conditions, the intersection of Bass Lake Road with Village Green Parkway would require signalization, dual left turn lanes on northbound Bass Lake Road, and separate left and right turn lanes on eastbound Village Green Parkway. Under FUTURE PLUS PROJECT conditions, dual eastbound left turn lanes on Village Green Parkway and a southbound right turn lane on Bass Lake Road would be required in addition to the dual northbound left turn lanes previously identified. With these improvements, the intersection will function at LOS C.

Bass Lake Road and New Bass Lake Road. Under the FUTURE WITHOUT PROJECT scenario, the intersection of New Bass Lake Road and Bass Lake Road would marginally approach peak hour signal warrants. Left turn channelization on southbound Bass Lake Road with separate left and right turn lanes on Bass Lake Road was recommended, but signalization was not required. Under FUTURE PLUS PROJECT conditions, signalization of the intersection will be the only additional improvement required, and this action will provide LOS A operations.

Bass Lake Road and Green Valley Road. Construction of the new Bass Lake Road alignment is projected to alleviate the need for signalization of the intersection of Bass Lake Road and Green Valley Road under FUTURE WITHOUT PROJECT conditions. Separate left and right turn lanes would be required on Bass Lake Road. Left turn channelization in conjunction with four travel lanes on Green Valley Road was recommended. No additional improvements would be warranted to accommodate FUTURE PLUS PROJECT conditions.

New Bass Lake Road and Green Valley Road. Under FUTURE WITHOUT PROJECT conditions, the intersection of New Bass Lake Road and Green Valley Road would require signalization with four travel

lanes on Green Valley Road (two in each direction), a separate eastbound right turn lane, dual westbound left turn lanes, and separate northbound left and right turn lanes. Under the FUTURE PLUS PROJECT scenario, dual northbound left turn lanes will be required to maintain LOS C.

Highway 50. To maintain acceptable operating conditions on Highway 50, it will be necessary to widen the roadway west of Bass Lake Road to four lanes in the westbound direction and to three through lanes plus one exit only lane eastbound. Under FUTURE WITHOUT PROJECT conditions, these improvements will provide LOS E. East of Bass Lake Road, three through lanes in each direction will be required to maintain LOS E on Highway 50.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] Proposed development of the Bass Lake study area will contribute to the volume of traffic using local roadways. Without improvements, virtually all local facilities will function at unacceptable Levels of Service. Even with implementation of the identified mitigation, Bass Lake Road is predicted to function at LOS F.

This impact will be mitigated, but not to a less than significant level by implementation of measures **J01** and **J02**.

MITIGATION MEASURES

Roadway improvements which are already proposed, and will be constructed regardless of the project include:

- signalize the intersection of Bass Lake Road and Highway 50 westbound on/off ramps.
- signalize the intersection of Bass Lake Road and Highway 50 eastbound on/off ramps.

- signalize the intersection of Bass Lake Road and Village Green Parkway.
- construction of Village Green Parkway from El Dorado Hills to Bass Lake Road.
- construction of a new alignment of Bass Lake Road from a location north of Bass Lake to Green Valley Road.
- widen Bass Lake road to four lanes from Village Green Parkway to Highway 50. Modeling indicates that this widening will not be sufficient, and that six lanes will be required by "future without project" conditions to maintain LOS C.

G04 Individual projects will provide turn out lane(s), bus stop shelters, or other infrastructure necessary to facilitate extension of transit services to the study area. The location, number, and design of these facilities will be established based on consultation with RT and the El Dorado County Department of Public Works. The required facilities will be identified on Tentative Maps and identified as conditions of approval of the various projects.

J01 Roadway improvements, beyond those required to serve FUTURE WITHOUT PROJECT conditions, will be provided to accommodate project traffic. Even with these improvements, Highway 50 is predicted to remain at LOS E, and Bass Lake Road would deteriorate to LOS F. Developments in the Bass Lake study area will provide construction and/or funding to construct individual improvements required by those projects. These improvements include:

Bass Lake Road at Hollow Oak Road:
- signalization will provide LOS C

Bass Lake Road at Stone Hill Road:
- signalization will provide LOS C

Bass Lake Road at Country Club Drive:
- add left-turn lanes to the SB and EB approaches
- add dual left-turn lanes to the NB approach
- add a second left-turn lane to the WB approach

Bell Ranch at Country Club Drive:

- this intersection will be created with an EB left-turn pocket.

Bass Lake Road at Highway 50:

- addition of a third northbound lane on Bass Lake Road under Highway 50.

- installation of a two phase signal at each ramp intersection will be required.

J02 Developments within the Bass Lake study area will pay County transportation fees, participate in an Area of Benefit, or other similar financing mechanism to provide required transportation facilities.

PLANNING CONSIDERATIONS

o Development of a "Park & Ride" facility near the intersection of Bass Lake Road and Country Club Drive should be required in conjunction with development of the area. Such a facility should be identified early in the planning process to ensure adequate space is reserved prior to development. Individual projects could be assessed a prorated portion of the costs associated with establishment of this facility.

UTILITIES

Utilities which will be required to serve development in the study area include water, sewer, gas and electricity, and telephone. Each of these utilities is discussed in the following subsections of this report.

WATER SUPPLY

The El Dorado Irrigation District (EID) is the utility which would provide domestic water to any projects developed within the study area. At present, the majority of the parcels within the study area are not within the District. Provision of service will require annexation.

The El Dorado Irrigation District (EID) receives water from numerous sources, the most notable are Sly Park Reservoir (47%), PG&E Forebay (37%), Folsom Lake (9%), and Crawford Ditch (7%). The District has entitlements to approximately 49,000 acre feet of water per year. However, because of climatic variability, not all of this water is available for use each year. Consequently, the District allocates water based on annual "firm yield". Firm yield is calculated as the volume of water which the District can, with a 95% confidence level, be assured of receiving each year. The District currently maintains an annual firm yield of approximately 41,080 acre feet. Presently, the demand for water in western El Dorado County exceeds the firm yield maintained by the District. Since the District cannot, with an acceptable level of confidence, guarantee water to new customers, a water emergency has been instituted. The water emergency suspends sale of new water meter services until additional water is available.

Numerous new sources of water are being pursued, the most notable of which include improvement of the Sly Park Flashboards, Expansion of the El Dorado Hills Water Treatment Plant, Completion of the White Rock Penstock project and expansion of the Bray Treatment Plant in Placerville, improvement of the Texas Hill Reservoir, and completion of the Small Alder project. As indicated in Table K1, these projects have been categorized as

near term, mid term or long term. Those projects categorized as near-term are anticipated to be completed within three years (by 1994); those categorized as mid term are predicted to be completed within three to seven years (1994-1998); and those classified as long term are not expected to be completed any sooner than seven years (not before 1998).

TABLE K1
PROPOSED E.I.D. SYSTEM IMPROVEMENTS

Project	Additional Availability	Estimated Completion
Sly Park Flashboards	500 Acre Feet	Near Term
Expansion of the El Dorado Hills Treatment Facility	1,600 Acre Feet	Near Term
White Rock Penstock/ Bray Treatment Plant	30,000 - 40,000 Acre Feet	Mid Term
Texas Hill Reservoir	10,000 Acre Feet	Long Term
Small Alder project	10,000 Acre Feet	Long Term

The White Rock Penstock project will enable the District to obtain water through SMUD from the American River drainageshed. Improvement of the Bray Water Treatment Facility near Placerville will provide treatment capability for this water. Initially the plant will be capable of treating 26 mgd. Ultimate expansion to 77 mgd is proposed. In addition, recent completion of the Hazel Creek Tunnel further enables the District to divert purchased water from PG&E into the Sly Park reservoir where it can be stored and utilized as needed. Because of the cost in obtaining water through this diversion, it is envisioned as a backup rather than primary source for District water.

Raw water from Folsom Lake is treated at the District's El Dorado Hills treatment facility. This facility has a current treatment capability of approximately 4.7 million gallons per day (mgd), but is being upgraded to provide 12.5 mgd treatment capability.

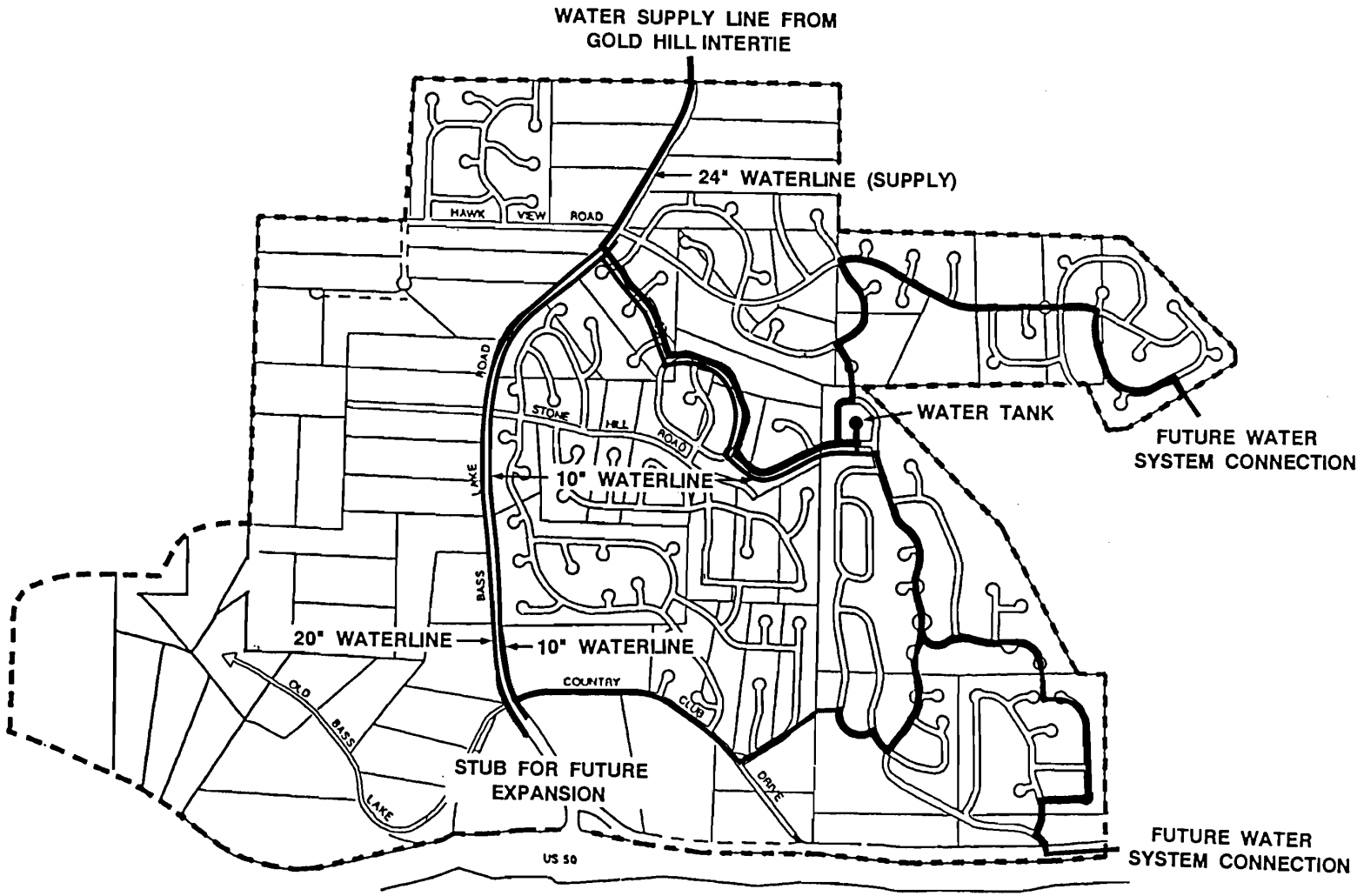
Although this expansion is partly in anticipation of additional entitlements from Folsom Lake, the major impetus is to enable the District to utilize a large portion of its Folsom Lake water during the winter when pumping is relatively inexpensive, thus saving the District's gravity fed sources for the summer season.

