COUNTY OF EL DORADO DEVELOPMENT SERVICES
PLANNING COMMISSION
STAFF REPORT

Agenda of: December 13, 2012

Item No.: 12

Staff: Tom Dougherty

REZONE/TENTATIVE MAP

FILE NUMBER: Z11-0007/TM11-1504/Wilson Estates

APPLICANTS: Ann Wilson, Lisa Vogelsang, Catherine Ryan, and Julie Ryan

AGENT/ENGINEER: CTA Engineering and Surveying

REQUEST: The proposed project consists of the following requests:

1. Rezone the 28.18-acre parcel from One-Acre Residential (R1A) to One-Family Residential (R1);

2. Tentative Subdivision Map with phasing plan to create 49 single-family residential lots ranging in size from 10,141 square feet to 62,449 square feet, two frontage landscape lots (Lot A-14,233 square feet, and Lot B-13,426 square feet), one 54,855 square foot lot (Lot C) for open space, landscaping, drainage, and retaining walls, one 0.65-acre public roadway lot (Lot F), and two gates at the project entrances to Roads B1 and D; and

3. A Design Waiver is requested to allow the utilization of road-side ditches and asphaltic concrete (AC) dikes in lieu of curbs and gutters.

LOCATION: North side of Green Valley Road, approximately 3,000 feet east of the intersection with Silva Valley Road, in the El Dorado Hills area, Supervisorial District 1. (Exhibit A)

APNs: 126-070-22, -23, -30 (Exhibit B)

ACREAGE: 28.18 acres

GENERAL PLAN: High Density Residential (HDR) (Exhibit C-1)

ZONING: One-Acre Residential (R1A) (Exhibit D)

ENVIRONMENTAL DOCUMENT: Mitigated Negative Declaration

RECOMMENDATION: Staff recommends that the Planning Commission forward a recommendation to the Board of Supervisors to take the following actions:

1. Adopt the Mitigated Negative Declaration based on the Initial Study prepared by staff;

2. Adopt the Mitigation Monitoring Program in accordance with CEQA Guidelines, Section 15074(d), as incorporated in the Conditions of Approval and Mitigation Measures in Attachment 1;

3. Approve Rezone Z11-0007 based on the Findings in Attachment 2;

4. Conditionally approve Tentative Map TM11-1504 subject to the Conditions of Approval in Attachment 1, based on the Findings in Attachment 2; and

5. Approve the request for a Design Waiver to allow the utilization of road-side ditches and asphaltic concrete (AC) dikes in lieu of curbs and gutters.

PROJECT INFORMATION

Project Description:

Rezone: Request to rezone the project parcels from One-Acre Residential (R1A) to One-Family Residential (R1);

Tentative Subdivision Map: Tentative Subdivision Map to create 49 residential lots ranging in size from 10,141 sq. ft. to 62,449 sq. ft. (the lot sizes are listed in Exhibit F, Tentative Map Lot Size Table), two frontage landscape lots, and one lot for open space, landscaping, drainage, and retaining walls, and two gates at the project entrances to Roads B1 and D;

Design Waiver: Design Waiver to allow the utilization of road-side ditches and asphaltic concrete (AC) dikes in lieu of curbs and gutters; and

Additionally, the project proposes to construct the following fences/walls:

a. A six-foot tall masonry sound wall within Lot C and along the west boundary of Lot 38, and a portion of the east boundary of Lot 23;
b. A six-foot tall ornamental iron (tubular metal) fence and three-rail PVC fence within Lots A, and B; and
c. A six-foot tall solid wood fence along the western boundary of Lots 1, 2 and 39-41, and southern boundary of Lots 43-46 and 1.

The project includes a preliminary landscape plan to buffer views of both fences/walls as well as the outside-in views into the project area (Exhibit M).

The applicant noted on the submitted Tentative Map that they want the option available for the phasing of the final map (s), however, they are currently proposing to record it all at once.

Site Description: The 28.18-acre parcel varies in elevation from 720 to 860 feet above sea level. The highest point is in the northeastern portion of the parcel which slopes moderately from that area to the west. The majority of the parcel is grassland with approximately 2.90 acres of the 28.18 being covered with oak canopy-the majority of which are single, mature specimens. Dutch Ravine flows intermittently through the eastern portion of the parcel from north to south and exits under Green Valley Road through a culvert. It is bounded by existing roads on the north and south sides.

Background: The original project proposal had been scheduled to be heard by the Planning Commission on January 26, 2012 but was continued off-calendar to address the changes necessitated by the State Appeals Court decision relating to the Oak Woodlands Management Plan. Subsequent to that continuation, the project was completely revised to reduce the number of lots to 49, create a new lot layout in response to area residents concerns, eliminate the Planned Development request, revised sewer and water plan, grading plan, oak tree canopy plan, and the elimination of all the original design waiver requests. This staff report and the attached Mitigated Negative Declaration and Initial Study have been completely re-written to reflect the significant changes to the proposed project.

The prior land use designation of Medium Density Residential was established by Resolution 373-89 in December of 1989. During the update to the General Plan in the early 1990s, the Board of Supervisors directed staff to incorporate requested land use changes with pending projects into the draft. The HDR land use designation became applicable for the subject parcels when the 1996 General Plan was adopted.

Adjacent Land Uses:

	Zoning	General Plan	Land Use/Improvements
Site	R1A	HDR	Residential/Vacant
North	RE-5	LDR	Residential/Single family residence
South	R1A/PA-20/RE-5	MDR	Residential/Single family residences
East	RE-5	LDR	Residential/Single family residence
West	R1A	MDR	Residential/Single family residences on approximately one-acre parcels, and the 11-acre LDS Church site.

Discussion: Exhibits A and B illustrate that the general area consists of five-acre and larger sized parcels. The parcels adjoining to the north and east of the subject parcels are designated

low-density residential. The parcels adjoining to the south (across Green Valley Road), and west are designated medium-density residential which allows one to five–acre parcels.

The parcels to the north and east are zoned Estate Residential Five-Acre (RE-5). The 113.1-acre parcel just to the north of Malcolm Dixon Road from the project parcels, has an approved 19-lot Tentative Subdivision Map (Diamante Estates, Z06-0027, TM06-1421 and S08-0028), approved by the Board of Supervisors on October 27, 2009. One of those lots is two-acres in size and the remaining 18 are greater than five acres in size. At the time of this staff report, that Final Map has not been submitted. Exhibit C-2 shows that the subject project parcels are located within the El Dorado Hills Community Region Planning Concept Area, and that the Diamante Estates project parcel is located within a Rural Region Planning Concept Area.

STAFF ANALYSIS

The General Plan designates the subject site as High-Density Residential (HDR). **Policy 2.2.1.2** states the HDR designation identifies those areas suitable for intensive single-family residential development at densities from one to five dwelling units per acre. The project proposes 49 single-family residential lots ranging in size from 10,141 sq. ft. to 62,449 square feet. Those 49 lots for the 28.18 total acres, a density of to 1.7 units per acre which conforms to the General Plan land use designation. The project has been reviewed in accordance with the General Plan policies and it has been determined that the project, as conditioned and mitigated, would be consistent with all applicable policies of the General Plan.

Project Issues: Discussion items for this project include access and circulation, Design Waiver request, fire safety, grading and drainage, homeowner's association, noise and proposed sound wall, oak canopy, open space, parks, and the proposed rezone.

Access and Circulation: The project would be accessed from one encroachment onto Malcolm Dixon Road, a County-maintained roadway, and one encroachment onto a new connection roadway ("Road F") between Green Valley Road and Malcolm Dixon Road. The El Dorado Hills Fire Department determined that parking would not be allowed on the interior Roads B1, D, E, and F.

The Traffic Impact Analysis (TIA) dated March 3, 2011 and Supplemental TIA dated May 3, 2012 were approved by DOT. The Supplemental study estimated the project would generate 540 total new trips, with 44 new trips occurring during the AM peak-hour, and 55 new trips occurring during the PM peak-hour. The traffic studies' recommendations have been incorporated into the proposed DOT conditions of approval, included in Attachment 1.

Multi-Project Area of Benefit: In order to address cumulative traffic impacts, upon the applicant's request, the County will form and implement, at the applicant's expense, a public improvement financing district for funding or reimbursement of the costs of off-site public improvements to be constructed as identified in Exhibit K entitled Malcolm Dixon Area Traffic Circulation Plan. The applicant would prepare and submit for County's approval and adoption a proposed Area of Benefit and supporting Engineers Estimate and Report for the purpose of financing and reimbursement of required off-site land acquisitions, widening and construction of

public improvements as may be appropriate. The proposed Area of Benefit would include but not be limited to parcels APN: 110-020-12, 126-100-18, 19, 23, & 24 and 126-070-22, 23 & 30. This area of benefit, including this project, along with the following approved tentative maps: a. La Canada Tentative Map TM06-1421 (47 lots, 10/27/09); b. Alto LLC Tentative Map TM06-1408 (23 lots, 5/5/09); c. Grande Amis-Chartraw-Malcolm Dixon Road Estates Tentative Map TM05-1401 (8 lots, 6/15/10); and d. Diamante Tentative Map TM06-1421 (19 lots, 10/27/09). The Area of Benefit Engineer's Report would be prepared and submitted and the proposed public financing district formed prior to the filing of the Final Map. For development projects within the proposed public financing district Area of Benefit, County would require consent by the land owner to the public financing district and participation in the funding or reimbursement and/or construction of the off-site public improvements for Malcolm Dixon Area Traffic Circulation Plan on a pro rata share of residential lots or equivalent share basis as a condition of approval. For development projects which may derive benefit from the public improvements to be constructed as part of the Malcolm Dixon Area Traffic Circulation Plan, County would require participation in the funding and reimbursement and/or construction of the off-site public improvements for Malcolm Dixon Area Traffic Circulation Plan on a pro rata share of residential lots or equivalent share basis as a condition of project approval.

Area of Benefit Improvements: The Area of Benefit Improvements are required of all projects included in the Area of Benefit. This project's proportional share and financial responsibility for these improvements would be determined by the Engineer's Report. These improvements would be required to be completed to the satisfaction of DOT prior to filing of the final map. An Area of Benefit condition has been established that will result in widening of Malcolm Dixon Road, realignment of the two curves on Malcolm Dixon Road and the connection to Green Valley Road through the Wilson property. The projects within the Area of Benefit will share the cost of all of the improvements. The first project will be required to build all of the improvements and then be reimbursed by the subsequent projects their fair share of the costs. Public funds will not be utilized for the improvements.

DOT's recommended conditions incorporate the same Area of Benefit conditions to the approved tentative maps listed above. At the time of this staff report, no Final Maps have been submitted for any of the approved Tentative Maps. These map locations are shown on the Malcolm Dixon Area Traffic Circulation Plan area map, included as Exhibit K. The DOT recommended condition are included in Attachment 1.

Policy 6.2.3.2 directs that the applicant demonstrate that adequate access exists, or can be provided, to ensure that emergency vehicles can access the site and private vehicles can evacuate the area. As conditioned, neither DOT nor the Fire Department has any outstanding concerns with the emergency ingress/egress capabilities of the project.

Traffic impacts are discussed in more detail in the project Initial Study-Environmental Checklist, Transportation/Traffic Section 16. DOT has included conditions of approval in Attachment 1 to address the direct and cumulative impacts traffic impacts. The Traffic Impact Analysis (TIA) dated March 3, 2011 and Supplemental TIA dated May 3, 2012 are provided as an attachment to Exhibit U, Mitigated Negative Declaration and Initial Study.

Gates: The encroachments from the "New Connection" Road F to Road B1, and Malcolm Dixon Road to Road D are proposed to enter the subdivision through gated entrances. The Fire Department has reviewed the gate proposals and has conditioned the project that the gates comply with their Gate Standard B-002. The Fire Department would inspect the gates for compliance prior to final approval of that building permit. DOT also reviewed the gate proposal and did not have any outstanding concerns as conditioned.

Design Waiver Request: One Design Waiver has been requested to allow variation from the requirements of the El Dorado County Design Improvement Standards Manual (DISM) to allow the utilization of road-side ditches and asphaltic concrete (AC) dikes in lieu of curbs and gutters. DOT and the Fire Department have reviewed the request and did not have objections. The project parcel is surrounded by existing roadways that were built with A.C. Dikes and over-side drains and the Design Improvement Standards Manual (DISM) 101B Standard Plan, Note 10 makes allowances if the project is connecting to existing A.C. facilities.

Fire Safety and Water Supply: There is an existing domestic water line in Green Valley Road. With the installation of a looped system through the project, sufficient water supply will be provided to meet the domestic needs and fire flow for the project as required by **Policy 5.2.1.2** (adequate quantity and quality of water for all uses), and **Policy 5.7.1.1** (adequate emergency water supply, storage, conveyance facilities, and access for fire protection).

The project has a Fire Safe Plan approved by Cal Fire and the El Dorado Hills Fire Department dated September 2, 2011. In addition, the Fire Department has recommended other conditions of approval for the project to meet Fire Safe standards. The project has been conditioned to meet the requirements of the Department and to require the establishment of either a Community Services District, Lighting and Landscape District, or a Zone of Benefit/Homeowner's Association having recorded CC&Rs to ensure the ongoing maintenance of the open space lots.

Grading and Drainage: Pad grading is not proposed as part of the subdivision except as noted on the Preliminary Grading and Drainage Plan, and Tree Preservation Plan dated May 2012 (Exhibit H-1) for lots 38 to 42. Grading of these lots will be done as part of the subdivision improvements for roads, and infrastructure. The project would be required to install interceptor drains to avoid cross-lot drainage issues, to obtain off-site easements when applicable, and to use slope rounding grading techniques to avoid the stair-step effect. The majority of the grading and drainage improvements associated with the proposed subdivision appear to be those associated with the required infrastructure improvements, which includes the roadways to access this site. The Preliminary Grading, Drainage Plan is included as Exhibit H-1. The plan proposed for the spanning of the creek from Road F to proposed Lots 47-49 is included as Exhibit H-2. DOT has reviewed the preliminary plan maps, as well as the Revised Drainage Report dated July 2012, and has recommended conditions of approval for grading and drainage which are included in Attachment 1. The revised Drainage Report Wilson Estates, dated July 2012 is provided as an attachment to Exhibit U, Mitigated Negative Declaration and Initial Study.

Homeowner's Association: A Homeowner's Association (HOA) would need to be established for the purposes of implementing the Fire Safe Plan, maintenance of the fences, retaining and sound walls, open space lots, landscaping lots, the two entrance gates, the shared roads, and all

drainage facilities within the subdivision. Covenants, Conditions and Restrictions (CC&Rs) would be reviewed by the County with the filing of the final map to insure they include those provisions. The conditions requiring an HOA with specific CC&Rs for inclusion, are included in Attachment 1.