Because most of the existing residences utilize private wells, current water usage in the study area is unknown. For planning purposes, EID recognizes a consumption rate of 1,500 gallons of water per equivalent dwelling unit (EDU) per day as maximum day demand. Average day demand is 600 gallons per day per EDU, or 0.67 acre-feet per year. An EDU is defined as an average single family home with 2.7 persons.

Omni·Means has prepared a preliminary infrastructure plan for extension of water to the study area. This plan is presented in Figure K1. Water service to the study area would be extended from the Gold Hill Intertie. The Gold Hill intertie is an 18" line located adjacent to Bass Lake north of the study area. Treated water is conveyed in the intertie, and extension of water to the study area would not be routed through the Bass Lake Treatment plant. According to the Omni·Means report, the basis for the trunk water distribution system is a study being prepared for EID by CH2MHill consultants. As shown in Figure K1, the foundation of the system is a 24" trunk line which would feed water from the Gold Hill intertie to a 3 million gallon storage system located in the Bell Ranch project. A looped system using 10" water line would be created from the storage tank(s) to serve development on the east side of Bass Lake Road. Eventual extension of service to the west side of the road would be provided through a 20" water line in Bass Lake Road which would be extended directly from the Gold Hill intertie.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.



PROPOSED WATER SYSTEM	FIGURE K1

S Assuming an average water use rate of 600 gallons per day per dwelling unit, the 2,901 homes proposed in the study area will require an average of 1,740,600 gallons per day. Using a maximum day demand of 1,500 gallons per household, development in the study area could generate a peak demand for 4,351,600 gallons per day. Provision of this water will require new transmission and distribution lines from the Gold Hill intertie into the study area, and LAFCO approval of annexation of those properties not currently within the District. Site specific environmental review of the proposed water lines will be required at the time engineering plans are submitted.

This impact must be recognized as significant because sufficient water is not available to serve development. This impact could be mitigated to a less than significant level at a future date when/if water becomes available. At that time, implementation of measure K01 is suggested to be sufficient to reduce the magnitude of this impact to a less than significant level.

MITIGATION MEASURES

K01 Those projects which are not currently within the District will be required to petition LAFCO for annexation. As a responsible public agency, LAFCO cannot approve such annexation unless it reasonably concludes that there is adequate guarantee that future water will be available to serve new development. Each project will be required to obtain an "ability to serve" letter from EID. Such a letter cannot be issued until sufficient water supply is available and the moratorium is lifted. Pursuant to Resolution No. 90-39, EID has indicated that it will only issue water meters when new sources of water become available. Consequently, service to the project area will not have a significant impact on the cost of adequacy of service within the District.

PLANNING CONSIDERATIONS

- Subdivisions approved within the study area should be required to include water conserving design features. Such features could include: use of low water use landscaping; water metering; penalties for excessive use; use of recycled water for landscaping; and designation of groundwater recharge areas if geologically feasible.

SEWER SERVICE

In addition to providing water for domestic use, EID also maintains and operates the wastewater treatment facilities serving development in western El Dorado County. The Bass Lake study area is served by two treatment facilities, the El Dorado Hills wastewater treatment plant and the Deer Creek wastewater treatment plant. The division between the service areas of the plants is the Section line located approximately one-half mile east of Bass Lake Road. Development west of this Section line will be served by the El Dorado Hills facility, while development to the east will be served by the Deer Creek facility. Annexation into the District is a prerequisite to service.

The El Dorado Hills treatment plant has an average dry weather flow (ADWF) capacity of 1.6 mgd. Typical flows of 1.1 to 1.3 mgd currently occur at the plant. Expansion of the plant to 2.7 mgd is proposed to occur in 1993-94. In conjunction with this expansion, the level of treatment will be elevated from secondary to tertiary. The Deer Creek treatment plant has an ADWF capacity of 2.4 mgd. Under present conditions, typical flows of 1.8 mgd occur. This facility is scheduled to be expanded in 1993-94 to provide treatment capability of 5 mgd.

As growth continues, it is anticipated that operation of the wastewater treatment facilities will become more complicated. In addition to the increased volume of effluent requiring treatment, more stringent discharge constraints and encroaching urban land uses are anticipated to complicate operation of the existing facilities. Development has already begun to encroach on the El

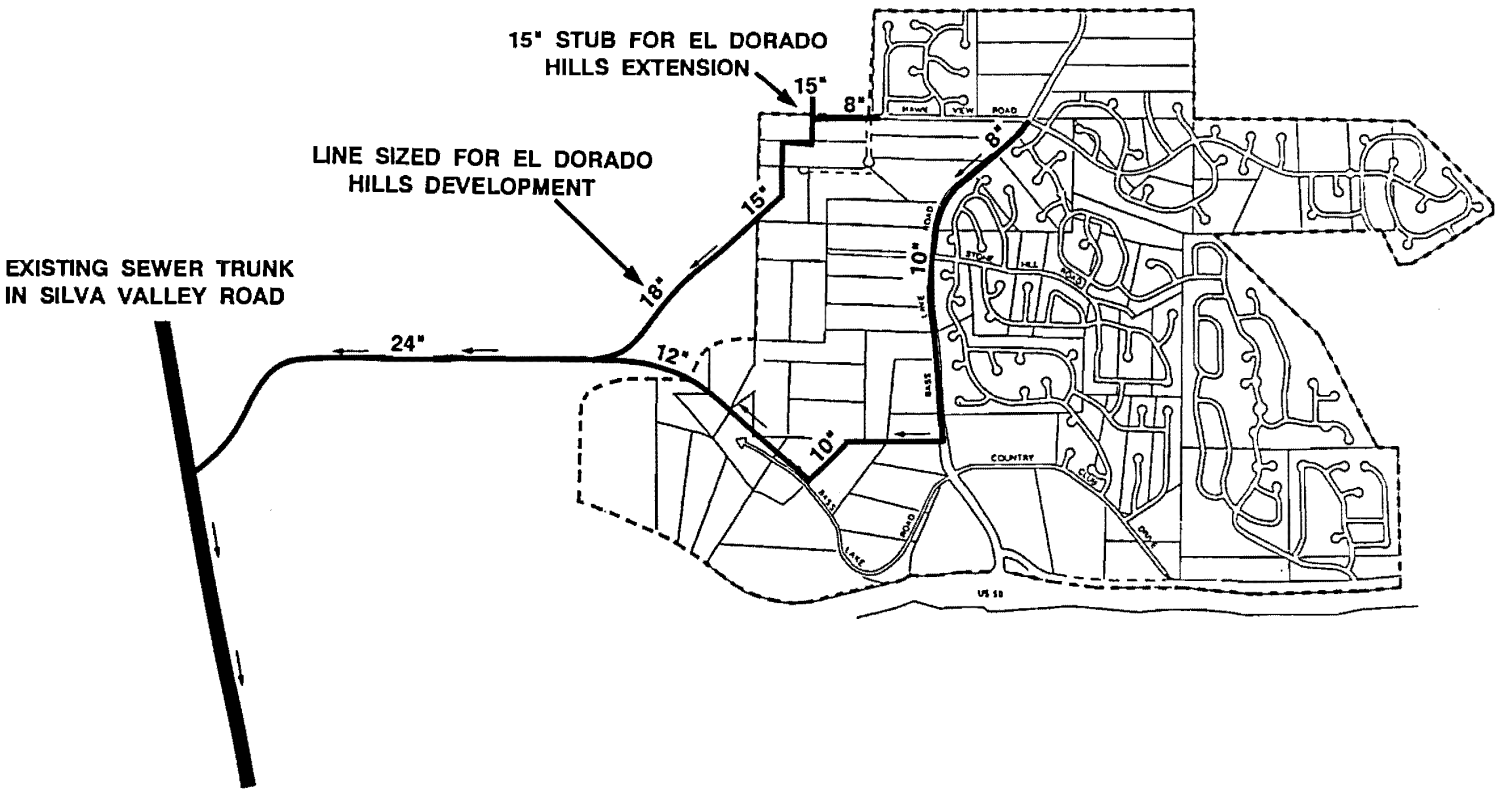
Dorado Hills facility. Although the presently proposed expansions are anticipated to be sufficient for continued growth in the immediate future, the District is evaluating other long term solutions which might exist. Two of these options include development of a regional plant near Latrobe Road, which would allow eventual closure of the El Dorado Hills facility, and the partial bypass of sewage from the Deer Creek facility.

EID utilizes a wastewater generation rate of 300 gallons per day per single family dwelling unit (ADWF) with a peaking factor of 2.5 for wet weather conditions.

Omni·Means has prepared a preliminary infrastructure plan for extension of sewer service to the study area. This plan is presented in Figure K2. The closest sewer connection to the eastern side of the study area is to the infrastructure in Bar J Ranch (Camerado Oaks) immediately adjacent to the study area. On the west, the closest sewer main is located in Silva Valley Road. As shown in Figure K2, construction of a sewer main will be required along Carson Creek from the study area to Silva Valley Road. The 24" trunk sewer line along Carson Creek is already proposed to serve El Dorado Hills. However, construction of that line is not proposed to occur in time to serve initial development in the study area. Preliminary discussions have been held with the El Dorado Hills Development Company regarding the feasibility of connecting a sewer trunk to their proposed 24" line along Carson Creek. While it is likely that El Dorado Hills may not construct the proposed 24" trunk line by the time it could be needed by the Bass Lake Group, it appears that an agreement could be reached that would allow the Bass Lake Group to construct the line across El Dorado Hills property. Site specific environmental review of the proposed sewer line will be required at the time engineering plans are submitted.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.



PROPOSED SEWER SYSTEM | **FIGURE K2**

M At the rate of 300 gallons of wastewater per day per dwelling unit, the 2,901 homes anticipated to be developed within the study area would require treatment for 870,300 gallons per day. At the peaking factor of 2.5 for wet weather conditions, the peak demand would be for treatment of 2,175,750 gallons per day. Provision of this amount of treatment will require extension of new collection lines and, coupled with other anticipated development in the vicinity, will require expansion of treatment facilities.

This impact will be mitigated to a less than significant level through implementation of mitigation measure K02.

MITIGATION MEASURES

K02 Presently proposed capacity with programmed expansions are adequate to handle anticipated growth in the near term, as described above. For the long term, other options will need to be examined by EID to assure that capacity for ultimate needs is available. In accordance with EID and PUC regulations, developers will be required to enter into the necessary service agreement(s) with EID. Included in these agreements will be developer installation of conveyance facilities in accordance with EID requirements. Parcels not already within the District will require annexation.

GAS AND ELECTRICITY

The study area is within the service territory of Pacific Gas and Electric (PG&E) Company for both gas and electric service. PG&E has indicated that gas service can be extended to the site from distribution mains currently being extended through El Dorado Hills. No unusual problems are anticipated in extending gas service to the number of homes anticipated to be built in the area. Line extension agreements with developers in accordance with PUC regulations will be required.

PG&E estimates the average gas consumption for new homes in the region will be 150 to 175 therms per month.

The local source of electric energy from PG&E would likely be substations currently located at Clarksville or Shingle Springs. PG&E anticipates no unusual problems in extending electric service to the number of homes anticipated to be built in the area. Line extension agreements with developers in accordance with PUC regulations will be required.

PG&E estimates the average electric use for the homes to be built within the study area to be between 800 to 1200 kilowatt hours per month. This figure is for homes which use natural gas for heating. For homes without gas, electric use would likely average close to 1800 kilowatt hours per month.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Assuming an average use of 175 therms per month, the 2,901 homes anticipated at full buildout of the study area would use 507,675 therms per average month.

Assuming an average monthly use of 1,000 kilowatt hours of electric power per home, the 2,901 homes would utilize an average of 2,901,000 kilowatt hours per month. If any homes do not use natural gas, but rely upon electric power for heating, their electric use could be double the average.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **K03**.

MITIGATION MEASURES

K03 Developers will need to enter into the required agreements with PG&E for the provision of services to the project in accordance with PUC regulations. Developers will need to be responsible for relocation or rearrangement of the existing gas and/or electric facilities required to facilitate each development.