Noise and Proposed Sound Wall: **Policy 6.5.1.3** states that noise mitigation measures are required to achieve the standards of Tables 6-1 and 6-2. **Policy 6.5.1.8** states that new development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1.

The applicants submitted an Environmental Noise Assessment, dated May 3, 2012 (Exhibit U, Attachment 14) which analyzed the noise scenario in the context of the project proposal. That Assessment found that future Green Valley Road traffic noise levels at the outdoor activity areas (backyards) of the Wilson Estates project site are expected to exceed the exterior El Dorado County traffic noise level standard. As a means of achieving compliance with the exterior standard, a six-foot high noise barrier was recommended at the locations depicted in Exhibit N. As a result, Green Valley Road traffic noise exposure would be expected to be less than 60 dB Ldn. The Assessment found that the barriers should be constructed of concrete or masonry block, or precast concrete. Wood was not recommended due to eventual warping and shrinking of materials which results in openings and cracks which compromise the barrier longevity. The applicant has included a masonry sound wall in the project proposal.

The sound wall and other fencing proposed will be buffered by landscaping. The preliminary landscape plan is included as Exhibit M. The aesthetic impacts are discussed in more detail in the Aesthetics section of the Mitigated Negative Declaration and Initial Study. A recommended mitigation measure has been included in Attachment 1 to assure the masonry sound wall has vertical shielding by landscape plants.

Oak Tree Canopy: **Policy 7.4.4.4** establishes the native oak tree canopy retention and replacement standards. The project proposes to utilize custom lot grading at the individual building permit stages for each lot and therefore, the majority of the existing intermittently-dispersed, single mature oak trees would have the ability to be preserved by a future lot owner.

As shown in the Preliminary Grading, Drainage, and Tree Preservation Plan map, provided as Exhibit H-1, the project area has 2.90 acres of the total 28.18 project acres covered in oak canopy which is ten percent of the project area. General Plan Policy 7.4.4.4, Option A, would therefore require the retention of 90 percent of the oak tree canopy for the project area.

The General Plan allows 10 percent of the 2.90 acres to be removed (up to 0.29 acres) and to be mitigated at a 1 to 1 ratio. The project would remove approximately 0.20 acres of oak tree canopy for road and lot development which is less than what is allowed to be removed. The applicant has demonstrated in the Preliminary Landscape Plan dated January 6, 2012, that the project can provide 1 to 1 replacement plantings onsite within Lot C. That planting is required to be carried out in compliance with the .Interim Interpretive Guidelines for El Dorado County

General Plan Policy 7.4.4.4 (Option A). The project is conditioned that the final landscape/oak tree planting plan be reviewed and approved by Planning Services prior to issuance of any grading or building permit for the masonry wall/Lot C area. As conditioned, the project would be compliant with Policy 7.4.4.4, Option A.

Open Space: The 1.26-acre Lot C is proposed for open space, landscape, drainage, retaining walls, and the sound wall. Lots A and B are proposed as frontage landscape lots and comprise a total of 14,223 and 13, 425 square feet respectively. The ongoing maintenance of those lots would be the responsibility of the future HOA or a Landscape and Lighting Assessment District (LLAD). Planning has added a recommended condition that requires that the final design stay within the guidelines established by the 'Streetscape Master Plan' adopted by the El Dorado Hills Community Services District. Their comments are discussed further below in the agency comments section. Recommended conditions are included in Attachment 1.

Parks: The subdivision is subject to parkland dedication in-lieu fees based on values supplied by the Assessor's Office and calculated in accordance with Section 16.12.090 of the County Code. The fees would be paid at the time of the filing of a Final Map to the El Dorado Hills Community Services District area of the County. Additionally, the proposed new residences would be subject to the payment of Park Impact fees of the EDHCSD in place at the time of building permit issuance.

Rezone: **Policy 2.2.5.3** requires that the County shall evaluate future rezoning: (1) To be based on the General Plan's general direction as to minimum parcel size or maximum allowable density; and (2) To assess changes in conditions that would support a higher density or intensity zoning district. In addition to the issues discussed above, specific criteria considered the following:

1. **Water Supply:** **Policy 5.2.1.4** directs that subdivision approvals in Community Regions dependent on public water supply shall be subject to the availability of a permanent and reliable water supply. El Dorado Irrigation District has indicated in the submitted Facility Improvement Letter (FIL) dated September 14, 2012, that they have the ability to serve the project with existing mains as long as the applicant meets Fire Department standards for the development of a looped water system within the proposed development. The project requires 50 EDUs and the FIL reported that as of January 1, 2012, there were approximately 4,752 EDUs available in the El Dorado Hills Water Supply Region. This system would need to tie into the existing 12-inch water line in Green Valley Road. The project is required to construct all improvements to EID specifications and the El Dorado Hills Fire Department requires a minimum fire flow of 1,000 gallons per minute with a minimum residual pressure of 20 psi for a two-hour duration. The project would comply with this policy. The EID FIL is provided Exhibit U, Attachment 20.

2. **Wastewater Disposal:** Sewer facilities for the project would be provided by the El Dorado Irrigation District (EID), as required by Policy 5.1.2.1. The project would connect to an existing EID public wastewater treatment system and would be required to extend those facilities to handle the increased capacity. There is an existing sewer

facility located at the intersection of Malcolm Dixon and Allegheny Roads. The project proposes to set a connecting line in the existing Malcolm Dixon Road public utility easement from the project site to an existing manhole located within Uplands Drive. It is not proposed to require crossing the existing bridge located west of Uplands Drive. The EID FIL states that the project will require 49 EDUs of sewer service and that the existing sewer line has adequate capacity for the proposed project at this time, with extensions of facilities of adequate size.

3. **Wetlands/Intermittent Streams:** **Policy 7.3.3.4** directs that buffers and special setbacks of 50 feet from intermittent streams and wetlands. The Jurisdictional Delineation and Special Species Evaluation identified one 0.0748-acre seasonal wetland (Dutch Ravine) potentially subject to Clean Water Act jurisdiction. Dutch Ravine was determined to be an intermittent stream. It travels through the eastern portion of the project area from north to south. The Tentative Subdivision Map included a 50-foot non-building setback on each side of the stream, as measured from the Ordinary High Water Mark, and as required by General Plan Policy 7.3.3.4. The project proposes to cross the stream over a headwall with an open bottom drain, to proposed Lots 47-49 with a 24-foot road surface within a 50-foot wide easement (see Exhibit H-2). The U.S. Army Corps has confirmed with Planning Services that no Section 404 permit would be required. The County has not received confirmation from Fish and Game, or the California Water Quality Control Board, as to whether or not the project would be subject to their 1602 and 401 Permits. These agencies must review the final development plans of an approved project to make those final determinations. Implementation of Mitigation Measures (Conditions 4 to 6) is expected to protect riparian habitat values and quality of the drainage. The submitted wetland studies are included as Exhibit U, Attachments 10 and 11..

4. **Critical flora and fauna habitat areas:** The *Jurisdictional Delineation and Special Species Evaluation*, and *Special Status Plant Surveys* determined that although the proposed project site contains habitat to support some species of concern, no special-status species were found on the site. The primary existing vegetation/wildlife corridor along Dutch Ravine would be preserved by the required 50-foot non-building setback measured from the high water marks on both sides of the stream. Depending on the time of the year development occurs, there could be impacts to nesting raptors or other migratory birds. The project has included a mitigation measure designed to reduce those potential impacts. The referenced studies are included as Exhibit U, Attachments 8 and 9.

5. **Existing Land Use Pattern:** General Plan **Policy 2.2.5.21** directs that new development be compatible with the surrounding neighborhood. The project site is surrounded by land designated and utilized for medium-density residential uses on two sides and low-density uses on the other two. The project has proposed larger lot sizes (1.03 and 1.04 acres), as well as a permanent 50-foot non-building setback for the portion of the project abutting the residences along the west property line. The three lots proposed for along the east boundary range in size from 0.86 acre to 1.43 acres and include a 30-foot non-building setback. These larger sized parcels and setbacks were designed by the applicant to provide a more efficient transition from the MDR designated lots to the west and the

LDR designated lots to the east, in response to concerns from neighbors as well as the El Dorado Hills Area Planning Advisory Committee.

6. **Important historical/archeological sites:** A Phase 1 Archeological Study of the Wilson Estates Project, dated January 2011 was completed for the subject parcel. The study reported there were no significant prehistoric and historic-period cultural resources sites, artifacts, historic buildings, structures or objects found other than portions of rock building foundations. Because of the possibility in the future that ground disturbances could discover significant cultural resources, mitigation measures have been recommended (conditions 7-8) to assure that potential issues are addressed during project development.

Agency and Public Comments: The following agency and organizations were provided project details for review:

El Dorado Hills Area Planning Advisory Committee (EDHAPAC): The EDHAPAC reviewed the project at their August 8, 2012 meeting and responded that they had voted 4-0 in support of the project if their subcommittee's comments and recommendations were incorporated into the conditions of approval. Their primary concerns were oak trees, visual impacts of the proposed masonry sound wall, traffic levels, traffic safety, above-ground utilities, building setbacks along Green Valley Road, and on and off-site drainage. The EDHAPAC meeting summery letter dated August 15, 2012 is included as Exhibit R.

El Dorado Hills Community Service District ("District"): The District submitted advisory comments and conditions to be considered during the development of this project. Some of their recommendations are appropriate for the building permit stage and were not added to the conditions for this map stage. The applicable conditions have been included in Attachment 1. The project is conditioned for park in-lieu fees to be paid prior to filing the final map, and park impact fees are paid at the building permit stage. The District's October 17, 2012 letter is included as Exhibit Q.

ENVIRONMENTAL REVIEW

Staff has prepared an Initial Study (Mitigated Negative Declaration and Initial Study) to determine if the project may have a significant effect on the environment. Based on the Initial Study, conditions have been added to the project to avoid or mitigate to a point of insignificance the potentially significant effects of the project in the areas of impacts to aesthetics, biological resources, cultural resources, and noise. Staff has determined that significant effects of the project on the environment have been mitigated; therefore, a Mitigated Negative Declaration has been prepared.

This project is located within or adjacent to an area which has wildlife resources (riparian lands, wetlands, watercourse, native plant life, rare plants, threatened and endangered plants or animals, etc.). In accordance with State Legislation (California Fish and Game Code Section 711.4), the

project is subject to a fee of $2,156.25 after approval, but prior to the County filing the Notice of Determination on the project. This fee plus a $50.00 administration fee, is to be submitted to Planning Services and must be made payable to El Dorado County. The $2,156.25 is forwarded to the State Department of Fish and Game and is used to help defray the cost of managing and protecting the State's fish and wildlife resources.

SUPPORT INFORMATION

Attachments to Staff Report:

Attachment 1	Conditions of Approval
Attachment 2	Findings
Exhibit A	Location Map
Exhibit B	Assessor's Parcel Map
Exhibit C-1	General Land Use Designations Map
Exhibit C-2	El Dorado Hills Community Region Map
Exhibit D	Zoning Designations Map
Exhibit E	Tentative Map; May 2012
Exhibit F	Tentative Map Lot Size Table
Exhibit G	Tentative Map Photo Exhibit; May 2012
Exhibit H-1	Preliminary Grading and Drainage Plan, and Tree Preservation Plan; May 2012
Exhibit H-2	Road 'F' to Lots 47-49; May 2012
Exhibit I	Preliminary Onsite/Offsite Sewer Exhibit; May 2012
Exhibit J	Green Valley Connector Exhibit Y; October 2008
Exhibit K	Malcolm Dixon Area Traffic Circulation Plan Exhibit X; October 2008
Exhibit L	Masonry Sound Wall and Fence Exhibit; May 2012
Exhibit M	Preliminary Landscape Plan; January 6, 2012
Exhibit N	Figure 1, Proposed Site Plan and Traffic Noise Calibration Locations
Exhibit O	Zoning Map (rezone); May 2012
Exhibit P	Slope Map; May 2012
Exhibit Q	El Dorado Hills Community Service District Letter; September 24, 2012 (four pages)
Exhibit R	El Dorado Hills Area Planning Advisory Committee Letter; August 15, 2012
Exhibits S-1 to S-4	Site Visit Photos
Exhibit T	Aerial Photo of Project Site
Exhibit U	Proposed Mitigated Negative Declaration and Initial Study

Location Map

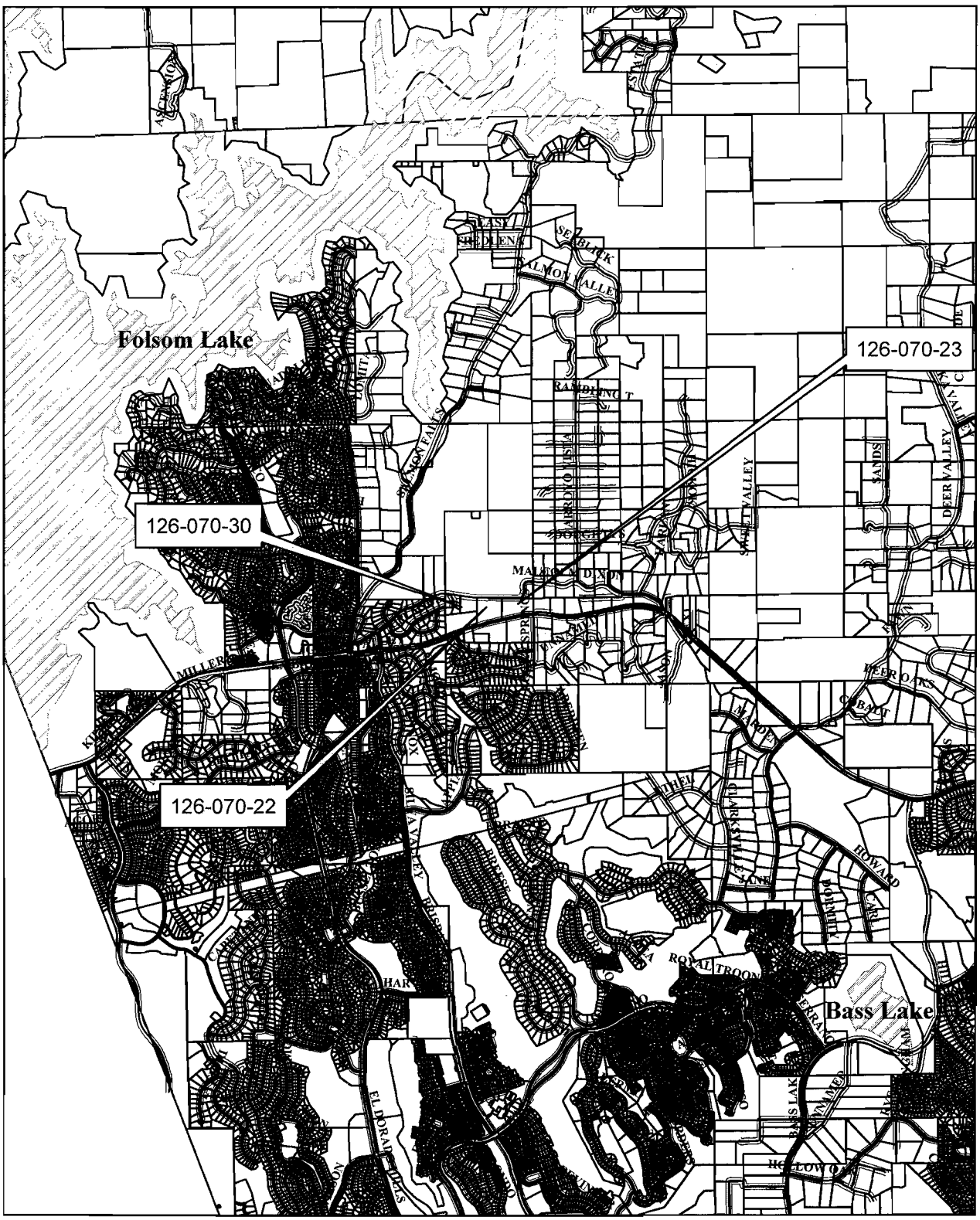
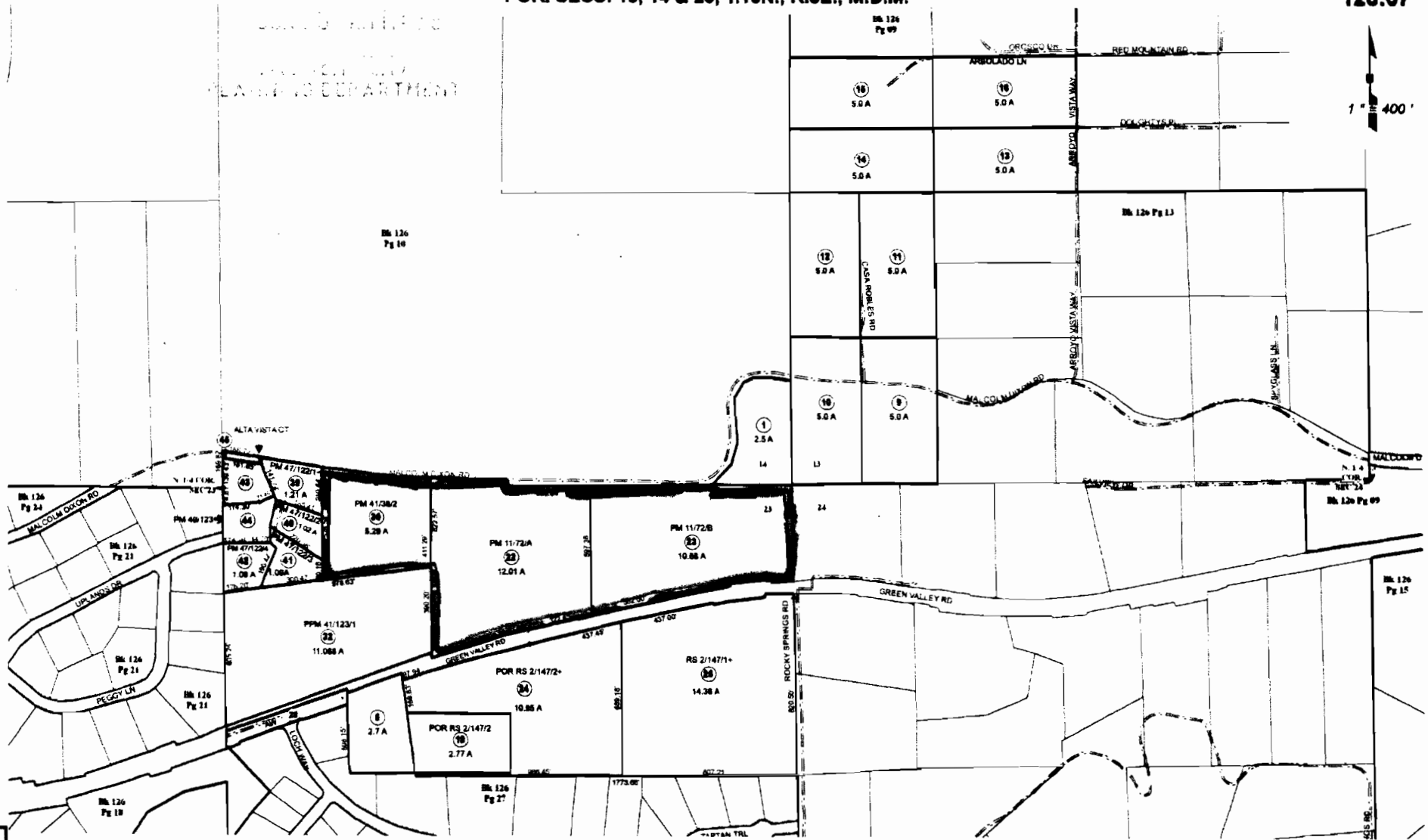


Exhibit A

File Nos. Z111-0007/TM11-1504

POR. SECS. 13, 14 & 23, T.10N., R.8E., M.D.M.

126:07



THIS MAP IS NOT A SURVEY. It is prepared by the El Dorado Co. Assessor's office for assessment purposes only. Area calculations and other data 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

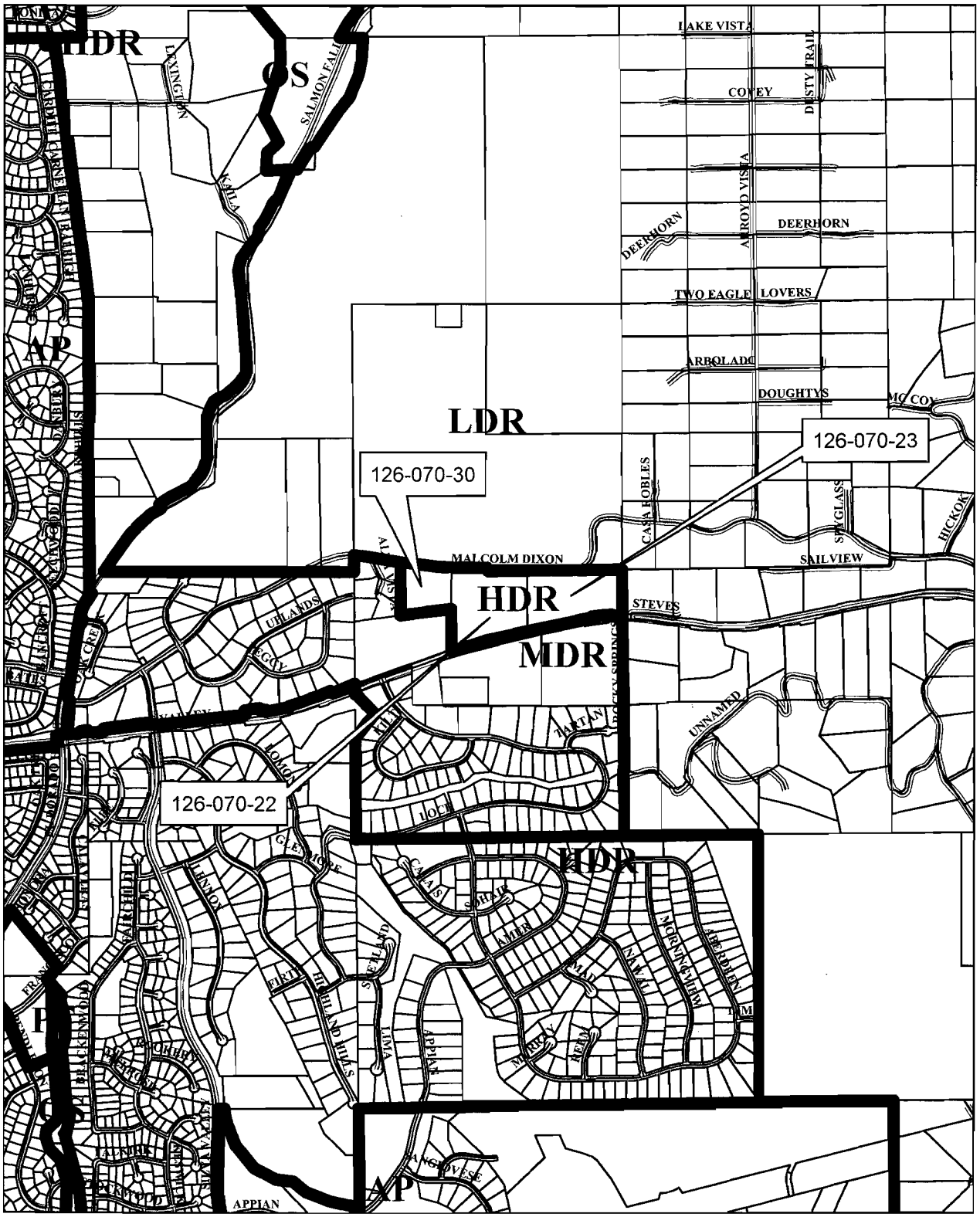
Rev. Jan. 2, 2009

Assessor's Map Bk. 126, Pg. 07
County of El Dorado, CA

Exhibit B

Z 11-0007
PD 11-0004/TM11-1504

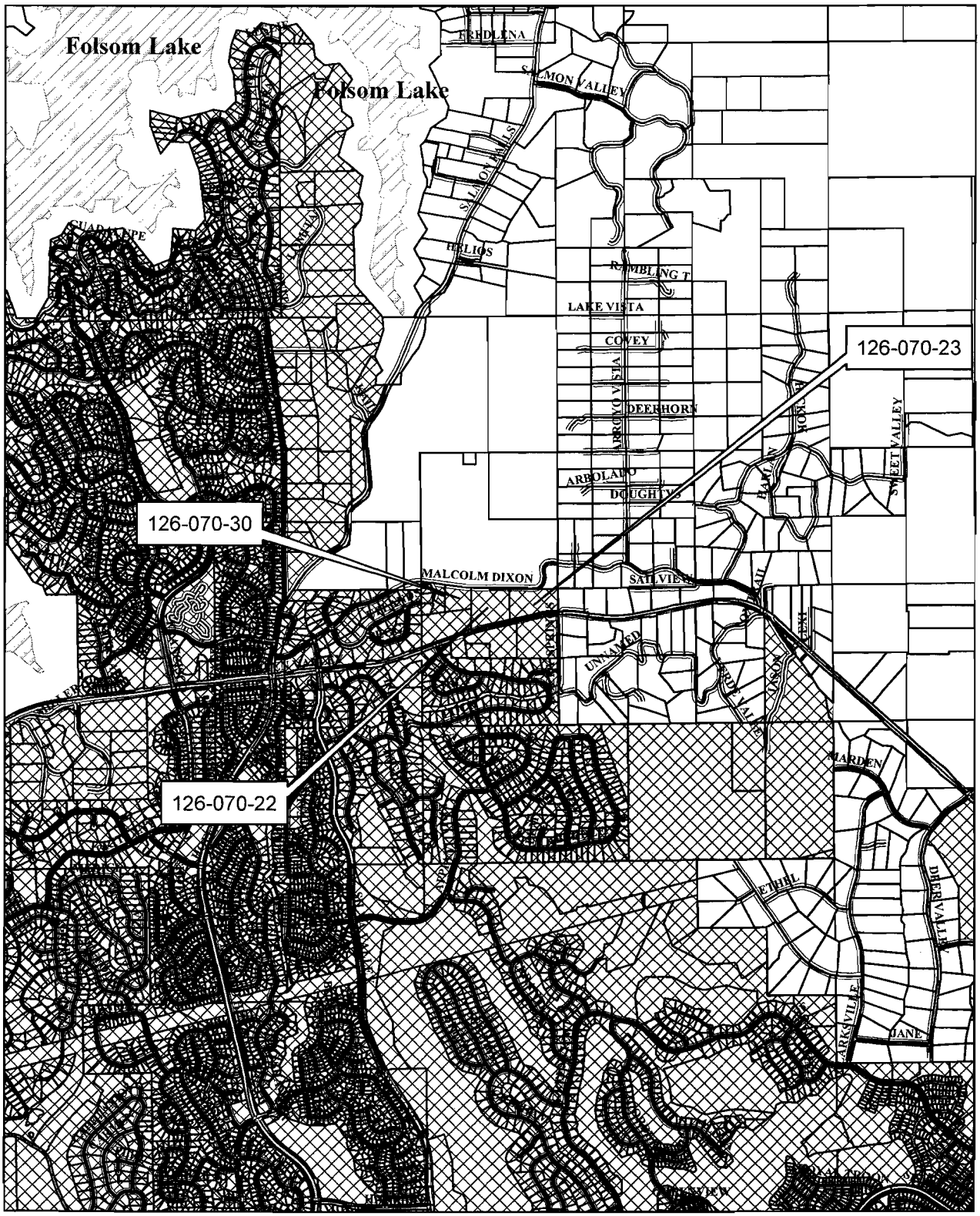
General Plan Land Use Designations Map



File Nos. Z111-0007/TM11-1504

Exhibit C-1

El Dorado Hills Community Region Map



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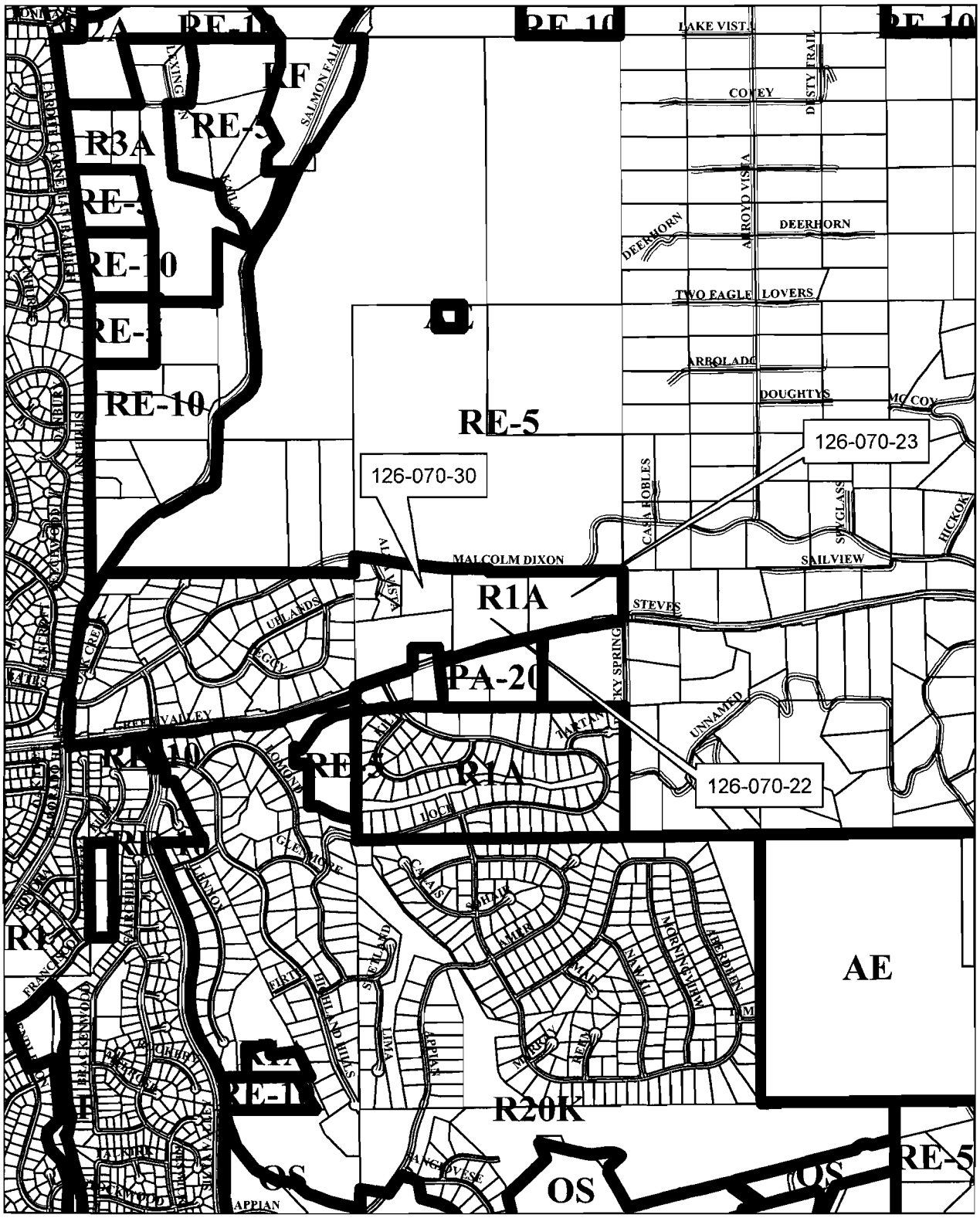
Miles