TELEPHONE

Telephone service is presently provided to the Bass Lake Road vicinity by Pacific Bell Telephone Company in accordance with PUC rules and regulations. Two exchanges presently serve the area, the El Dorado Hills exchange and the Shingle Springs exchange. The boundary between these exchanges is located along several section lines immediately west of Bass Lake Road. Technically, Pacific Bell can serve the area from either exchange. Individual projects may straddle the boundary, requiring adjustments in accordance with the specifics of development. The El Dorado Hills exchange (933 prefix) is within the Sacramento local calling area and thus preferred by many residents. Any exchange boundary move requires PUC approval.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] No unusual problems are anticipated with the provision of telephone service to the project site.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **K04**.

MITIGATION MEASURES

K04 In accordance with Pacific Bell and PUC regulations, developers will be responsible for any relocation costs of existing overhead telephone facilities, and will provide the underground supporting structure to each lot.

PUBLIC SERVICES

Public services which will be required to serve the project include police, fire protection, solid waste disposal, and schools.

POLICE SERVICES

The El Dorado County Sheriff's Department provides law enforcement services to the study area. At present, the Department maintains a staff of 260 persons, of which 142 are sworn officers. This level of service equates to an approximate ratio of 1 officer per 1,200 residents in the County. A spokesperson for the Department has indicated that ideally they would like to improve service to a ratio of 1.0 to 1.2 officers per 1,000 population.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Assuming 3.3 persons per household, and the objective to provide at least 1.0 officer per 1,000 residents, development of the study area will generate the need for approximately 10 new officers.

This impact will be mitigated to a less than significant level through implementation of mitigation measure K05.

MITIGATION MEASURES

K05 The Sheriff's Department is funded through the County General Fund. The County Board of Supervisors has the responsibility to allocate funds to maintain an adequate level of service.

FIRE PROTECTION

Implementation of the project will change the character of the site from an undeveloped rural area to an urban residential setting. This will produce an increase in the number and frequency of fire and emergency medical calls to the site.

The El Dorado Hills Fire Department has jurisdiction over the Bass Lake Road area. This Fire Department is financially supported by development fees plus property taxes collected by the El Dorado Hills County Water District, and hence does not draw from the County General Fund.

Two stations are currently operated by the El Dorado Hills Fire Department. The main station is located at 990 Lassen Lane in El Dorado Hills. This station employs six firefighters, three engineers, three captains, and three administrators. Three additional staff are expected to be added in April, 1991. Equipment includes two pumper trucks, one brush squad vehicle, and one water tender. The second station, located at 2180 Francisco Drive in Lake Forest, is currently staffed by volunteers, but will have two paid staff in April, 1991. Equipment includes one pumper truck and one brush squad vehicle.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] According to Fire Department officials, construction of a new fire station will be required to serve development in the Bass Lake Road study area. The most likely location for a new station will be on the west side of Bass Lake Road. The new station will require at least one acre of land, which could be donated by developers or purchased. The estimated cost of the structure and improvements ranges from $400,000 to $500,000. Equipment costs will include at least one pumper truck ($200,000) and one water tender ($120,000). Annual operating expenses for six staff will be approximately $300,000.

Without designation of a new station site, this impact cannot be mitigated to a less than significant level. Capital costs to cover construction of a new station and equipment will be provided by mitigation measure K06.

MITIGATION MEASURES

K06 The El Dorado Hills Fire Department is supported by development fees and is a self-supporting enterprise fund with a property tax base. For this reason, there will be no net impact on the County General Fund. The development fee of $308 per dwelling unit will generate $893,508 which should cover capital costs for structure and equipment for the needed new station.

PLANNING CONSIDERATIONS

- On the study area level, a suitable fire station site must be identified prior to approval of any major subdivisions at locations being considered for the new fire station.

SOLID WASTE

Solid waste collection in the Bass Lake Road area is provided by the El Dorado Disposal Service, Inc. and is disposed of at the County owned Union Mine Disposal Site. The landfill is operated, under contract to the County by El Dorado Landfill Inc.

The Union Mine Disposal Site is ±217 acres in size and has been in use for approximately 20 years. At present, roughly 33 acres of the property are being used for waste disposal, and this area only has sufficient capacity to last two more years. El Dorado County is in the process of obtaining the necessary environmental clearance and permits to allow expansion of waste disposal operation. The proposed expansion, once approved, is planned to provide 22.6 years of additional of capacity. A long term plan for use of the remainder of the ±217 acre disposal site is presently being formulated.

El Dorado Disposal Service estimates each single family home generates an average of two 32 gallon cans of solid waste per week, or approximately 60 gallons per household per week.

As owner of the Union Mine Disposal Site, El Dorado County maintains responsibility for the costs of environmental compliance, including the cost of closure and expansion. The County Board of Supervisors has directed that a long range study of solid waste disposal options be made. This study will include an analysis of means to finance added costs.

Regionally, the generation of solid waste has become an issue of major concern. As public awareness of the environmental cost of solid disposal continues to increase, the advantages of recycling are becoming more attractive. Increasing numbers of individuals, businesses, and municipalities are implementing measures to divert recyclable material from the waste stream. According to the Environmental Management Department, El Dorado County will shortly be requesting proposals for the siting and construction of a Materials Recovery Facility (MRF). The target date for the opening of this facility is January 1, 1994.. With this facility, all haulers will be directed to the MRF not the

disposal site. Additionally, it is anticipated that the County will be preparing ordinances requiring both homeowner and commercial source separation. Commercial and industrial complexes may also have to be designed to facilitate and accommodate mandated curbside pickup of recyclables.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Assuming each home generates an average of ±60 gallons of solid waste per week, the 2,901 homes within the study area will generate 174,060 gallons of solid waste per week.

This impact will be mitigated to a less than significant level through implementation of mitigation measure **K07**.

MITIGATION MEASURES

K07 El Dorado Disposal service has indicated that pickup services can be extended to the new development in the study area. The El Dorado County Environmental Management Department has indicated that, although capacity at the Union Mine Disposal Site is presently limited to two years, actions are underway to provide expansion of the disposal site as needed.

SCHOOLS

The Bass Lake study area is located within the service areas of the Buckeye Union School District and the El Dorado Unified High School District.

The Buckeye Union School District operates four elementary schools: Blue Oaks (K-5), William Brooks (K-6), Camerado Springs

(6-8), and Buckeye (K-6). As of October 1990, the District was serving 2,842 students, i.e. 112% of the 2,536 student capacity. The District has implemented a Dual-Track Year-Round Education (YRE) schedule at Blue Oak Elementary School, and plans to implement a Multi-Track YRE schedule at the new Silva Valley School.

The District currently uses 21 temporary classrooms. Application has been filed with the State of California for a new gymnasium and staff room at Camerado Middle School and a new library at William Brooks. A new elementary facility, Silva Valley School, with capacity for 639 additional students is scheduled for completion in 1992. Applications for two new schools have been submitted to the State: a middle school (grades 6-8) in El Dorado Hills, and a K-6 school to be located in Shingle Springs. Aside from possible capacity in the new 7-8 facility, proposed school facilities are being designed to accommodate proposed development outside of the Bass Lake area. Consequently, additional school facilities will be required to serve students from homes within the study area. The School District will require a new elementary school site(s) in the Bass Lake study area.

The El Dorado Unified High School District (EDUHSD) operates three comprehensive high schools serving 4,153 students. This enrollment is 413 students (11%) in excess of the 3,740 student capacity of those facilities. In addition to comprehensive high school facilities, the District operates Diamond Continuation High School, Independence Continuation High School, Independent Learning Center, and Ponderosa Alternative Education. There are 311 students enrolled in these alternative education programs which have a combined capacity of 346 students. Growth projections indicate that the District should anticipate an relatively heavy annual growth of 500-600 students per year through 1996, with a more moderate rate of growth continuing beyond that period.

Based on the State's criteria, the High School District is eligible for State funding to construct two new high schools in the next seven years. Capacity for expansion of facilities at existing sites is projected to be exhausted by 1993. The EDUHSD

has acquired a site for a new school near the intersection of Bass Lake Road and Green Valley Road, and has indicated that acquisition of a high school site in the Bass Lake study area will not be necessary.

Until recently, local school Districts relied heavily on the availability of State financing for construction of new facilities. Unfortunately, the State program is expected to continue to be oversubscribed for at least the next 4-5 years, and the likelihood of acquiring needed funding from that source is slim. However, school districts which can generate 50% of their projected costs from local sources can apply for the remaining 50% through a 50/50 matching program operated by the State. Chances of funding from this source are typically very good.

Presently, the Buckeye Union School District and the El Dorado Union High School District collect Stirling fees. These fees, which are assessed on new homes, provide $1.09 per square foot of new home to the elementary school district, and $0.49 per square foot of new home to the high school district. Both districts have indicated that these fees, by themselves, are insufficient to mitigate the need for new facilities generated by continuing development. In order to ensure adequate financing for new facilities, a joint proposal has been formulated between school districts in El Dorado County and the development community. This proposal is intended to generate sufficient local funding to enable the Districts to qualify for the 50/50 matching program. Under the currently proposed agreement, a development fee of $7,198 will be assessed on each new home. This fee has been calculated to provide:

- 50% of the cost of permanent facilities for K-12 ($4,871)
- 100% of the costs to provide interim facilities (portables) pending State Funding ($1,809)
- 100% of the costs to make interest payments on interim facilities pending construction of the permanent facilities ($519)

As of the writing of this EIR, the conceptual agreement outlining the proposed fee has been presented to the El Dorado County Board of Supervisors for consideration. The Board has directed County Counsel to prepare implementing documents, following which the proposed fee will be scheduled for public hearings prior to action by the Board. Since no significant opposition to the proposed fee structure has been raised by the County or the development community, it is anticipated that adoption of the fee will occur prior to preparation of the Final EIR for this project.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] As calculated in Table K2, the project is predicted to generate approximately 1,131 elementary students, 348 middle school students, and 667 high school students. These students will generate a need for approximately 2.3 elementary schools, 46% of a middle school, and 44% of a high school.

TABLE K2
PROJECT GENERATED SCHOOL IMPACTS

Facility	Yield Rate[1]	Students Generated[2]	School Size	Schools Needed
Elementary School (K-6)	0.39	1,131	500	2.26
Middle School (7-8)	0.12	348	750	0.46
High School (9-12)	0.23	667	1,500	0.44

[1] Yield Rate is students per single family home
[2] Students Generated is calculated assuming 2,901 homes

As a matter of policy, the School District does not consider development impacts to be resolved to a less than significant level until needed sites and financing mechanisms are identified. Implementation of mitigation measure K08 is sufficient to provide the necessary financing mechanism, but a potential school site(s) has not been identified. Although no unusual difficulties are anticipated with selection of a school site, this impact cannot be considered mitigated to a less than significant level until the needed site(s) are identified.

MITIGATION MEASURES

K08

Consistent with the pending fee ordinance, each new home in the study area will be assessed a school fee of $7,198. The fee will be paid at the time of issuance of building permit. As outlined in the ordinance, Stirling fees are included in the fee, and dwelling units which pay the new fee will receive credit for their Stirling fee obligation.

PLANNING CONSIDERATIONS

- Because of the stringent site requirements imposed by the State, potential sites for new school facilities should be identified as soon as possible, providing adequate time for site review and evaluation prior to residential development of alternative sites which could be used if the State were to reject the primary selection.

FISCAL ANALYSIS

The Analytics Company was retained by R. C. Fuller Associates to analyze the fiscal impacts associated with anticipated development within the study area. The full text of the Analytics report is appended to this EIR. This section of the EIR is a summary of the appended fiscal study, with sections of the text taken directly from the appended analysis. Those individuals requiring additional detailed information are referred to the appended study.

El Dorado County will collect revenues from and incur expenses for providing services to new residents in the Bass Lake Road area. The objective of the fiscal analysis is to estimate the net fiscal impact associated with the proposed development assuming no change in service levels, complete buildout under the proposed design, and assuming constant dollars based on the County of El Dorado 1990-1991 Proposed Budget and Work Plan.