Community Region

File Nos. Z111-0007/TM11-1504

Exhibit C-2

Zoning Designations Map



File Nos. Z111-0007/TM11-1504

Exhibit D

TENTATIVE MAP

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA

RECEIVED
PLANNING DEPARTMENT

OWNERS OF RECORD
MS. ANN RYAN WILSON
4761 GREENMOOR DRIVE
EL DORADO HILLS, CA 95762

APPLICANT
CTA ENGINEERING & SURVEYING
3233 MONIER CIRCLE
RANCHO CORDOVA, CA 95742

ENGINEER
cta Engineering & Surveying
Civil Engineering · Land Surveying · Land Planning

MAP SCALE
1" = 60'

CONTOUR INTERVAL
CONTOUR INTERVAL = 2 FEET

SOURCE OF TOPOGRAPHY
AERIAL PHOTOGRAPHY

SECTION, TOWNSHIP and RANGE
PORTION OF SECTIONS 13, 14 & 23, T.10N., R.8E., M.D.M.

ASSESSOR'S PARCEL NUMBERS
A.P.N. 126-070-22, 126-070-23, 126-070-30

GENERAL PLAN
HDR IN A COMMUNITY REGION

PRESENT ZONING
R1A

PROPOSED ZONING
R1

TOTAL AREA
28.18 ACRES

TOTAL NUMBER OF PARCELS

RESIDENTIAL LOTS (1-49)	21.23 AC
PUBLIC ROAD LOTS (WITHIN DEFINED RESIDENTIAL ROW)	3.19 AC
LETTERED LOT (C)	
(OPEN SPACE, LANDSCAPE, DRAINAGE & RETAINING WALLS)	1.26 AC
LETTERED LOTS (A & B) (FRONTAGE LANDSCAPE)	0.83 AC
NEW CONNECTION (LOT F)	0.85 AC
MALCOLM DIXON ROADWAY DEDICATION	0.68 AC
GREEN VALLEY ROAD ROADWAY DEDICATION	0.56 AC
TOTAL AREA	28.18 AC

MINIMUM LOT AREA
10,141 SQUARE FEET

WATER SUPPLY and SEWAGE DISPOSAL
EL DORADO IRRIGATION DISTRICT

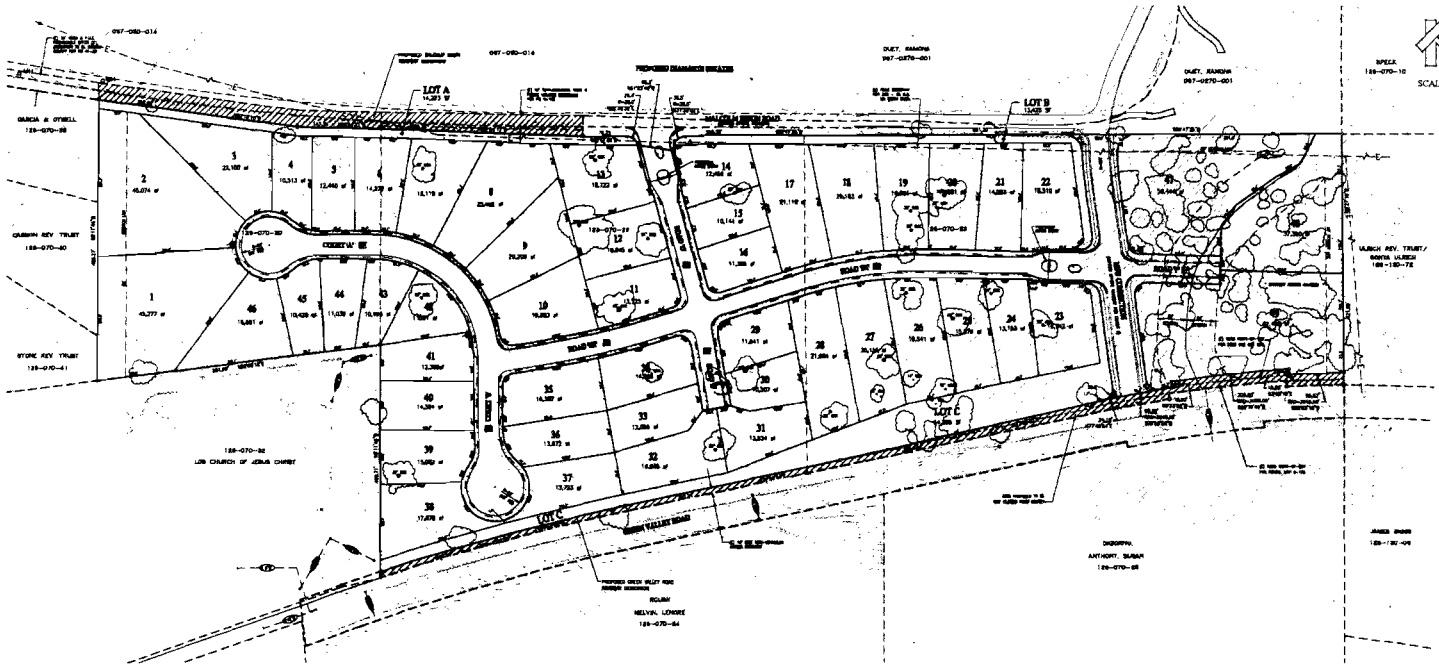
PROPOSED STRUCTURAL FIRE PROTECTION
EL DORADO HILLS COUNTY WATER DISTRICT (FIRE DEPARTMENT)

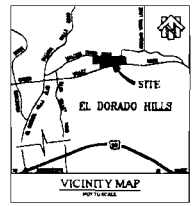
DATE OF PREPARATION
MAY, 2012

PHASING PLAN NOTICE
THE SUBDIVIDER MAY FILE MULTIPLE FINAL MAPS FOR THIS PROJECT. THE SUBDIVIDER SHALL NOT BE REQUIRED TO DEFINE THE NUMBER OR CONFIGURATION OF THE PROPOSED MULTIPLE FINAL MAPS. (PER THE SUBDIVISION MAP ACT, SECTION 66456.1)

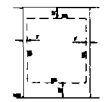
ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THE LAND DEVELOPMENT KNOWN AS WILSON ESTATES HAS BEEN DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS AND GUIDELINES ESTABLISHED BY THE COUNTY OF EL DORADO.

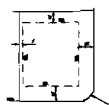
DAVID ROBERT CROSARIOL R.C.E. 34529 DATE





LEGEND
- (P) FIRE HYDRANT
- (P) SUBDIVISION BOUNDARY
- (P) RIGHT OF WAY LINE
- (P) LOT LINE
- (P) PAVEMENT WIDTH


INTERIOR LOT


CORNER LOT

TYPICAL BUILDING SETBACKS
ONE-FAMILY RESIDENTIAL
UNLESS NOTED OTHERWISE
NOT TO SCALE


TYPICAL SECTION
ROAD 'B1', 'D' & 'E'
PARKING ONE SIDE ONLY


TYPICAL SECTION
ROAD 'B2' COURT 'A', & COURT 'B'
PARKING ONE SIDE ONLY


TYPICAL SECTION
ROAD 'F'
NO PARKING

ONSITE ROADWAYS

OFFSITE ROADWAYS
SEE AREA OF BENEFIT EXHIBIT 'X' FOR THE NEW CONNECTION & MALCOLM DIXON ROAD.

Exhibit E

Wilson Estates Tentative Subdivision Map Individual Lot Area Summary			
Residential Lots			
Lot No.	**Gross Lot Areas in Square Feet**	**Lot No.**	**Gross Lot Areas in Square Feet**
1	45,277	26	19,541
2	45,074	27	20,155
3	22,100	28	21,504
4	10,513	29	11,941
5	12,440	30	10,507
6	14,272	31	13,834
7	18,118	32	16,935
8	25,402	33	12,055
9	20,206	34	14,966
10	18,983	35	16,207
11	13,725	36	13,672
12	16,045	37	13,723
13	18,722	38	17,878
14	12,459	39	15,062
15	10,141	40	14,394
16	11,395	41	12,389
17	21,116	42	11,291
18	20,183	43	10,493
19	16,391	44	11,039
20	16,691	45	10,428
21	14,083	46	19,681
22	18,510	47	50,544
23	16,742	48	37,350
24	13,193	49	62,449
25	15,879		

Lettered Lots: Open space, roads, landscape, drainage, and retaining walls	
Lot Letter/Type	**Gross Lot Areas in Square Feet**
A (Frontage landscape)	14,223
B (Frontage landscape)	13,426
C (Open space, landscape, drainage, retaining walls)	54,855

Exhibit F

PHOTO EXHIBIT

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA

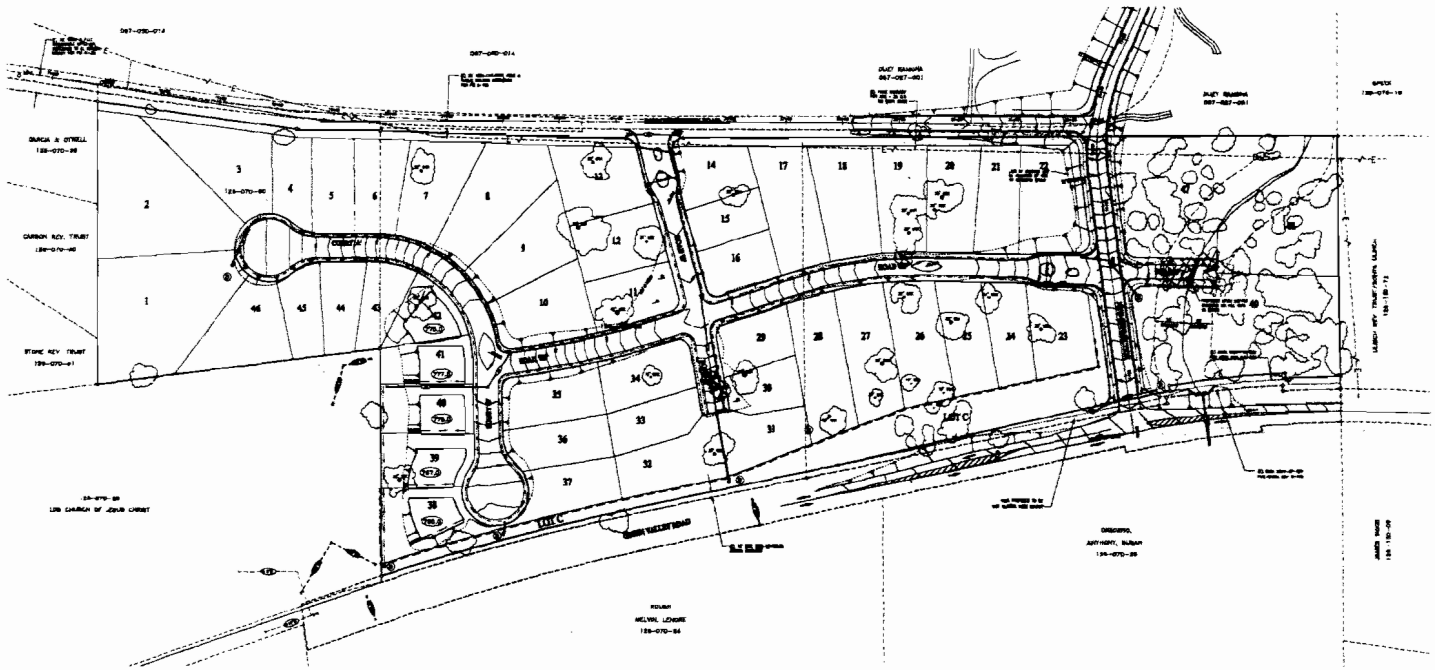
Exhibit G

cta Engineering & Surveying

PRELIMINARY GRADING, DRAINAGE PLAN & TREE PRESERVATION PLAN

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA



LEGEND

- (P) SUBDIVISION BOUNDARY
- (P) RIGHT OF WAY LINE
- (P) LOT LINE
- EASEMENT LOT LINE
- DAYLIGHT LINE
- GRADE BREAK
- AC DIKE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED PAD ELEVATION
- FLARED END SECTION
- STORM DRAIN LINE
- DRAINAGE INLETS
- PROPOSED DRAINAGE OUTFALL
- (P) RETAINING WALL
- (P) 6' NOISE BARRIER
- (P) DRAINAGE DITCH
- (P) TREE REMOVAL

EARTHWORK:

APPROXIMATE CUT 16,790 CY

APPROXIMATE FILL 16,790 CY

TREE PRESERVATION PLAN

TOTAL (S) CANOPY	2.9± Ac
10% REMOVAL ALLOWED	0.29 Ac
(P) CANOPY REMOVAL AS SHOWN	0.24 Ac
REMAINING ALLOWABLE CANOPY REMOVAL	0.04 Ac