TABLE L1
BASS LAKE ROAD PROJECT CHARACTERISTICS[a]

Project Characteristics	Higher Density Alternative	Proposed Project
Project acres	1,223	1,223
Number of homes	3,814	2,901
Square feet per home	1,900	2,500
Value of structure	$190,000	$250,000
Value of land	$ 60,000	$100,000
Total value (land + structure)	$250,000	$350,000
Predicted population increase[b]	12,586	9,573

[a] Average home sizes and values are provided by the developers.
[b] Based on Planning Department estimate of 3.3 persons per home.

METHODOLOGY

Because this fiscal analysis addresses future conditions, it is impossible to precisely predict the fiscal conditions that will occur. In order to estimate future conditions, it is necessary to make certain assumptions:

1. The analysis seeks to isolate the fiscal differences that would exist with and without the proposed development once all construction is complete and occupied. Temporary impacts due to construction activity, for example, are ignored.

2. Cost and revenue projections are based on the County's 1990/91 projections. Monetary amounts are expressed in current dollars.

3. Constant levels of service provided by the County are assumed. For example, if street maintenance is currently at a low level due to lack of funds the same level of service is assumed once the development is completed. Similarly, no degradation of service is allowed in the analysis.

4. The "average revenue/cost approach" is used nearly all line-item revenue and cost predictions. This approach involves extending the current per capita revenue or operating cost by the estimated increase in population. In some instances, however, specific estimates pertaining to the project area are used because averaging is inappropriate.

5. This analysis focuses on the General Fund, plus the Fire Protection District. Enterprise funds are self-supporting and therefore fiscally solvent.

6. The 1990-1991 Proposed Budget contains a detailed breakdown of sources and uses of funds which facilitated this analysis. Dedication of expected revenue from each source to each expenditure category is explicit, thereby enabling calculation of the net fiscal impact on each category (see appended report). For example, revenue collected from the Transportation Tax is dedicated to the County Transportation Commission and the Auditor/Controller's office. In some cases all of the revenue from a source is dedicated, and in others it is not. If not fully dedicated, a "surplus" (undedicated revenues) goes to the General Fund (Table L2).

7. Some expenditure categories are expected to be fully covered by dedicated revenues, leaving zero predicted net expenditures from the General Fund. These expenditure categories are:

Communications	Coroner
County Clerk	Alcohol/Substance Abuse

District Attorney--Family Support
Agriculture Commissioner
County Transport Administration
Recorder
Public Health Lab
Farm/Home Advisor
Historical Museum

8. Most expenditure categories, although partially covered by dedicated revenues, must be covered by some amount of undedicated revenues from the General Fund. These expenditure categories and the "uncovered" amounts needed from the General Fund are listed in Table L2 as "Net Expenditures From General Fund."

The predicted annual fiscal impact generated by development of the Bass Lake study area is presented in Table L2.

As indicated in Table L2, the fiscal analysis indicates that implementation of the Proposed Project is predicted to generate an annual fiscal surplus of $1,093,800. Implementation of the Higher Density Alternative would generate a surplus of $276,200. Some specific issues and departments are discussed below.

Sheriff

The El Dorado County Sheriff's Department employed 238 permanent staff in 1989-90, and an increase to 249 was recommended for 1990-91. Of the 249, 74 would be sworn patrol officers based in Placerville and 27 would be sworn patrol officers based in South Lake Tahoe (County of El Dorado 1990-1991 Proposed Budget and Work Plan,, p. 114). According to the Sheriff's Department, the desired staffing ratio is one sworn officer per 800 population, but the current county ratio is one per 1,200. Standard methodology for predicting fiscal impacts is to assume continuation of the status quo, but in this case we compromise with an expected achievable ratio of one sworn officer per 1,000 population. At this rate Bass Lake Road development would require a new substation and from 9.5 to 12.5 new officers. The average annual cost of supporting a patrolman in the Placerville region is $68,800 including benefits, staff support and equipment, hence the estimated cost of providing protection to the Bass Lake Road Development would range from $658,600 to $865,900. The capital cost of a substation has not been estimated.

TABLE L2
PREDICTED ANNUAL FISCAL IMPACT ON THE EL DORADO COUNTY GENERAL FUND DUE TO THE BASS LAKE ROAD DEVELOPMENT

Undedicated Revenues Accruing to General Fund	Alternative Project	Proposed Project
Property Tax		
Residential/Commercial	$2,889,700	$3,082,300
Unsecured	69,500	52,900
Prior Secured	3,000	2,200
Prior Unsecured	2,900	2,200
Current Supplemental	63,000	47,900
Penalties	22,200	16,900
Sales Tax	449,000	341,400
State Subventions		
Cigarette Tax	8,200	6,300
Off Highway Motor Vehicle Lic.	200	100
State Stabilization	5,200	3,900
Motor Vehicle In-Lieu	547,200	416,200
Trailer in-lieu	11,000	8,400
Homeowner Property Tax Relief	66,200	50,400
Total (Undedicated) Revenue	4,137,300	4,031,100
Net Expenditures From General Fund		
Board of Supervisors	64,400	49,000
Administration	46,200	35,200
Fleet Management	25,000	19,000
Auditor-Controller	120,500	91,700
Assessor	234,200	178,200
Treasurer/Tax Collector	53,200	40,500
County Counsel	77,100	58,600
Personnel	52,800	40,200
Elections	55,300	42,100
Surveyor	21,800	16,600
Engineer	20,300	15,400
Information Services	145,000	110,300
Data Processing	213,300	162,200
General Services	184,000	140,000
Superior Court	57,700	43,900
Municipal Court	23,300	17,700
Trials	50,700	38,600
District Attorney	172,200	131,000
Public Defender	76,400	58,100
Sheriff	865,900	658,600

(continued)

TABLE L2 (Continued)
PREDICTED ANNUAL FISCAL IMPACT ON THE EL DORADO COUNTY GENERAL FUND DUE TO THE BASS LAKE ROAD DEVELOPMENT

Net Expenditures From General Fund (Continued)	Alternative Project	Proposed Project
Central Dispatch	27,500	20,900
Jail	505,300	384,400
Probation	149,500	113,700
Juvenile Hall	56,700	43,100
Emergency Services	5,900	4,500
Animal Control	43,900	33,400
Public Ways	24,700	18,800
Health Department	12,200	9,300
Mental Health Services	43,200	32,900
Family Planning	1,200	900
Child Health	2,100	1,600
Emergency Medical Services	2,900	2,200
Institutional/Indigent Medical	44,600	34,000
CA Children's Services	16,600	12,600
Welfare Administration	113,500	86,400
Food Stamp Employ.	700	500
Categorical Aids	77,500	58,900
Public Assistance	41,300	31,400
Public Guardian	25,500	19,400
Pub.Assistance: Senior Services	26,200	20,000
County Library	80,800	61,500
Total Net Expenditures	**3,861,100**	**2,937,300**
ANNUAL NET REVENUE	**276,200**	**1,093,800**

Source: Analytics Company

Fire Protection

The El Dorado Hills Fire Department would have jurisdiction over the Bass Lake Road area. This Fire Department is financially supported by development fees plus property taxes collected by the El Dorado Hills County Water District, and hence does not draw from the County General Fund.

Two stations are currently operated by the El Dorado Hills Fire Department. The main station is located at 990 Lassen Lane in El Dorado Hills. This station employs six firefighters, three

engineers, three captains, and three administrators. Three additional staff are expected to be added in April, 1991. Equipment includes two pumper trucks, one brush squad vehicle, and one water tender. The second station, located at 2180 Francisco Drive in El Dorado Hills, is currently staffed by volunteers, but will have two paid staff in April, 1991. Equipment includes one pumper truck and one brush squad vehicle.

According to Fire Department officials, another fire station will be required for the proposed Bass Lake Road development--most likely on the north side of Interstate 50. The station will require at least one acre of land, which could be donated by the developers or purchased (cost unknown). The estimated cost of the structure and improvements ranges from $400,000 to $500,000. Equipment costs will include at least one pumper truck ($200,000) and one water tender ($120,000). Annual operating expenses for six staff will be approximately $300,000.

Since the El Dorado Hills Fire Department is supported by development fees and a self-supporting enterprise fund with a property tax base, there will be no net impact on the County General Fund. The development fee of $308 per dwelling unit will generate from $893,508 to $1,175,020, which should cover the capital costs of structure and equipment (Table L3). No significant adverse fiscal impacts are therefore anticipated.

Schools

The school districts that will accommodate students from the Bass Lake Road development are the Buckeye School District (elementary) and the El Dorado Unified High School District.

The Buckeye Union School District operates four elementary schools: Blue Oaks (K-5), William Brooks (K-6), Camerado Springs (6-8), and Buckeye (K-6). During the 1989-90 school year the district had average daily attendance of 2,574, and revenue per ADA was $2,721.

At present the District occupies 21 temporary classrooms. Application has been filed with the State for a new gymnasium and staff room at Camerado Middle School and a library at William Brooks. In addition, a new K-6 elementary school at El Dorado Hills is in Phase II of the procurement process. Applications for two new schools have been submitted: a middle school (grades 6-8) in El Dorado Hills, and a school in Shingle Springs (K-6).

The El Dorado Unified High School District operates three comprehensive high schools and two continuation high schools. All of the schools include grades 9 - 12. Average Daily Attendance in 1989-90 was 4,163, with a revenue limit of $3,387 per ADA. At present, 47 relocatable classrooms are in use.

The District plans to construct three new schools, one of which would be located near Bass Lake Road between 1995 and 1997. The other two schools would be constructed within the time ranges of 1993-95 and 1999-2000. Additionally, the District has applied to the State for funds to construct a fine arts facility and a library extension.

Using student yield rates per household provided by the school districts, the Buckeye District would need to accommodate 1,509 to 1,946 elementary students depending on housing density. The El Dorado Unified District would be required to accommodate 667 to 877 high school students. The number, location, and cost of new schools required to house these students is unspecified, hence no statement can be made at this time regarding the adequacy of current funding mechanisms. The current level of school impact fees would generate about $7.9 million for the Buckeye District and $3.5 million for the El Dorado District.

DEVELOPMENT FEES

The Bass Lake Road project would generate between $45.9 and $54.5 million in development fees, depending on dwelling unit density (Table L3). Development fees are intended to cover the County's actual costs, hence no net revenues (positive or negative) are expected to accrue to the County. At a minimum, the average fee

per household would range from $14,285 to $15,836, which is derived by dividing total developer fees by the planned number of dwelling units. These estimates are understated for the following reasons.

1. Some project characteristics and costs are unknown, such as the number of linear feet of water and sewer pipe.

2. Fees have been calculated on the assumption that this would be one project when in fact it is likely that the area will be developed under numerous projects. All "per project" fees listed in Table L3 will be charged for each project.

3. Fees tend to increase over time as the County's costs increase. By the time these projects get to the fee-paying stage, fee increases might occur. Similarly, the estimated home values might increase, thus increasing fees based on percentage of value.

Fees for park construction do not appear in the fee schedule because each project requires negotiation. According to El Dorado County ordinances, when a subdivision creates lots the Board of Supervisors may require the dedication of land, the payment of fees in lieu thereof, or a combination of both for park and recreational purposes as a condition of final map approval. Within the El Dorado Hills Community Service District (CSD), the amount of land required for dedication to park and recreational use is not to exceed five acres per one thousand residents. The Proposed Project would require up to 48 acres and the Alternative Project would require up to 65 acres.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[L] As described in the previous paragraphs, and shown in the tables, development of the study area will result in a net positive fiscal impact to El Dorado County.

No mitigation is required.

TABLE L3
ESTIMATED DEVELOPMENT FEES
FOR THE PROPOSED BASS LAKE ROAD DEVELOPMENT

Fees	Basis for Fee[a]	Alternative Project	Proposed Project
Planning Department			
Environmental Document			
a. Environ. assessment	Per project	256	256
b. Notice of preparation	Per project	1,856	1,856
c. EIR	Per project	actual cost	
Subdivisions			
a. Preliminary map	$352+$1/lot>50	4,116	3,203
b. Tentative map	$1,536+$1/lot>100	5,250	4,337
c. Final map	Per project	100	100
Surety Bond			
a. Administrative proc.	Per project	96	96
b. Release of security	Per project	128	128
LAFCO Fees	Per project	(c)	(c)
Transportation (Public Works)			
Plan Check Fee	$400 + $6/lot	23,284	17,806
Tentative Map	$300 + $2/lot	7,928	6,102
Final Subdivision map	Per project	50	50
Construction & Inspection Fee	Footnote (b)	7,274,372	7,280,272
Map Check Fee	Per project	50	50
Road Impact Fee	$1,785/unit	6,807,990	5,178,285
Landfill fee	$150/lot	572,100	435,150
El Dorado Irrigation District			
Plan check fee	$150 1st page + $75 add'l page	900	900
Line extension application fee	Per project	100	100

(Continued)

TABLE L3 (Continued)
ESTIMATED DEVELOPMENT FEES
FOR THE PROPOSED BASS LAKE ROAD DEVELOPMENT

Fees	Basis for Fee[a]	Alternative Project	Proposed Project
Inspection fee: water	$1.50/linear ft.	— unknown —	
sewer	$1.85/linear ft.	— unknown —	
Connection fee, water and sewer	$7,121/unit	27,159,494	20,658,021
El Dorado Hills Fire Department			
Fire impact fees	$308/unit	1,174,712	893,508
Schools			
Buckeye Union School District	$1.09/ft^2	7,898,794	7,905,225
El Dorado Union High School District	$0.49/ft^2	3,550,834	3,553,725
Total Development Fees		**54,482,410**	**45,939,170**
Minimum average fees/unit (Total development fees divided by number of units)		**14,285**	**15,836**

Source: Analytics Company

(a) Calculations assume that there is one project for development of the entire 1,200 acres, when in fact there will likely be numerous projects. Each defined project will incur all of the "per project" development fees, thus increasing the total amount of development fees over the amount predicted herein.

(b) $272 + 5% of first $100,000 of value + 2.5% of next $900,000 + 1% of value over $1 million. This fee is also listed by another name in the Planning Department: "Final Subdivision Map." The Planning Department collects a $100 filing fee; the Department of Transportation (Public Works) collects the amount based on construction value.

(c) LAFCO fees are indeterminable without more specific definition of the projects comprising the Bass Lake Road area.

VISUAL AND AESTHETIC RESOURCES

The visual and aesthetic environment of the study area site is typical of the low Sierra foothills of western El Dorado County. Elevations within the project boundaries range from a high of approximately 1469 feet in the east central section to a low of approximately 760 feet at the extreme southwestern corner.

The rolling hills of the site are punctuated by granite and granodiorite boulders that outcrop in clusters on many of the hillsides. Vegetation on the site consists of scattered stands of trees, particularly at the higher elevations. Major tree species include blue oak, valley oak, live oak, digger pine, and buckeye. Understory brush species include coffeeberry, poison oak, buckbrush, manzanita, yerba santa, and chamise. Annual grasses dominate the open hills. Grass species include foxtail, ripgut brome, soft chess, wild oats, and fescue. In disturbed areas, star thistle and other forbs are found. In and adjacent to the swales and intermittent drainages, wetland plants proliferate. These species include willows, rushes, sedges, and various grasses.

As is typical of such areas in the low Sierra foothills, the majority of growth occurs in the spring while the soils are saturated from the winter rainy season. Exceptions to this pattern are the riparian area associated with the Carson Creek, minor swales leading to Carson Creek and Deer Creek, and several seeps located at lower elevations on the site.

Visually, the riparian areas and the other minor wet areas tend to stay green throughout the year. The open grasslands undergo a marked annual cycle, exhibiting the peak of lush green growth in the late spring, turning to a dry yellow or brown by mid to late summer. The native oaks and digger pines on the property are relatively drought tolerant and maintain their waxy green colors throughout the summer when surrounding grasses change to yellow or brown.

The following photographs are representative of the various sections of the study area.

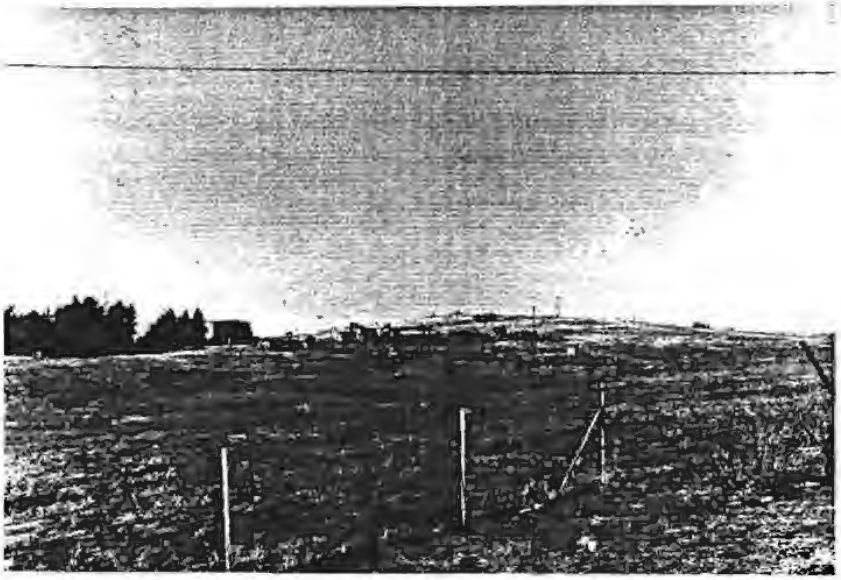
View M1 is taken from the north central portion of the site near the top of the hill, looking to the northwest. The rocky foreground is typical of much of the northwestern slope of the study site.

VIEW M1: LOOKING NORTHWEST FROM NORTH CENTER OF SITE

View M2 is looking uphill to the northeast from west of Bass Lake Road. The grassy area is typical of much of the southwestern slope of the site. Note the scattering of existing residences near the top of the hill.

VIEW M2: LOOKING NORTHEAST FROM WEST OF BASS LAKE ROAD

View M3 shows the view to the northwest from Bass Lake Road just north of Country Club Drive. This area is characterized by open, rolling hills, interspersed with clusters of trees at widely spaced intervals.



VIEW M3: LOOKING NORTHWEST FROM BASS LAKE ROAD NEAR COUNTRY CLUB DRIVE

The photograph in View M4 was taken on Saddleback Drive at the top of the ridge which trends north-south through the site. The mature oaks shown are typical of those forming a belt of trees extending virtually the length of the ridge.

VIEW M4: LOOKING NORTH ON SADDLEBACK DRIVE NEAR NORTH BOUNDARY OF SITE

View M5 provides an example of the rock outcrops which occur throughout the property. In this ridgetop setting, the outcrop is surrounded by mature oaks.

VIEW M5: TYPICAL RIDGETOP WOODED AREA WITH ROCK OUTCROP

The View M6 photograph was taken from a point to the southeast of the site near where Country Club Drive makes a turn to the northeast. This view clearly shows the extent of the tree cover along the ridge, much of it on the lee (east) side of the hilltop.

VIEW M6: LOOKING NORTHWEST FROM COUNTRY CLUB DRIVE SOUTHEAST OF SITE

DRAFT

SCH#90020375

ADMINISTRATIVE DRAFT

BASS LAKE ROAD STUDY AREA

PROGRAM ENVIRONMENTAL IMPACT REPORT

Prepared For
County of El Dorado

May 24, 1991

Prepared By
R. C. Fuller Associates
5908 Fair Oaks Boulevard
Carmichael, California 95608

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[S] The major visual impact which will occur as a consequence of development of the study area will be the complete change of character from the existing rural setting to that of an urban residential community, not unlike Cameron Park or El Dorado Hills. Contributing to this change will be removal of native trees and vegetation, the introduction of domestic lawns and landscape species, grading and "stair stepping" of the hillside to create level home sites, and the addition of roofs, pavement, metal, glass, painted surfaces, etc. to the visual environment. In most cases, the large native oak trees on the ridge will still define the horizon line in that direction, but depending upon vantage point, roofs will infringe upon the otherwise natural horizon line. At night the visual environment will be dominated by artificial lighting from homes.

This is an unavoidable impact associated with development, and although it cannot be mitigated to a less than significant level, some mitigation will be realized through implementation of mitigation measures **E01**, and **I01**.

MITIGATION MEASURES

E01 As discussed in the Hydrology section of this report, the **EL DORADO HILLS - SALMON FALLS AREA PLAN** specifies non building setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds. These resources are critical elements of the visual and aesthetic environment.

I01 As described in the Land Use section of this report, the **EL DORADO HILLS - SALMON FALLS AREA PLAN** requires that developments with the potential to remove large numbers of trees be

reviewed by qualified persons who can make recommendations for tree preservation. This mitigation will be enhanced by adoption of the proposed County tree ordinance. Regarding oaks, the ordinance defines protected trees and heritage trees and specifies conditions under which such trees can be removed. Protection of oaks is essential to maintaining visual/aesthetic values.

ARCHAEOLOGIC AND HISTORIC RESOURCES

The firm of Foothill Archaeological Services was retained by R.C. Fuller Associates to assess the archaeological and historical resources of the study site. The full text of the Foothill report is appended to this EIR. This section of the EIR is a summary of the appended archaeological and historical survey.

The Bass Lake study area falls within the region occupied by the hill Nisenan at the time of EuroAmerican contact. The term Nisenan ("of us" or "from our side") is applied to the southern Maidu Indians who made their home in the drainages of the American, Yuba and Bear Rivers, and the lower reaches of the Feather River. Nisenan political organization was based on "triblet" groups centered around group ownership and use of a territory. Formal food gathering quests were based on seasonal ripening and the intimate knowledge of resources near their villages. People did not depend on one crop, but gathered staples all year. Major Nisenan settlements were concentrated along the larger streams where village sites often occupied low hills with a southern exposure. While the food technology and tribal hierarchy are well established , place and village names are poorly known. Numerous archaeologic sites including villages, burial sites, bedrock mortars, midden deposits and artifact scatters have been recorded in the vicinity.

A complete record search covering the study area and the surrounding area was conducted for this EIR by the North Central Information Center of the California Archaeological Inventory. This record search disclosed no recorded cultural resources within the study area, although numerous sites, both historical and archaeological, have been recorded on surrounding properties. Within a half mile radius, are nine prehistoric sites and 22 historic sites or features.

An archaeological survey of the site was conducted during June of 1990 and January of 1991. Any evidence of prehistoric and historic activity was pursued during the survey. Two prehistoric and five historic sites were recorded as a result of this survey. The sites discovered are as follows:

Site 1. This site consists of a historic family cemetery located on hilltop north of Highway 50. The cemetery consists of seven burial sites, enclosed within a 14 by 15 meter fenced enclosure. The latest burial was in 1951. several of the burials are members of the Morrison family, who owned much of sections 5 and 6 in the late nineteenth century.

Site 2. This site is a single bedrock mortar pit on a low granite outcrop in Section 6. No midden or artifact deposits were located in this area.

Site 3. The site is a mining ditch in a heavily wooded segment of creek in Section 5. The ditch is shallow, unlined, and is associated with the remains of a rock dam which diverted water to it. No artifacts or historic materials were located. This ditch may have been associated with the Altdoerfer Ranch in the mid-nineteenth century.

Site 4. This is a long abandoned mining complex some 450 meters in length along a drainage swale in Section 6. Remains of ditches, dams, tailings, and a water line are still visible within the site.

Site 5. This site is a bedrock milling station with four mortar pits on the north bank of a swale. No midden or artifacts were located in the vicinity,

Site 6. The site consists of approximately 60 meters of dry laid stone wall, situated in the southern half of Section 6. The wall is typically three feet high and almost three feet wide at its base.

Site 7. This is an historic road segment buttressed by rock work along a steep bank in Section 5. Approximately 50 meters of this rock work is intact. This road may have been part of the Altdoerfer Ranch complex.

IMPACTS

As discussed in the Introduction, impacts are identified in this section as follows: [L] Less than significant, [S] Significant, or [M] Mitigated to less than significant.

[M] Implementation of the project carries the potential for disturbance of the historic cemetery (Site 1) located within the study site.

This impact will be mitigated to a less than significant level by implementation of mitigation measure NO1.