DRAINAGE CALCULATIONS

	PRE-DEV			POST-DEV		
	Ac	10	100	Ac	10	100
SHED A	204	152.1	254.2	228	170	284
SHED B	1.4	7.3	12.2	0.9	5	13.2
SHED C	4.4	7.3	12.2	5.2	7.1	11.7
SHED D	11.4	12	20.4	9.8	10.2	16.7

cta Engineering & Surveying

Civil Engineering Land Surveying Land Planning

Exhibit H-1

M:\06-047-002\PLANNING\TENTATIVE MAP\06-047-002-PG.dwg, PRELIMINARY GRADING, 5/10/2012 11:59:51 AM, rfursov

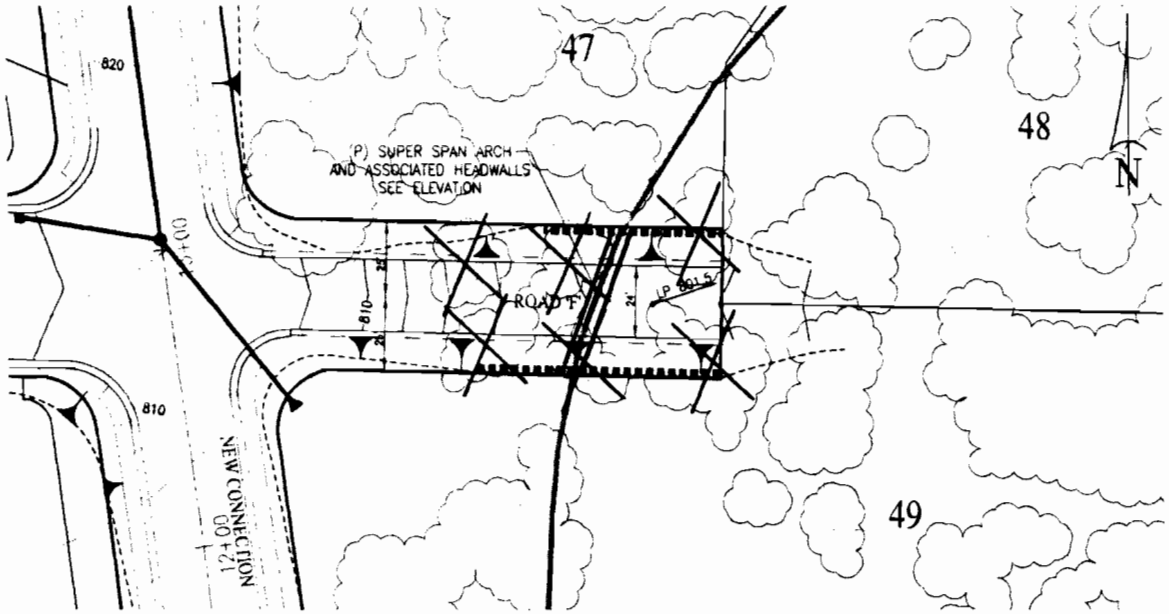
WILSON ESTATES

ROAD 'F' DRAIN CROSSING

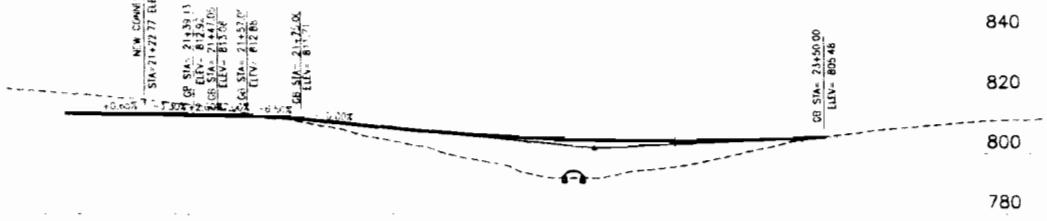
(P) TOTAL AVOIDANCE OF US WATERS

EL DORADO HILLS, CALIFORNIA

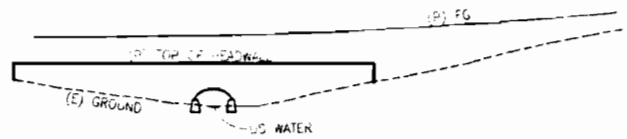
MAY, 2012



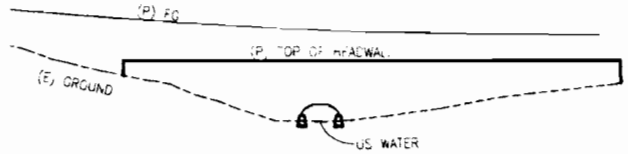
PLAN VIEW
SCALE: 1"=40'



ROAD 'F' PROFILE
SCALE: 1"=40'



UP STREAM
LOOKING DOWN STREAM



DOWN STREAM
LOOKING UPSTREAM

ELEVATION
SCALE: 1"=20'

NOTES:
1. APPROXIMATE 6'x1'-9.5" STRUCTURAL PLATE ARCH OR EQUIVALENT
2. HEADWALLS APPROXIMATE AS SHOWN; POSSIBLE ANGLES IF TREES ARE AVOIDED.
3. NO IMPACT TO US WATER.
4. COE PERMIT (NOT REQUIRED)
5. 401 WATER QUALITY CERT. (NOT REQUIRED)
6. FISH AND GAME 1602 (MAY BE REQUIRED)

Exhibit H-2

cta Engineering & Surveying
Civil Engineering Land Surveying Land Planning
3233 Mercer Circle Rancho Cordova, CA 95742

M:\06-047-002\PLANNING\EXHIBITS\Roadway to lots 47-48-49 dwg, Layout1, 5/22/2012 4:05:04 PM, rfunsov

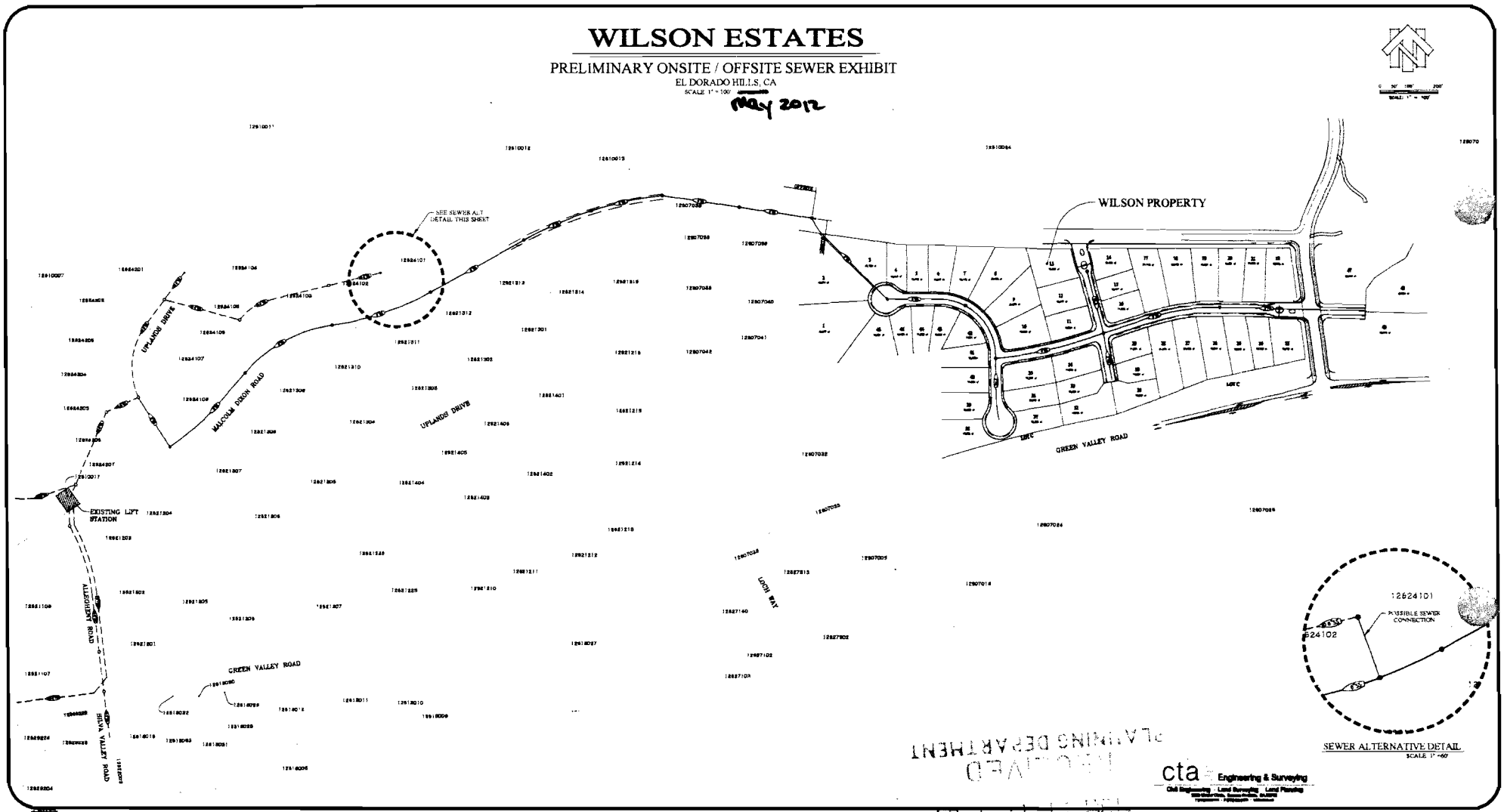
WILSON ESTATES

PRELIMINARY ONSITE / OFFSITE SEWER EXHIBIT

EL DORADO HILLS, CA

SCALE 1" = 100'

May 2012



PLANNING DEPARTMENT
RECEIVED

Exhibit I

GREEN VALLEY CONNECTOR

EXHIBIT Y

EL DORADO COUNTY, CALIFORNIA

SCALE 1"=50' OCTOBER, 2008

LEGEND

RESULTING SEVERANCE FROM 126-020-01

RIGHT OF WAY ACQUISITION

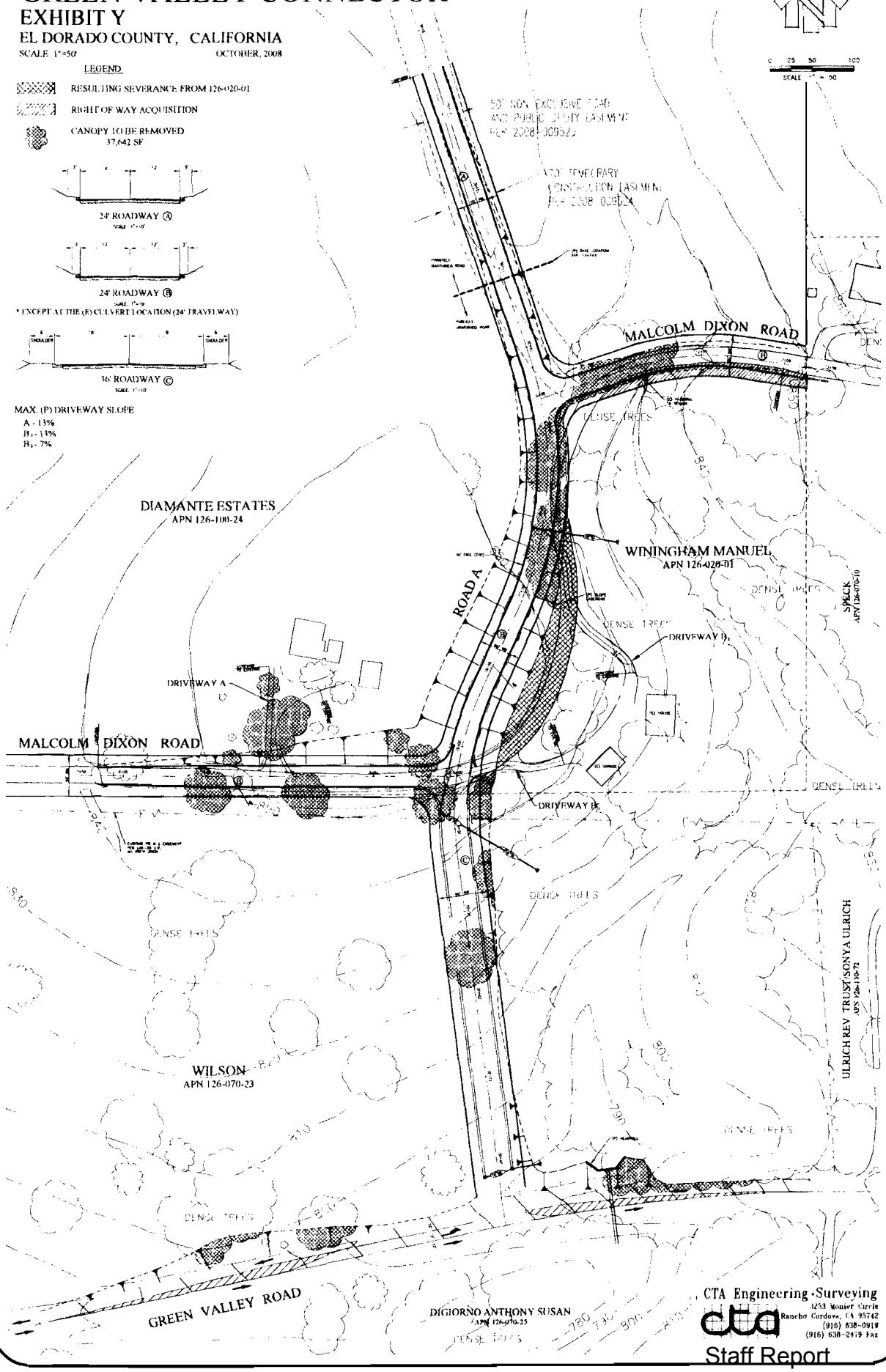
CANOPY TO BE REMOVED
37,642 SF

24' ROADWAY Ⓐ

24' ROADWAY Ⓑ
* EXCEPT AT THE (E) CULVERT LOCATION (24' TRAVELWAY)

36' ROADWAY Ⓒ

MAX. (P) DRIVEWAY SLOPE
A - 13%
B_1 - 13%
B_2 - 7%



CTA Engineering·Surveying
3253 Monier Circle
Rancho Cordova, CA 95742
(916) 638-0919
(916) 638-2479 Fax

MALCOLM DIXON AREA TRAFFIC CIRCULATION PLAN

EXHIBIT X

EL DORADO COUNTY, CALIFORNIA

OCTOBER, 2008

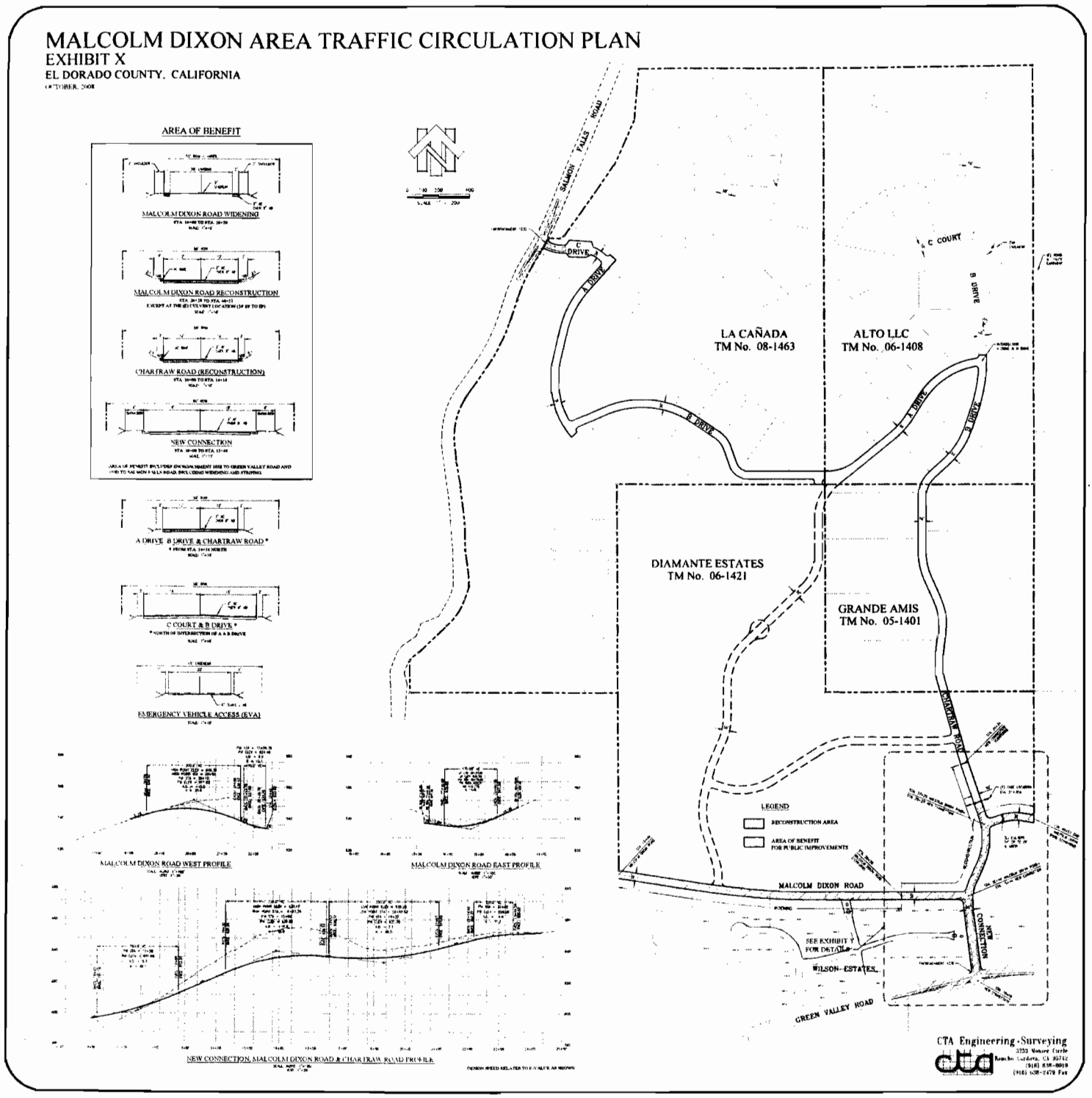
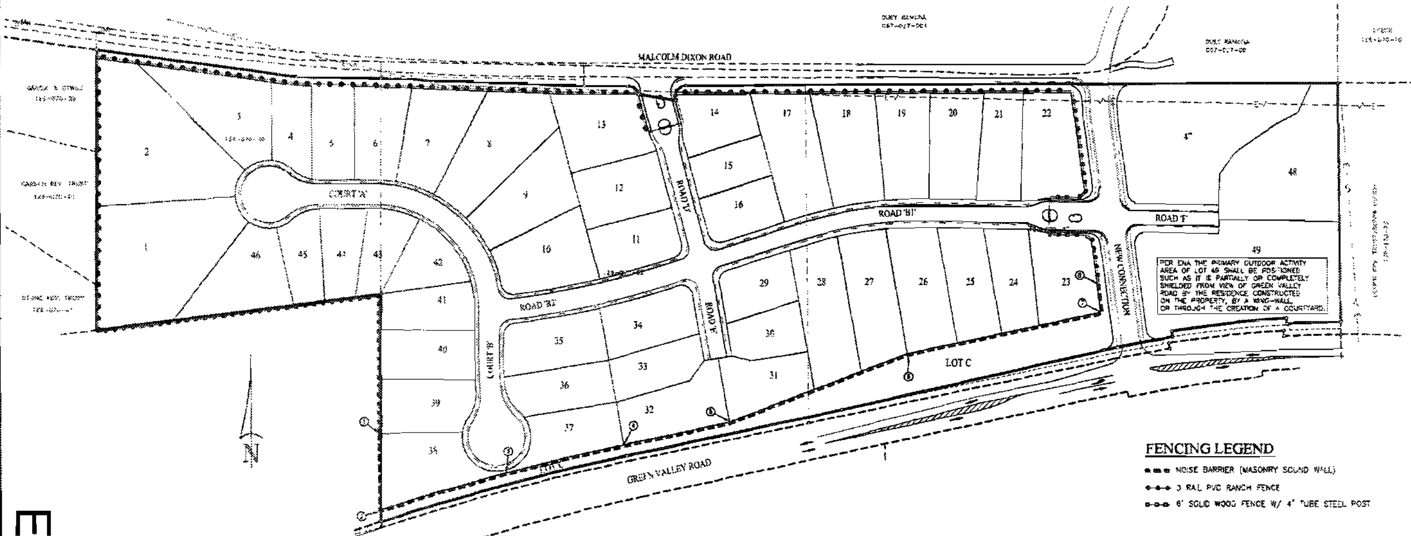


Exhibit K

WILSON ESTATES
MASONRY SOUND WALL & FENCE EXHIBIT
COUNTY OF EL DORADO, CALIFORNIA

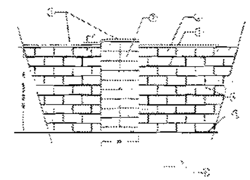
MAY, 2012

Exhibit L



SITE PLAN

SCALE: 1"=100'

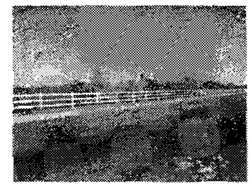


NOISE BARRIER DETAIL (MASONRY SOUND WALL)

SCALE: 1"=4'

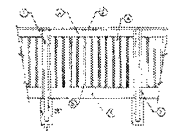
1. SPLIT PAVER CAP BY BASALITE. COLOR: TAN 0-346
2. TOP COURSE, BASALITE PROTO II MASONRY 8"x8"x16" BLOCK, STD. FACE/COMBED BACK. COLOR: TAN 0-346. PLACE WASHER AND NUT OVER STEEL TENSION ROD.
3. REMAINING FIELD COURSES, BASALITE PROTO II MASONRY 8"x8"x16" SPLIT FACE/COMBED BACK BLOCK. COLOR: TAN 0-346.
4. HORIZONTAL JOINT REINFORCING, PER MANUFACTURER'S SPECIFICATIONS. SEE PROTO II ENGINEERING
5. CONCRETE SETTING PAD.
6. CONCRETE FOOTING. DASHED LINE INDICATES LINE OF DIP FOOTING OR LINE OF CONTINUOUS TRENCH FOOTING. SEE PROTO II ENGINEERING.
7. 32" WIDE X 16' DEEP PILASTER, PLACED MIN. 200' O.C. BASALITE PROTO II MASONRY 8"x8"x16" BLOCK, STD. FACE/STD. BACK. COLOR: TAN 0-346.

NOTE: ALL MASONRY WALLS ARE TO BE PAINTED WITH AN ANTI-GRAFFITI COATING. COATING TO BE BLOCK GUARD (PROSOCO), MONOCHEM PERMA SHIELD (VISTA PAINT), ACRYLI-MASTER (GRAFFITI MASTER), GSP 1000 (GENESIS COATINGS, INC.) OR APPROVED EQUAL, NON-SACRIFICIAL TYPE ONLY.



3 RAIL PVC RANCH FENCE

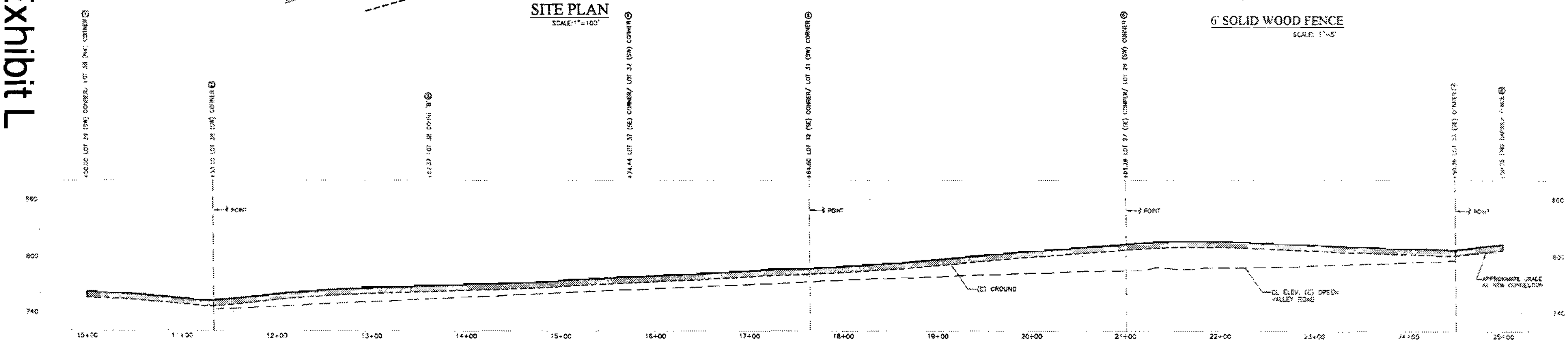
SCALE: NTS



6' SOLID WOOD FENCE

SCALE: 1"=5'

1. 4x4x3/16" STEEL TUBE POST
2. 2x6 REDWOOD CAP
3. 2x8 REDWOOD TOP RAIL
4. 1x8 REDWOOD FENCE
5. 1x2 REDWOOD STRIP
6. 2x12 REDWOOD BOTTOM RAIL
7. 2x4 REDWOOD FRAME BOARD BOLTED TO STEEL TUBE

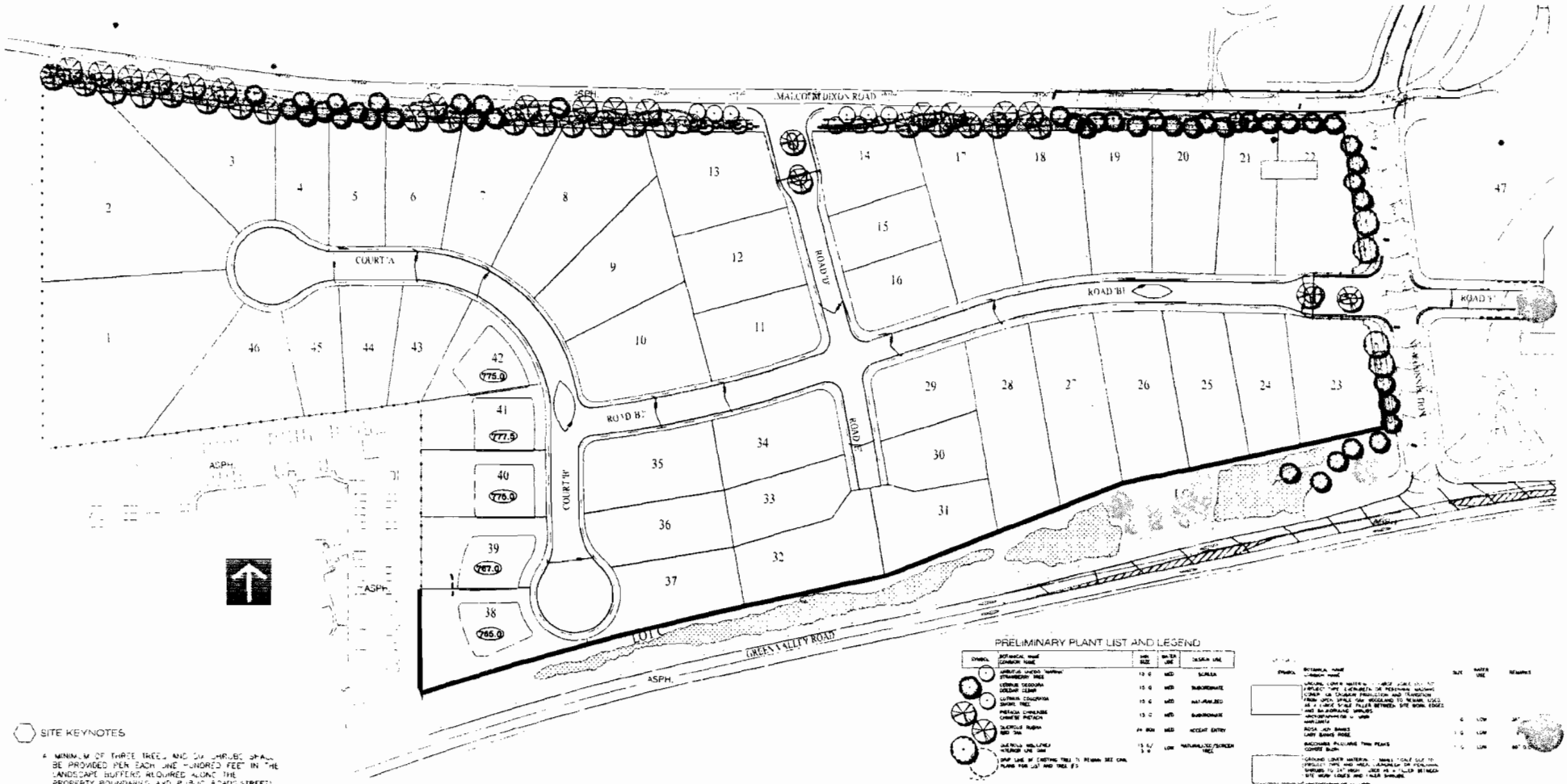


FG/FENCE PROFILE

SCALE: 1"=50' HORZ. & VERT.

cta Engineering & Surveying

Civil Engineering · Land Surveying · Land Planning



PRELIMINARY PLANT LIST AND LEGEND

SITE KEYNOTES

A. MINIMUM OF THREE TREES AND SIX SHRUBS SHALL BE PROVIDED PER EACH ONE HUNDRED FEET IN THE LANDSCAPE BUFFERS REQUIRED ALONG THE PROPERTY BOUNDARIES AND PUBLIC ROADS/STREETS OR HIGHWAYS. THE SIZE AND SPECIES SHALL BE APPROVED BY THE PLANNING DIRECTOR.