[M] Implementation of the project carries the potential for disturbance of the identified historic and prehistoric sites (Sites 2-5) which occur on the site. As stated in the appended archaeological report, these sites should be preserved if at all possible. If not, their recordation is deemed sufficient mitigation.

[M] Considering the sensitivity of the vicinity, it is possible that undiscovered sites of historical or archaeological significance could exist in the study area. Construction activities have the potential for disturbance of any such sites.

This impact will be mitigated to a less than significant level by implementation of mitigation measure NO2.

MITIGATION MEASURES

NO1 The historic cemetery (Site 1) should be preserved intact and in place. If relocation or disturbance of any kind is contemplated, specific legal requirements must be met. Such action would require research into the significance and specific history of the cemetery and its occupants. Grave relocation should be done in consultation with living relatives.

N02 Construction workers will be informed of the archaeologic history of the study area, and instructed as to the types of materials and/or artifacts which would be indicative of sensitive sites. If any presently unknown artifacts or sites are discovered during construction, all work in the immediate vicinity of the find should be halted until a qualified archaeologist has an opportunity to evaluate the find and recommend appropriate action.

Implementation of these mitigation measures will require the County to condition all projects approved within the study area in accordance with the mitigation measures contained in this report. The confidential section of the archaeological report will be on file at the El Dorado County Planning Division for use in providing environmental clearance for all projects proposed within the study area.

PLANNING CONSIDERATIONS

- The two prehistoric sites (Sites 2 and 5) are both isolated bedrock milling stations, typical of many in the vicinity. Their recordation is deemed adequate mitigation. The preferred mitigation, however, is preservation in their existing location and condition. If grading or site disturbance occurs, a knowledgeable person should be present to watch for buried archaeological deposits.

- The mining sites (Sites 3 and 4) represent physical traces of the site history. Their recordation is deemed adequate mitigation. The preferred mitigation, however, is preservation, which would likely occur if the drainage swales are preserved for greenbelt and wildlife habitat values.

- The stone wall (Site 6) and historic road segment (Site 7) should be preserved intact. Both could be left in place and incorporated into landscaping.

CUMULATIVE IMPACTS

Cumulative impacts are those impacts created by the combined effects of more than a single project. Even though the impacts associated with implementation of a single project may be less than significant, that impact when combined with impacts of other projects, could produce a significant impact. These impacts are discussed in the respective sections of the EIR, and are summarized and placed in a cumulative context in this section.

For the cumulative analysis, the following documents were consulted: the **EL DORADO HILLS - SALMON FALLS AREA PLAN** dated July 24, 1984; the **EL DORADO HILLS - SALMON FALLS AREA PLAN LAND USE MAP** updated March 3, 1990; the **EL DORADO HILLS - SALMON FALLS AREA PLAN ZONING MAP** updated March 3, 1990; the **EL DORADO HILLS SPECIFIC PLAN** dated July 18,1988; the **EL DORADO HILLS SPECIFIC PLAN FINAL ENVIRONMENTAL IMPACT REPORT** dated July 1988; and the **ALTERNATIVE CONCEPTS REPORT - EL DORADO COUNTY 2010 GENERAL PLAN** dated December 1990.

Consistent with the **ALTERNATIVE CONCEPTS REPORT**, this cumulative analysis examines the 20 year horizon, or growth to the year 2010. The report projects a County wide population increase of approximately 81,000 over the next 20 years (page 1). This is a steady increase of approximately 4000 persons per year. This 81,000 population will require approximately 29,450 additional residential dwelling units be developed by 2010.

In order to identify a cumulative impact area for this analysis, developing areas to the east, west, north, and south of the study site were identified. To the west, the **EL DORADO HILLS SPECIFIC PLAN** area was selected. As described in the **ALTERNATIVE CONCEPTS REPORT** (page 13) growth within this plan area is projected to total 6200 additional units by the year 2010. To the north and east, proposed projects expected by the El Dorado County Planning Division to build out by the year 2010 were identified. These projects are located on either side of Bass Lake Road, on either side of Green Valley Road, and west of Cambridge Road. Vacant land in these areas expected to build out by 2010 was also

identified by the Planning Division. Vacant land designated for single family use was tallied at three units per acre. Vacant land designated for multiple use was tallied at 15 units per acre. The total of these units is 3410. South of Highway 50, with access either from the Bass Lake/Marble Valley Road interchange or from the Cambridge/Flying C Road interchange, a total of 2197 units were identified. The total of all units identified in the designated cumulative area surrounding the Program EIR study area is 11,807. For purposes of this cumulative analysis, the 11,807 units added to the 2901 units within the Program EIR study area constitute the number of units projected to be added to the cumulative area by the year 2010. This total is 14,708. The 2901 total units assumed for full buildout of the Program EIR study area is roughly 20 percent of the total for the entire cumulative area.

In order to assess the effect of buildout of the Program EIR study area in the context of buildout of the cumulative area, the impacts of buildout of the Program EIR study area as described in the previous sections of this report were considered in the context of buildout of the cumulative impact area.

Project generated impacts in the subject areas of **vegetation, wildlife, air quality, land use, population and housing, traffic, water supply, and visual/aesthetic resources** were identified as significant impacts for which no full mitigation was identifiable. In each of these subject areas, a significant cumulative impact is suggested to already exist without buildout of the Program EIR study area. In no instances were any impacts of buildout of the Program EIR study area identified as the ultimate contribution which would turn a less than significant impact into a significant finding. The following paragraphs examine the anticipated impacts of buildout of the identified cumulative area. The areas examined are those areas in which a significant unmitigated cumulative impact is anticipated.

S VEGETATION & WILDLIFE

As described above, development similar to that anticipated within the Program EIR study area is expected to occur within the cumulative area. By the year 2010, the vast majority of the existing environment will be changed from the present rural condition to an urban condition. This residential land use will introduce domestic landscaping, homes, streets, and the relatively constant presence of people and domestic pets. Wildlife species which are not compatible with these uses will be permanently displaced from the study area. Species which are less sensitive to human environments will adapt to the new conditions and continue to occupy the area, displacing those now present. Even if designated areas are set aside for wildlife, the existence of residential use in the vicinity will unavoidably impact these areas. The introduction of domestic pets which prey upon wildlife, misuse of pesticides, herbicides, and fertilizers, and over-watering of native oak trees are unintentional impacts which adversely impact natural areas adjoining urban land use.

Cumulatively, the inherent incompatibility of residential land use with natural areas cannot be fully resolved. The loss of wildlife habitat is an unavoidable impact of urbanization which cannot be mitigated to a less than significant level.

S AIR QUALITY

Traffic generated within the cumulative area will contribute additional emissions, on both the local and regional levels. These emissions include carbon monoxide, hydrocarbons, and nitrogen oxides. The volume of ozone which will form as a consequence of these additional traffic emissions is assumed to be comparable to the predicted production of hydrocarbons. These emissions will exacerbate regional efforts to reduce carbon monoxide, particulate, and ozone levels, compounding the present nonattainment status for ozone. This is an unavoidable impact of urbanization which cannot be fully mitigated to a less than significant level.

S LAND USE

The predicted development of residential projects totaling an estimated 14,708 dwelling units by the year 2010 within the cumulative area will produce a substantial change in land use from the present low intensity rural residential and agricultural use to a more urban environment consistent with high density single family residential land use.

This thorough alteration of the existing land use is a significant unavoidable consequence of project implementation which cannot be fully mitigated.

S POPULATION & HOUSING

Utilizing the County Planning Division figure of 3.3 persons per dwelling unit, the 14,708 single family houses anticipated to develop in the cumulative area would, at full buildout, result in a population of approximately 48,536 persons. This increase in housing and population will result in significant and unavoidable impacts to vegetation and wildlife, air quality, traffic, water supply and visual/aesthetic resources. Because of the magnitude of these impacts, the population and housing impacts are also considered significant and unavoidable.

S SCHOOLS

All of the area School Districts are presently impacted, serving a greater number of students than their respective facilities are designed to accommodate. Although a new development fee is proposed, the Districts are still dependent upon matching funds from the State for the construction of new facilities. These funds are not guaranteed. Because the Districts are so seriously overcrowded, new growth is predicted to outpace construction of school facilities for some time. In the interim, overcrowding will continue to occur.

S TRAFFIC

The anticipated development of the cumulative area, added to traffic generated from general growth in the region, will contribute to the overall volume of traffic using Highway 50, local interchanges, local roadways and local intersections. Without improvements, virtually all local facilities will function at unacceptable Levels of Service. Even with mitigation, Highway 50 and most major interchanges and intersections are anticipated to function at unacceptable LOS. On the cumulative level, these impacts will be mitigated, but as mitigation for all anticipated impacts cannot be identified, the impacts of growth on future traffic levels must be categorized as significant and unavoidable.

S WATER SUPPLY

As described in the Water Supply section of this report, sufficient water to serve new development is not currently available. For this reason, a moratorium on new connections has been instituted. This moratorium will be lifted as soon as a firm supply is identified.

At the rate of 1,500 gallons of water per day per dwelling unit, the 14,708 homes identified within the cumulative area would require a total of 22,062,000 gallons of water per day. Sources, storage, and conveyance facilities to provide this volume, coupled with that needed by the remainder of the District, have not been identified at this time.

Therefore, the impacts of development in the cumulative area must be categorized as significant and unavoidable.

S VISUAL & AESTHETIC RESOURCES

As with the Program EIR study site, development of the cumulative area will result in the replacement of the existing rural

residential/agricultural environment with that of a typical urban residential environment. The major visual and aesthetic impact which will occur will be the addition of homes, roadways, other structures, and associated facilities. This land use change will permanently alter the present rural largely undeveloped character of the site. The resulting visual and aesthetic environment will be substantially changed from the present situation.

This visual and aesthetic change is an unavoidable impact which cannot be mitigated to a less than significant level.

ALTERNATIVES TO THE PROPOSED ACTION

This section examines potential alternatives to the anticipated use of the project site. These alternatives include:

- **THE NO PROJECT ALTERNATIVE**
- **HIGHER DENSITY RESIDENTIAL**
- **GENERAL PLAN**
- **LOWER DENSITY RESIDENTIAL**
- **ALTERNATIVE LOCATION FOR SIMILAR PROJECT**

The potential environmental effects which could result from each of these alternatives are discussed by subject in the following paragraphs and summarized in Table P1.