B. COMMON AREA OPEN SPACE LANDSCAPING LOCATED ADJACENT TO DEVELOPMENT IS TO SHALL CONTAIN DROUGHT RESISTANT PLANTINGS

C. 6.0" MASONRY WALL SHALL BE PROVIDED ADJACENT TO COMMON AREA OPEN SPACE.

D. A WOOD "GOOD NEIGHBOR" FENCE SHALL BE PROVIDED BETWEEN UNITS

E. A MIN. 5'-0" METAL FENCE AT OPENINGS BETWEEN WALL AND LOTS

F. ALL PLANTINGS SHALL BE AUTOMATICALLY IRRIGATED PER STATE AB 1881, EL DORADO COUNTY, AND EL DORADO IRRIGATION DISTRICT REQUIREMENTS

Exhibit M

WILSON ESTATES
EL DORADO COUNTY, CA

PRELIMINARY LANDSCAPE PLAN

SCALE 1" = 60'-0"

PL1

FUHRMAN LEAMY

PROJECT CTA11077

Figure 1

Wilson Estates - El Dorado County, California

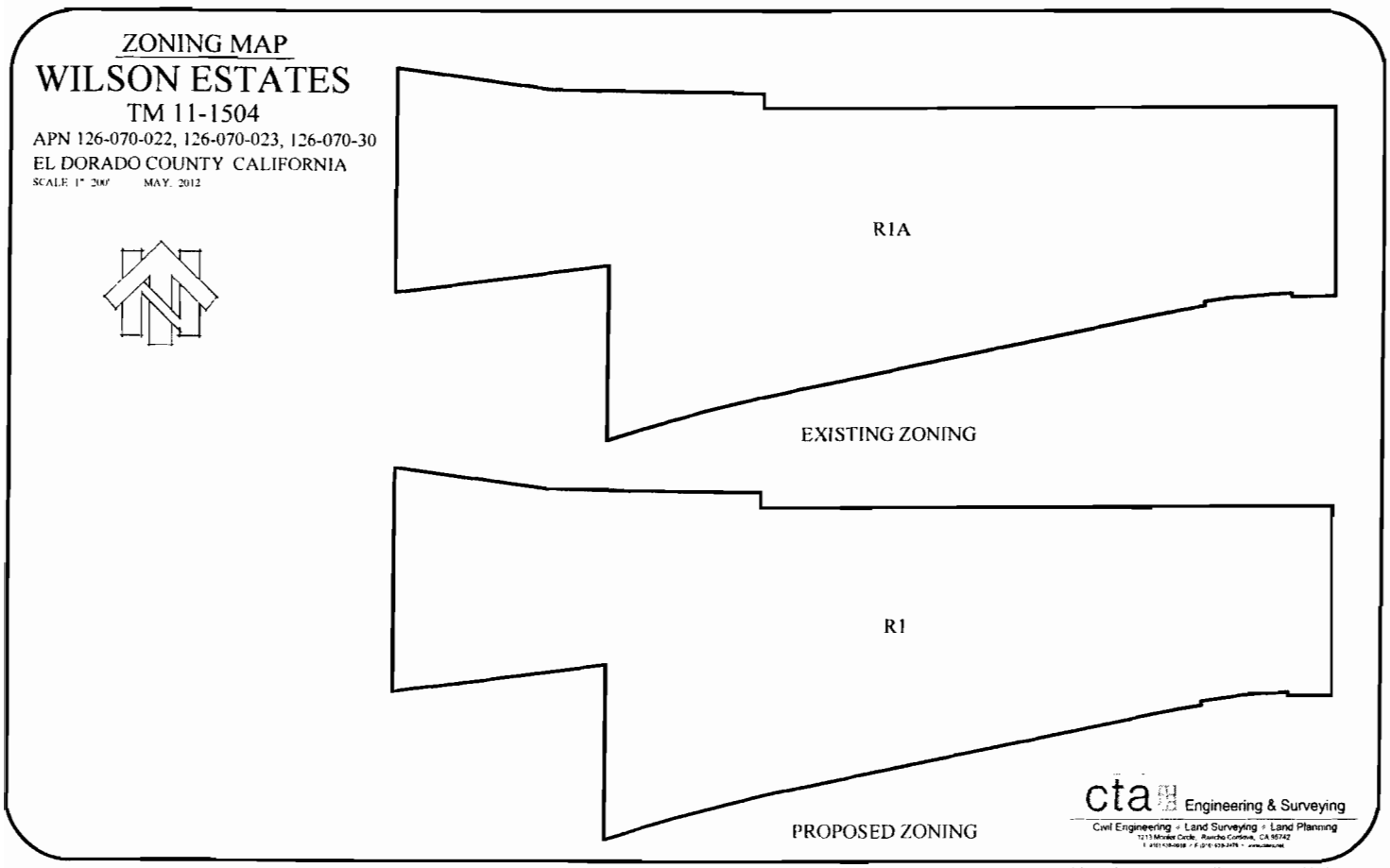
Proposed Site Plan & Traffic Noise Calibration Locations

BOLLARD
Acoustical Consultants

Scale (feet)
0 150 300

Exhibit N

Rezone



M:\06-047-002\PLANNING\EXHIBITS\06-047-002 ZONING.dwg Layout2-Layout1, 5/14/2012 11:00:37 AM rfuraev

Exhibit O

SLOPE MAP

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA

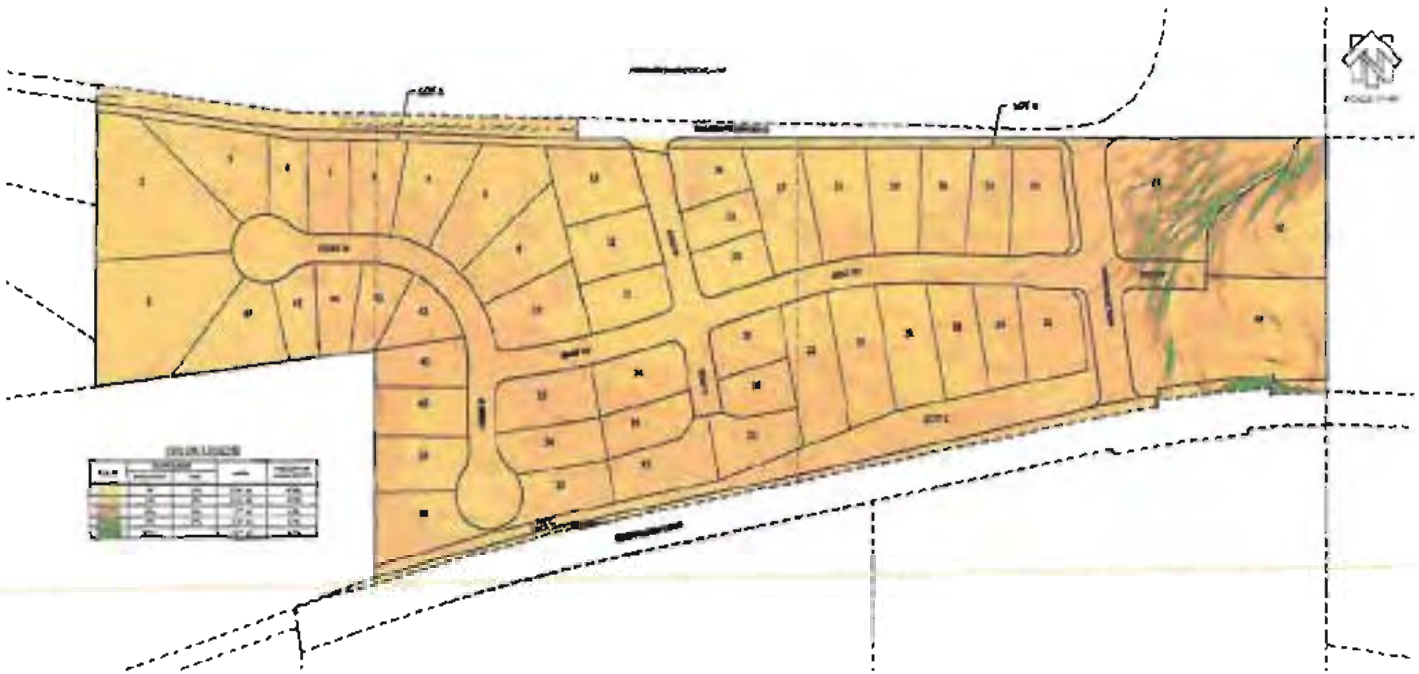


Exhibit P

cta

El Dorado Hills
COMMUNITY SERVICES DISTRICT

September 24, 2012

Tom Dougherty, Project Planner
El Dorado County Planning Department
2850 Fairlane Court
Placerville, CA 95667

RE: **Z 11-0007, PD 11-0004 &TM 11-1504 WILSON ESTATES (Ann Wilson/CTA Engineering & Surveying)**

Dear Mr. Dougherty:

The District apologizes for the delay in submitting comments for the above reference project. The District hopes that our comments may be considered.

The El Dorado Hills Community Services District ("District") appreciates this opportunity to respond to the request for comments on the above referenced project. The CSD has a mission to *"improve the quality of life for El Dorado Hills residents through responsible leadership and by providing superior service and facilities"*. The District has purview over parks, recreation facilities and programs, street lighting, cable television, solid waste management, CC&R's and design review, under grounding utilities, Landscaping and Lighting Assessment District creation and administration, bicycle and pedestrian trails and open space management. In addition to the above, the District comments on community issues including traffic circulation, lighting, and noise impacts from new development.

The following comments are advisory in nature, unless otherwise noted, and warrant comment by the CSD as they affect our futures residents' quality of life. The CSD supports the applicant's above referenced project and would like the following conditions considered during the development of this project and as it moves forward:

1. The developer/owner should ensure that all HOA CC&R's in place at the time of the subdivision of the land be fully complied with. Particular attention should be given to minimum lot sizes allowed and setback requirements.

Exhibit Q

2. Construction of future new residences will be subject to payment of Park Impact Fees in place at time of building permit issuance. Park Impact fees are to be paid at time of building permit issuance

3. The subdivided lots will be subject to payment of Quimby fees prior to the release of the final map for the subdivision. The Quimby factor for this project is **.132** and is to be multiplied by the Fair Market value of one acre of land in the vicinity of the project to arrive at fee value. This fee is paid directly to El Dorado Hills CSD **before** the final map is released to the Project Owner, or Owner's representative.

   The District's Quimby in-lieu fee calculation for this project is illustrated as follows:

   Factors

   - 49 Lots
   - 3.3 average population density per future dwelling
   - 5 acres (AC) dedicated parkland per 1000 population
   - $200,000/acre **estimated** Fair Market Value (FMV) of land in the vicinity of project.

   Formula

   - 3.3 X 49 Lots X 5 AC/1000(population) = **.809**
   - .49 X FMV ($200,000/AC) = **$161,700**

   Total *Estimated* In-Lieu fees to be paid to El Dorado Hills CSD: $161,700

   The above illustration is for informational purposes only; the actual In-lieu fee is based on the appraised FMV at time of the release of the final map. This fee MUST be paid to El Dorado Hills CSD prior to release of FINAL map

4. The District requests to be provided a copy of the landscape and streetscape designs for District records.

5. It is requested by the District that the applicant review the current version of the Streetscape Master Plan to become familiar with the District's objectives regarding Streetscapes i.e. landscape material, wall and/or fence material, irrigation components, sidewalk connectivity, etc. The current version of the El Dorado Hills CSD Streetscape Master Plan can be viewed at www.edhcsd.org

6. No interruption of bike trails is allowed. Bike trails should be linked with existing bike trails in the vicinity.

7. All trails that may be adjacent to property should be connected. No interruption of trail system is allowed.

8. All efforts should be made to preserve any existing Oak Trees. In the event that Oak Trees are removed, the standard Oak Tree Mitigation guidelines should be followed.

9. Streetlights should be limited to all major intersections for safety purposes; however, they should be shielded so that the night skies can be preserved.

10. Guidelines for construction, landscape, and entry lighting to be implemented include:
    a. Light beams shall not trespass adjacent areas.
    b. Lighting shall not be angled to create glare for passing traffic.
    c. Lighting fixtures shall be hidden from view through plantings.

11. Each residence will have its own cable television hookup service available which must be provided by current cable television franchisor.

12. Trenching to be provided for cable lines; Electrical and cable to be under grounded and in common trenches.

13. The El Dorado Hills CSD requires mandatory waste management services for each new residence, including recycling services. Waste management services required to be provided by current waste collection provider.

14. In consideration of the mandatory waste management service required by El Dorado Hills CSD, each residential lot should be developed with accommodations to store a minimum of three waste and recycle material containers provided by the current waste management contractor. These containers are to be in an area not visible from the street.

15. All construction debris resulting from any new construction should be disposed of in a manner consistent with the solid waste diversion plan practiced by El Dorado Hills CSD and as mandated by AB939, and in compliance with El Dorado County Construction and Demolition Debris Recycling Ordinance, Section1, Chapter 8.43 of Title 8 of the El Dorado County Ordinance Code.

In summary, the District supports approval of the rezoning request and the parcel map to create forty nine (49) residential lots ranging in size from 10,141 square feet to 62,449 square feet, two frontage landscape lots, one lot for open space, landscaping, drainage, and retaining walls. Please keep me informed of the progress of this project and provide the District with copies of staff reports and conditions of approval prior to the Technical Advisory Committee, Planning Commission Hearing and consideration by the Board of Supervisors. If you have any questions or need additional information, please feel free to contact me directly at (916) 643-4362

If you have any questions or comments regarding this letter, please contact me directly at (916) 614-3213

Sincerely,

Sandi Kukkola
Interim General Manager

cc:

Ron Briggs, EDC Supervisor District 4
EDHCSD APAC
CTA Engineering and Surveying
Ann Wilson
Tom Dougherty, EDC Project Planner

El Dorado Hills Area Planning Advisory Committee
1021 Harvard Way
El Dorado Hills, CA 95762

August 15, 2012

El Dorado County Planning Services
Attn: Tom Dougherty, project Planner
2850 Fairlane Court
Placerville, CA 95667

Subject: Application Revision for Z 11-0007, PD 11-0004 & TM 11-1504 - WILSON ESTATES (Ann Wilson/CTA Engineering & Surveying)

Ref: APAC's previous subcommittee letter dated July 16th 2012 related to this project

The full APAC committee met on August 8, 2012 and voted 4-0, unanimous support for the subcommittees recommendations from their letter dated 7/16/12.