THE NO PROJECT ALTERNATIVE

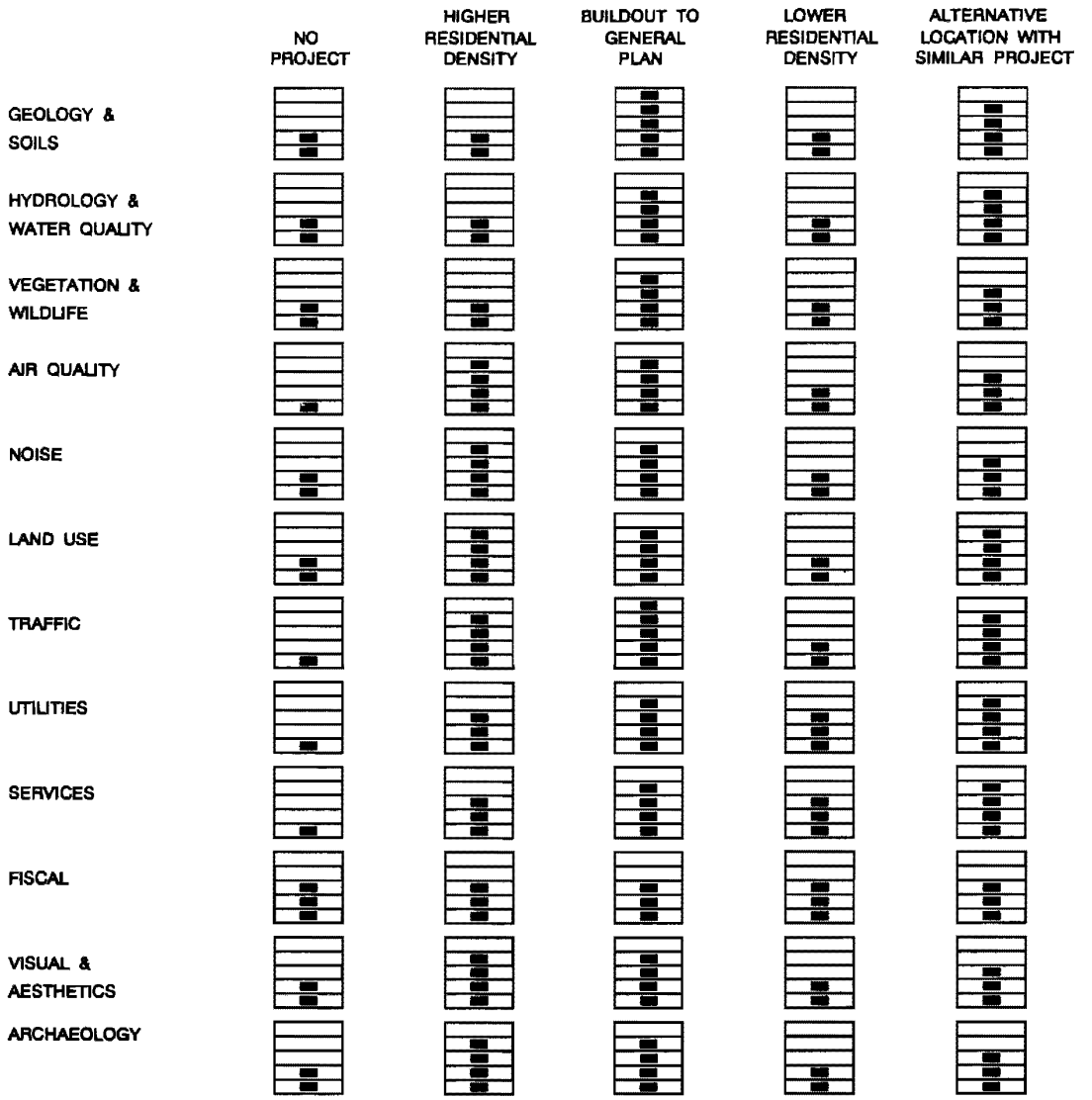
The **NO PROJECT ALTERNATIVE** assumes that development of the study area would occur consistent with existing zoning which allows one dwelling unit per ten acres. Calculation of this alternative is presented in Column (5) of Table C1. As shown, the **NO PROJECT ALTERNATIVE** would allow development of 122 dwelling units in the Bass Lake Road study area.

Implementation of this alternative would eliminate or lessen most of the project related impacts discussed in the previous sections of this report, and consequently, represents an environmentally superior alternative to the **PROPOSED PROJECT.** However, considering the greater densities that are allowed by the current General Plan land use designation, the current demand for housing in the region, the value of the property and its location in a developing area, the **NO PROJECT ALTERNATIVE** does not appear to be a realistic long term alternative. The anticipated effects of this alternative as compared to the proposed project are described below.

Geology & Soils. As a result of the large reduction in the number of homes, this alternative would reduce the amount of grading required for project implementation.

Hydrology. As a consequence of less developed area, this alternative would reduce potential impacts to runoff and water quality.

TABLE P1
COMPARISON OF THE POTENTIAL MAGNITUDE OF ALTERNATIVE IMPACTS TO THOSE OF THE PROPOSED PROJECT



Vegetation and Wildlife. The continuance of ten acre lots would preserve a greater amount of the existing vegetation and wildlife habitat and result in the introduction of less landscaping.

Air Quality. The smaller number of homes would result in a reduction in the volume of project related air pollutants by approximately 90 percent.

Noise. With an overall density on one home for each ten acres, the site would retain a rural large lot setting. The lower number of homes would generate substantially less traffic and therefore less traffic related noise. The larger lots with homes farther apart would provide fewer sensitive receptors to noise generated. The more rural land use would generate noises such as those produced by the operation of farm equipment and the keeping of livestock. This type of noise would be absent from the more urban noises generated by higher density residential use.

Land Use. Maintenance of densities consistent with existing zoning would retain a rural large lot setting and tend to retain the existing land use character to a substantially greater degree than would development in accordance with the higher densities called for in the General Plan.

Traffic. The fewer number of homes would reduce project generated peak hour trips from 2901 to 122. This level of trip generation would not require any of the roadway improvements which would result from buildout of the program EIR area.

Utilities. The fewer number of homes would reduce the overall level of utilities and services required. However, the number of new homes available to share the cost of infrastructure improvements would also be low.

Fiscal. Assuming net per home costs and revenue similar to the proposed project, the no project alternative would generate a net annual surplus to the County of $78,443. The proposed project would generate a net surplus of $1,860,700. Therefore the no project alternative would provide $1,782,257 less annual income to the County than would the project.

Services. The reduced number of homes would still require the extension of services, but the level of services required would be reduced by the fewer homes to be served.

Visual and Aesthetic Resources. With an overall density of one dwelling per each ten acres, the site would retain its rural aesthetic character, rather than the more typical suburban character which would result from the proposed project.

Archaeology. Although the project is not anticipated to adversely affect known archaeological or historic sites (with mitigation as proposed), this alternative could more easily avoid impacts on the identified resources and would lessen the potential impact on any as yet undiscovered resources.

HIGHER RESIDENTIAL DENSITY ALTERNATIVE

The **HIGHER DENSITY ALTERNATIVE** is presented as column (6) in Table C1. This alternative was calculated assuming construction of the nine subdivisions for which the Planning Division has received preliminary information and/or formal applications, and development of the remainder of the study area to the maximum density permitted by the existing General Plan, i.e. the densities shown in column (2) of Table C1. Development to this level would result in 3,815 homes in the study area.

Development of the property to a higher density residential use would produce greater impacts to both the natural and cultural systems, than would the proposed project. Overall, this alternative would not be environmentally superior to the proposed project. Described below, by category, are the anticipated effects of this alternative as compared to the proposed project.

Geology & Soils. As a result of the increase in the number of homes, this alternative would increase the amount of grading and soil disturbance required for project implementation.

Hydrology. As a consequence of the greater amount of impervious surface which would be constructed, this alternative would

increase potential impacts to runoff volumes and water quality.

Vegetation and Wildlife. The higher density would likely require the removal of a greater number of trees, and would result in more disturbance of natural areas on the site.

Air Quality. The greater number of homes would increase local generation of project related air pollutants, both from vehicular traffic and from wood stoves. At the densities discussed, the increase in pollutant generation would be roughly proportional to the increase in the number of homes.

Noise. The noise impacts generated per home would be comparable to those of the proposed project. Because of the greater number of homes and residents, traffic and other noises generated would be slightly higher. The higher noise levels would require a higher level of mitigation for identified sensitive receptors.

Land Use. This alternative would result in a change in land use from the current rural character to a more typical urban land use. This would differ from the project in that the higher density alternative would likely result in somewhat smaller homes with less open space either on each lot or in common areas.

Traffic. The greater number of homes would increase the number of project generated trips. Additional roadway improvements beyond those necessary to meet project requirements would be needed to mitigate the additional traffic generated. The following improvements would be required in addition to those needed for the project as described in the traffic section of this report:

INTERSECTION	ADDITIONAL IMPROVEMENTS
Bass Lake Road/Hollow Oak	Additional NB Left Turn & SB Right Turn Lane
Bass Lake Road/Stone Hill	Additional NB Left Turn & SB Right Turn Lane
Bass Lake Road/Country Club	This Intersection Would Operate @ LOS D With Maximum Feasible Improvements (LOS C With Project)
Bass Lake Road/WB 50 Ramps	Additional NB Receiving Lane For WB Ramp Right Turn Movement
Bass Lake Road/EB 50 Ramps	No Additional Improvements LOS Moves From C to D

Utilities. The greater number of homes would increase the demand

on local utilities. However, the number of homes concentrated in the area would reduce the cost of infrastructure on a per home basis.

Services. The larger number of homes would require additional services, but would provide some economies of scale, due to the larger number of homes and higher population in the area. The Buckeye Union School District would be required to accommodate an estimated 1984 elementary students, compared to the 1509 estimated to be generated from the proposed project. The El Dorado Unified High School District would be required to accommodate an estimated 725 students compared to the 551 students estimated for the project.

Fiscal. This alternative would generate a net surplus to the County of $2,067,100. The proposed project would generate a net surplus of $1,860,700. Therefore this higher density alternative would provide $206,400 additional annual income to the County.

Visual and Aesthetic Resources. The greater number of homes on smaller lots would create a more typical suburban visual environment with somewhat less open space than is anticipated to result from the proposed project.

Archaeology. Although the project is not anticipated to adversely affect known archaeological or historic sites (with mitigation as proposed), because of the higher densities, this alternative would pose a slightly greater threat to impacts on the identified resources and would slightly increase the potential for impacts on any as yet undiscovered resources.

GENERAL PLAN

Buildout to the maximum density permitted by the existing land use designations identified in the **General Plan** is calculated in Table C1, column (2), titled **GENERAL PLAN.** The first subcolumn under this scenario identifies the current **General Plan** land use designation. As shown, all of the study area is designated either "F" or "G". Properties labelled "F" by the **General Plan** are designated as **HIGH DENSITY RESIDENTIAL**, and development to a density of five units per acre is pallowed. Properties in proximity to Carson Creek are designated "G", indicating that **MEDIUM DENSITY RESIDENTIAL** use is allowed. **MEDIUM DENSITY RESIDENTIAL** use is restricted to a minimum lot size of one acre. Since the General Plan land use designations do not always conform to individual parcel boundaries, some parcels include area in "F" and area in "G". In such instances, an estimate of the

number of acres in each designation has been made. The second subcolumn identifies the density (units/acre) permitted by the respective General Plan land use designations. In instances where a single parcel is covered by more than one land use designation, an average density has been calculated. The third subcolumn identifies the maximum number of units, and is calculated using the General Plan density and the parcel acreage. As indicated in the last row of Table C1, the total number of dwellings which could be developed in the study area under the existing General Plan designations is 5,603 homes.

Development of the property to this maximum density residential use would produce greater impacts to both the natural and cultural systems, than would the proposed project or the previously discussed higher density alternative. This alternative, although having the potential to lower the cost per unit of development, could be incompatible with the lower density residential land uses in the vicinity. Overall, this alternative would not be environmentally superior to the proposed project. Described below, by category, are the anticipated effects of this alternative as compared to the proposed project.

Geology & Soils. The increase in the maximum number of homes possible with this alternative (approximately double the project density) would significantly increase the amount of grading required for project implementation.

Hydrology. As a consequence of greater impervious surface, this alternative would increase potential impacts to runoff and water quality, as compared to the project or to the previously examined higher density alternative.

Vegetation and Wildlife. The smaller lots would likely require the removal of a greater number of trees, and would provide less undisturbed area on the site as compared to the project or to the previously examined higher density alternative.

Air Quality. The greater number of homes would increase project generated pollutants, both from vehicular traffic and wood stoves. The increase in pollutant generation would be generally proportional to the increase in number of homes. This alternative, with the greatest number of homes of the considered alternatives, would produce the largest volume of pollutants.

Noise. The noise impacts generated per home would be comparable to those of the proposed project. Because of the substantial

increase in the number of homes and residents, traffic and other suburban noises generated would be significantly higher. The higher noise levels would require a higher level of mitigation for identified sensitive receptors.

Land Use. This alternative would result in a land use intensity of almost double that of the proposed project. This would require smaller homes with less open space and fewer amenities, but they would likely be affordable to a greater range of buyers. Given the topographic limitations presented by portions of the site, this density may not be achievable as traditional lot and block subdivisions. Any change to multiple family or Planned Development land use designations would require a General Plan Amendment.

Traffic. The greater number of homes would substantially increase the number of motor vehicle trips on local roadways. As stated in the appended traffic report, the 5603 dwelling unit alternative would cause a 47% increase in traffic volumes at local intersections as compared to the 3815 unit alternative.

Utilities. The greater number of homes would increase the demand on local utilities. However, the number of homes concentrated in the area would reduce the cost of infrastructure on a per home basis.

Services. The larger number of homes would require additional services, but would provide some economies of scale, due to the larger number of homes and higher population in the area. The Buckeye Union School District would be required to accommodate an estimated 2914 elementary students, an increase of 1405 over the 1509 estimated to be generated from the proposed project. The El Dorado Unified High School District would be required to accommodate an estimated 1065 students compared to the 551 students estimated for the project.

Fiscal. This alternative would generate a net annual revenue surplus to the County of $2,428,564. The proposed project would generate a net surplus of $1,860,700. Therefore this higher density alternative would provide $567,864 in additional annual income to the County.

Visual and Aesthetic Resources. The greater number of homes on smaller lots would create a more urban visual environment with significantly less open space than is anticipated to result from the proposed project.

Archaeology. Although the project is not anticipated to adversely affect known archaeological or historic sites (with mitigation as proposed), the higher density alternative would pose more of a threat to impacts on the identified resources and would increase the potential for impacts on any as yet undiscovered resources.

LOWER RESIDENTIAL DENSITY

As described throughout this report, the proposed project is described as those developments which are known to the County at their proposed densities plus the remainder assumed to build out at three units per acre. The known applications presently comprise 1403 units on 638 acres with an average density of 2.2 units per acre. As a theoretical basis for developing a lower density alternative, the General Plan land use designations as shown in Table C1, page C5 of this report were shifted one category lower for the remainder of the study area. Under this scenario, those properties assumed to build out at three units per acre under the project alternative would build out at one unit per acre and those assumed to build out at one unit per acre would build out at one unit per five acres. Under these assumptions, the total maximum number of units for the study area would be 1885, a reduction of 1016 below the proposed project.

Development of the remaining properties to a lower density residential land use would not be expected to change the type of impacts which would occur, but would result in proportionately less severe impacts in virtually all subject areas. Consequently, this alternative would be environmentally superior to the proposed project. Described below, by category, are the anticipated effects of this alternative as compared to the proposed project.

Geology & Soils. Due to the reduction in the number of homes, this alternative would reduce the amount of grading required for project implementation.

Hydrology. As a consequence of less impervious area and fewer residents, this alternative would reduce potential impacts to runoff and water quality.

Vegetation and Wildlife. The larger lots would likely require the removal of fewer trees, and would provide a greater amount of undisturbed area on the site.

Air Quality. The fewer number of homes would reduce project generated pollutants. The reduction would be roughly proportional to the reduction in number of lots.

Noise. Even though the overall density would be less than that of the proposed project, the noise impacts generated per home would be comparable. Due to the decrease in the number of homes and residents, traffic and other suburban noises generated would be lower. The lower noise levels would reduce the type and level of mitigation for identified sensitive receptors.

Land Use. The lowering of densities for the remaining properties would contribute to the retention of a more rural large lot setting and tend to retain the existing land use character to a greater degree than would development as anticipated in the proposed project.

Traffic. The fewer number of homes would reduce project generated peak hour trips from 2901 to 1885, a reduction of approximately 35%. This level of trip generation would substantially reduce or postpone the need for many of the roadway improvements which would be required to mitigate buildout of the study area.

Utilities. The fewer number of homes would reduce the overall level of utilities and services required. However, the number of new homes available to share the cost of infrastructure improvements would also be lower.

Services. The reduced number of homes would still require the extension of services, but the level of services required would be reduced by the fewer homes to be served. The Buckeye Union School District would be required to accommodate an estimated 981 elementary students, a decrease of 528 below the 1509 estimated to be generated from the proposed project. The El Dorado Unified High School District would be required to accommodate an estimated 368 students compared to the 551 students estimated for the project.

Fiscal. This alternative would generate an estimated net annual revenue surplus to the County of $1,209,038. The proposed project would generate a net surplus of $1,860,700. Therefore this lower density alternative would provide $651,662 less in annual income to the County.

Visual and Aesthetic Resources. With an overall density reduction of approximately 35% as compared to the proposed project, the site could better retain more of its rural aesthetic character, although the change from the present situation would still be substantial. The fact that the lowest densities, as postulated by this theoretical alternative, would be in the properties west of Bass Lake Road and adjacent to Highway 50 would serve to enhance the visual perception of lower density for the entire site.

Archaeology. Although the project is not anticipated to adversely affect known archaeological or historic sites (with mitigation as proposed), this alternative would more easily allow measures to lessen impacts on the identified resources to be

implemented and would serve to reduce potential impacts on any as yet undiscovered resources.

ALTERNATIVE LOCATION FOR SIMILAR PROJECT

In order to assess potential alternative sites for the development envisioned for the study area, applicable County planning documents were examined. These documents included: the **EL DORADO HILLS - SALMON FALLS AREA PLAN** dated July 24, 1984; the **EL DORADO HILLS - SALMON FALLS AREA PLAN LAND USE MAP** updated March 3, 1990; the **EL DORADO HILLS - SALMON FALLS AREA PLAN ZONING MAP** updated March 3, 1990; and the **ALTERNATIVE CONCEPTS REPORT - EL DORADO COUNTY 2010 GENERAL PLAN** dated December 1990.

The **ALTERNATIVE CONCEPTS REPORT** examines three County-wide land use development strategies: 1) The Incremental Growth concept, which envisions urban expansion into those areas which can be most effectively served by existing infrastructure; 2) The Village concept which concentrates new development into planned areas designed to facilitate public transit and local employment opportunities; and 3) the Specific Development proposals concept, which concentrates on 13 major proposed development projects throughout the County.

The development facilitated by the Program EIR is most consistent with concept 1, as it is located adjacent to an expanding residential area into which urban infrastructure is being extended. The land use proposed within the study area is consistent with the current General Plan land use designations for the site for high and medium density residential, although the current zoning is Estate Residential or Agricultural, both of which allow a maximum of one dwelling unit for each ten acres. At present, the majority of the site is subdivided into ten acre parcels. Many of the proposed subdivisions within the study area are being facilitated by consolidation of these ten acre parcels.

The most likely area within the general project area in which the approximately 1223 acres of single family development could be alternately located is immediately south of the project site on

the other side of Highway 50. This region shares many of the attributes of the study area and is served by the same Highway 50 interchange. Within portions of Sections 7, 8, 17, and 18 of Township 9N, Range 9E and Sections 12 and 13 of Township 9N, Range 8E immediately south of Highway 50 the landholding patterns are similar to those of the project area. Several of the parcels are roughly ten acres in size as are the majority of the project parcels.

The present zoning of this area is RE 10, allowing one dwelling unit for each 10 acres, similar to the project site. The General Plan designation for those sections closest to Highway 50, however, is Low Density Residential (H), which allows one dwelling on a minimum parcel size of five acres. The General Plan designation for the properties one section removed from Highway 50 is High Density Residential (F) which allows five dwelling units per acre. This latter designation is the same as that for almost all of the study area.

In addition to access from the Highway 50 interchange (Marble Valley Road), this area could also gain access from Latrobe Road to the west and southwest. There is presently no through roadway access between these two points, as is the case with Bass Lake Road which connects Highway 50 with Green Valley Road to the north.

Topographically, this area exhibits steeper slopes and a more variegated landscape which would pose more constraints to development than would development of the study area.

Alternative 1 of the **ALTERNATIVE CONCEPTS REPORT** shows this area remaining in Rural Residential land use while it shows the study are as Medium/High Density Residential. Alternative 3, however, of the **ALTERNATIVE CONCEPTS REPORT** which focuses on specific large landholdings, shows much of this property as Medium/High Density Residential.

In summary, this area is potentially suitable for similar development to that of the study area. Disadvantages which detract from this suitability include more difficult topography,

its location farther from existing utilities and services, more difficult access, and the need for a General Plan amendment to allow such development on the sections adjacent to Highway 50.

Similar development to that proposed or anticipated on the study area site on the identified alternative location would produce generally equivalent or greater environmental impacts than would the proposed project. Overall, this alternative would not be environmentally superior to the proposed project. Described below, by category, are the anticipated effects of this alternative as compared to the proposed project.

Geology & Soils. Because of the steeper slopes and more variegated landscape, development of similar projects at this alternative location would likely require a greater amount of grading than would be required for implementation of similar projects within the study site.

Hydrology. The similar amount of impervious surface produced by a development at this alternative site would produce similar runoff volumes. The steeper slopes, however, would potentially increase erosion impacts.

Vegetation and Wildlife. Development of a similar project at this alternative site would produce generally equivalent impacts to existing vegetation and wildlife habitat.

Air Quality. The same number of homes located in the same section of the County would generate about the same pollutants.

Noise. A similar number of homes with equivalent types and level of mitigation would produce a nearly identical noise environment.

Land Use. Land use changes from comparable development on the alternative site would generally produce equivalent impacts.

Traffic. An analogous production of trips on the alternate site would likely impact the Marble Valley Road/Bass Lake Road intersection with Highway 50 somewhat more heavily than would the proposed project. This is due primarily to the added distribution of project related traffic afforded by Green Valley Road, which provides an alternative route both east and west for project related destinations.

Utilities. Although the number of new homes served would be essentially equal, the cost of infrastructure improvements would be somewhat higher, due to the need to extend lines greater distances from presently served areas.

Services. The level of services required would be little changed from the proposed project. Due to the site's greater distance

from already established services, costs of extending services are anticipated to be somewhat higher.

Fiscal. This alternative would generate revenues and costs essentially equal to the proposed project.

Visual and Aesthetic Resources. Due to the greater topographic variation on the alternate site, visual and aesthetic alterations due to development may be somewhat more extensive. With appropriate mitigation, however, the ultimate impact is unlikely to be dissimilar to that of the proposed project.

Archaeology. Although site specific archaeological or historic data are not known, it is likely that the application of suitable mitigation would serve to reduce potential impacts in a manner similar to those proposed for the project.

GROWTH INDUCING IMPACTS

Development as anticipated within the study area will constitute a significant component of growth within western El Dorado County. The Bass Lake area is located on the fringe of the Sacramento metropolitan region, in an area which has exhibited unprecedented growth in recent years. Most of this growth has been residential in nature, with fast growing outlying communities becoming commuter communities to the larger Sacramento commercial and industrial center.

Development of the study area as described in the previous sections of this report is consistent with the pattern described above. Further, it will be similar to that existing or proposed in adjacent areas, especially in El Dorado Hills to the west and Cameron Park to the east. Development within the study area could be described as "infill" in that it is contiguous to surrounding developed or developing areas, that services have been or are being extended to the area, and that its growth represents a logical extension of established growth patterns in the region. Development of the site does not, therefore, constitute "leapfrog" or premature development.

Implementation of the project will contribute to economic and population growth within El Dorado and Sacramento Counties. Specifically, it will provide homes for an estimated 9,573 people in western El Dorado County. This will contribute to local population growth. These additional residents will pay taxes, as well as increase the demand for both public and private services. This growth, combined with other anticipated development in the area, will further increase the demand for services, requiring expansion of present facilities, and could induce additional development on surrounding lands in the project area.

Residents will create a demand for "everyday" services, such as groceries, retail stores, service stations, medical offices, etc. Under the existing land use plan, residents will have to travel to Cameron Park or El Dorado Hills to obtain such services. Development of the study area will inevitably result in requests for rezoning of parcels to accommodate such uses.

THE RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

The cumulative and long term effect of the proposed project will be to introduce a typical urban residential environment into an area which is currently rural residential. This change will involve a substantial alteration of both the natural and the cultural environment of the site and area. The resulting impacts and potential mitigation measures are discussed at length in the various sections of this Program EIR. The implementation of the mitigation measures described remains the major means available to assure the maintenance and enhancement of long term productivity for the site and surrounding affected area.

ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The major irreversible change which will result from the proposed project will be the long term commitment of the resources of the property to the proposed uses. Off site irreversible changes will also result. These changes are described in detail in the appropriate sections and components of this Program EIR, and are summarized in Table B1 of this document. The most notable irreversible environmental changes will include those typically associated with continued urban development. Changes to the existing vegetation and wildlife communities within the study area, the introduction of additional pollutants into the environment, additional traffic volumes, and the growth inducing impacts for additional development constitute the major irreversible impacts associated with development of the specific plan area. These irreversible impacts are largely unavoidable and will continue to occur regionally whether or not the study area is developed as described herein.

PERSONS AND ORGANIZATIONS CONSULTED

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