The subcommittee recommended **conditional support if the attached comments are addressed and become part of the conditions of approval by the County.**

If you have any question about any of the comments and concerns expressed here, please contact John Hidahl, APAC Chairman at Hidahl@aol.com or (916 933-2703).

APAC appreciates having the opportunity to comment on this project.

Sincerely,

John Hidahl,
APAC Chairman

APAC's Comments for Wilson Estates Revised Project

The subcommittee's overhaul assessment of the revised project is it's substantially better than the previous submitted project. The lot layout provides more buffering to the neighbors and the lost of Oak Trees has been reduced. The new road design fits the rural character of the surrounding vicinity and allows better egress and access to the project.

Exhibit R

Specifically, the subcommittee has the following comments:

All trees removed should be verified by a County approved arborist and a minimum of 15 gallon Oak Trees should be replanted on site as replacements.

The impact of the long masonry sound wall between Green Valley road and the project needs to be reduced. APAC recommends that the wall start at the church property line and transition into a landscape berm when approaching lot 31. County should require complete shielding of block sound wall with vertical landscaping. Planting should be larger than 1 gallon and sound wall needs vertical landscape screening.

The reduction of 9 lots in the project will help mitigate some of the traffic problems but APAC is concerned that the traffic levels at major intersections and projection of traffic patterns from and through the project are incorrect. The traffic impact analysis failed to take into cumulative peak volumes with the church. A cumulative traffic study including all of the projects proposed and approved along the Green Valley Corridor must be conducted to mitigate the traffic impacts to this area.

The length of the left turn pocket to Wilson subdivision from eastbound GreenValley must be long enough so vehicles don't get rear ended at peak hours when traffic has to wait to make the left into Wilson project. This is a critical location with high speeds; if traffic were to back up and extend outside of the turn lane it would be a dangerous situation. Please have a County traffic engineer verify the length of the turning lane to prevent this condition.

County must not approve this project without a left turn lane to Stirlingshire from westbound Green Valley or at minimum widen outside right shoulder to 10ft for a length of 150ft. Rear end accidents and near misses are a regular occurrence. This has been documented to the County and needs immediate improvement. This needs to be a condition of this project for public safety.

County should require more elevation data on layout to verify the new road approach onto GreenValley does not have site distance issues since it is in a cut.

To maintain the rural character of the location, utilities should be below ground.

Homes along the Green Valley road frontage should be sited furthest from the road to add additional traffic noise reduction when Green valley road is widen to four lanes.

An onsite drainage plan must be prepared to determine water flow on and offsite of the project. The County should check profile of road approach to make sure roadside flows do not sheet flow onto Green Valley road.

Standing on Green Valley Road looking north at the point where proposed "New Connection, Lot F" would encroach.
Note: The road does not bend here, that is just how the camera makes it appear by joining three photos.

Looking west.

Looking east.

Standing on at the point where proposed "New Connection, Lot F" would encroach looking east and west for existing.

Southeast corner of the church parcel.

Standing on Green Valley Road looking north at the point where " Lot A" adjoins the church parcel.
Note: The road does not bend here, that is just how the camera makes it appear by joining three photos.

Exhibit S-1

Point where the intermittent stream (Dutch Ravine) exits the parcel south under Green Valley Road through a culvert.

The intermittent stream (Dutch Ravine).

Standing at the north end of the church parcel looking north at the proposed "Lot A" area near proposed Lots 1-5 and 51-56. Where the trees are in the background is where Malcolm Dixon Road marks the north project boundary.

Exhibit S-2

Existing EID facilities near the intersection of Malcolm Dixon Road and Allegheny Road.

Standing on Malcolm Dixon Road looking east at the Uplands Drive intersection. The project proposes to install a sewer line under Malcolm Dixon from the project site and then north (left) to an existing manhole located in Uplands Drive.

Standing on Malcolm Dixon Road looking west at the point where proposed "Road A" would encroach near the northwest project area corner..

Standing on Malcolm Dixon Road near the northwest project corner looking east.

Standing on Malcolm Dixon Road near the northwest project corner looking east at two points near proposed Lots 7-20..

Exhibit S-3

Standing on Malcolm Dixon Road at the approximate location where the "New Connection, Lot F" would encroach, looking south.

Exhibit S-4

Google earth feet 4000
km 1

Exhibit T

MITIGATED NEGATIVE DECLARATION

FILES: Rezone Z11-0007/Tentative Map TM11-1504

PROJECT NAME: Wilson Estates

NAME OF APPLICANTS: Ann Wilson, Lisa Vogelsang, Katie Ryan, and Julie Ryan

ASSESSOR'S PARCEL NOS.: 126-070-22, -23 and -30 **SECTION:** 14 & 23 **T:** 10N **R:** 8E

LOCATION: North side of Green Valley Road, approximately 3,000 feet east of the intersection with Silva Valley Road, in the El Dorado Hills area.

☐ **GENERAL PLAN AMENDMENT:** **FROM:** **TO:**

☒ **REZONING:** **FROM:** One-Acre Residential (R1A) **TO:** One-Family Residential (R1)

☐ **TENTATIVE PARCEL MAP**

☒ **SUBDIVISION** to split 28.18 acres into 49 single-family residential lots ranging in size from 10,141 sq. ft. to 62,449 square feet, two frontage landscape lots (A 14,233 square feet, and B 13,426 square feet), one 54,855 square foot lot (C) for open space, landscaping, drainage, and retaining walls, one 0.65-acre public roadway lot (Lot F), and two gates at the project entrances to Roads B1 and D.

SUBDIVISION (NAME): Wilson Estates

☐ **SPECIAL USE PERMIT TO ALLOW:**

☐ **OTHER:**

REASONS THE PROJECT WILL NOT HAVE A SIGNIFICANT ENVIRONMENTAL IMPACT:

☐ **NO SIGNIFICANT ENVIRONMENTAL CONCERNS WERE IDENTIFIED DURING THE INITIAL STUDY.**

☒ **MITIGATION HAS BEEN IDENTIFIED WHICH WOULD REDUCE POTENTIALLY SIGNIFICANT IMPACTS.**

☐ **OTHER:**

In accordance with the authority and criteria contained in the California Environmental Quality Act (CEQA), State Guidelines, and El Dorado County Guidelines for the Implementation of CEQA, the County Environmental Agent analyzed the project and determined that the project will not have a significant impact on the environment. Based on this finding, the Planning Department hereby prepares this MITIGATED NEGATIVE DECLARATION. A period of thirty (30) days from the date of filing this mitigated negative declaration will be provided to enable public review of the project specifications and this document prior to action on the project by COUNTY OF EL DORADO. A copy of the project specifications is on file at the County of El Dorado Planning Services, 2850 Fairlane Court, Placerville, CA 95667.

This Mitigated Negative Declaration was adopted by the Board of Supervisors on _____.

_____

Executive Secretary

EL DORADO COUNTY PLANNING SERVICES
2850 FAIRLANE COURT
PLACERVILLE, CA 95667

INITIAL STUDY
ENVIRONMENTAL CHECKLIST

Project Title: Z11-0007/ TM11-1504/Wilson Estates

Lead Agency Name and Address: El Dorado County, 2850 Fairlane Court, Placerville, CA 95667

Contact Person: Tom Dougherty | **Phone Number:** (530) 621-5355

Property Owners/Applicants' Name and Address: Ann Wilson, Lisa Vogelsang, Katie Ryan, and Julie Ryan; 4101 Greenview Drive, El Dorado Hills, CA 95762;.

Project Agent/Engineer's Name and Address: CTA Engineering, 3233 Monier Circle, Rancho Cordova, CA 95742

Project Location: North side of Green Valley Road, approximately 3,000 feet east of the intersection with Silva Valley Road, in the El Dorado Hills area.

Assessor's Parcel Numbers: 126-070-22, -23 and -30 **Acres:** 28.18

Zoning: One-Acre Residential (R1A)

Section: 23 **T:** 10N **R:** 8E

General Plan Designation: High Density Residential (HDR)

Description of Project: The proposed project consists of the following requests:

1. Rezone the 28.18-acre parcel from One-Acre Residential (R1A) to One-Family Residential (R1);

2. Tentative Subdivision Map with phasing plan to create 49 single-family residential lots ranging in size from 10,141 sq. ft. to 62,449 square feet, two frontage landscape lots (A 14,233 square feet, and B 13,426 square feet), one 54,855 square foot lot (C) for open space, landscaping, drainage, and retaining walls, one 0.65-acre public roadway lot (Lot F), and two gates at the project entrances to Roads B1 and D; and

3. A Design Waiver is requested to allow the utilization of road-side ditches and asphaltic concrete (AC) dikes in lieu of curbs and gutters.

Surrounding Land Uses and Setting:

	Zoning	General Plan	Land Use/Improvements
Site	R1A	HDR	Residential/Vacant
North	RE-5	LDR	Residential/Single family residence
South	R1A/PA-20/RE-5	MDR	Residential/Single family residences
East	RE-5	LDR	Residential/Single family residence
West	R1A	MDR	Residential/Single family residences on approximately one-acre parcels, and the 11-acre LD S Church site.

Briefly describe the environmental setting: The 28.18-acre parcel varies in elevation from 720 to 860 feet above sea level. The highest point is in the northeastern portion of the parcel which slopes moderately from that area to the west. The majority of the parcel is grassland with approximately 2.90 acres of the 28.18 being covered

with oak canopy-the majority of which are single, mature specimens. Dutch Ravine flows intermittently through the eastern portion of the parcel from north to south and exits under Green Valley Road through a culvert. It is bound by existing roads on the north and south sides.
Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement) 1. Department of Transportation-Grading and Encroachment Permits 2. El Dorado County Air Quality Management District-AQMD Rules, Fugitive Dust Plan 3. El Dorado County Resource Conservation District-Review of Grading Permits 4. El Dorado Hills Fire Department-Review of applicable Conditions of Approval 5. El Dorado County Surveyor- Review of applicable Conditions of Approval, certification of final maps. 6. California Department of Fish and Game-Stream Alteration Permit 7. California Water Quality Control Board-Section 401 Permitting

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

X	Aesthetics		Agriculture and Forestry Resources		Air Quality
X	Biological Resources	X	Cultural Resources		Geology / Soils
	Greenhouse Gas Emissions		Hazards & Hazardous Materials		Hydrology / Water Quality
	Land Use / Planning		Mineral Resources	X	Noise
	Population / Housing		Public Services		Recreation
	Transportation/Traffic		Utilities / Service Systems	X	Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

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

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

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

Signature: _____ Date: 11-5-12

Printed Name: Tom Dougherty, Project Planner For: El Dorado County

Signature: _____ Date: 5 Nov. 2012

Printed Name: Peter N. Maurer, Principal Planner For: El Dorado County

PROJECT DESCRIPTION

Introduction

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts resulting from the proposed residential project. The project would allow the creation of 49 residential parcels.

Project Description

Request to rezone from One-Acre Residential (R1A) to One-Family Residential and Open Space-Planned Development (R1/OS-PD); and a Tentative Subdivision Map to create 49 residential lots, two frontage landscape lots, and one lot for open space, landscaping, drainage, and retaining walls .

Project Location and Surrounding Land Uses

The 28.18-acre site is located on the north side of Green Valley Road approximately 3,000 feet east of the intersection with Silva Valley Road, in the El Dorado Hills area. The project is located within the El Dorado-Hills Community Region Planning Concept Area. The surrounding land uses are predominantly existing single family residential development, with the exception to the north which is vacant land but with an approved Tentative Subdivision Map for single-family residential lots. There is an existing church facility adjoining the proposed project to the southwest.

Project Characteristics

1. Transportation/Circulation/Parking

   The northern portion of the project would be accessed from one proposed encroachment onto Malcolm Dixon Road, a County-maintained roadway, and from the east from one proposed encroachment onto the proposed "New Connection" road shown on the submitted Tentative Map. Interior roadways are proposed to lead to two courts within the project core area. "New Connection" road is proposed to connect Malcolm Dixon and Green Valley Roads. There is one 24-foot wide access road proposed for access to proposed Lots 47-49. The project would contribute to the Multi-Project Area of Benefit for the Malcolm Dixon Area Traffic Circulation Plan for off-site road improvements as listed in the conditions of approval.

   The project is proposed to create 49 residential lots, which would require two parking spaces per lot. Parking for each lot would be provided within private garages. No significant impacts to parking would be anticipated to occur as part of the project.

2. Utilities and Infrastructure

The project site is currently undeveloped. As part of the project, the extension of water and sewer utilities services would be required. The project would be required to connect to existing El Dorado Irrigation District water facilities in Green Valley Road and the existing sewer facilities to the west near the intersection of Allegheny and Malcolm Dixon Roads. The sewer improvements are proposed to occur within the existing road and public utility easement within Malcolm Dixon Road.

3. Construction Considerations

Construction of the project would consist of on and off-site road improvements and encroachment improvements, including grading and paving. The project would utilize custom grading for site lot development. The project applicant would be required to obtain permits for grading and encroachments from the Department of Transportation and obtain an approved fugitive dust mitigation plan from the Air Quality Management District.

A six-foot tall masonry sound wall would be constructed within proposed Lot C where it is proposed to adjoin the lots proposed along Green Valley Road as shown in the submitted noise analysis.

Project Schedule and Approvals

This Initial Study is being circulated for public and agency review for a 30-day period. Written comments on the Initial Study should be submitted to the project planner indicated in the Summary section, above.

Following the close of the written comment period, the Initial Study will be considered by the Lead Agency in a public meeting and will be certified if it is determined to be in compliance with CEQA. The Lead Agency will also determine whether to approve the project.

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is a fair argument that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of Mitigation Measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the Mitigation Measures, and briefly explain how they reduce the effect to a less than significant level.

5. CEQA Section 15152. Tiering- El Dorado County 2004 General Plan EIR

This Mitigated Negative Declaration tiers off of the El Dorado County 2004 General Plan EIR (State Clearinghouse Number 2009072001) in accordance with Section 15152 of the CEQA Guidelines. The El Dorado County 2004 General Plan EIR is available for review at the El Dorado County Development

Services Department located at 2850 Fairlane Court, Placerville, CA 95667. All determinations and impacts identified that rely upon the El Dorado County 2004 General Plan EIR analysis and all Mitigation Measures are identified herein. The following impact areas are tiering off the El Dorado County 2004 General Plan EIR:

Aesthetics and Air Quality.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a. the significance criteria or threshold, if any, used to evaluate each question; and
   b. the mitigation measure identified, if any, to reduce the impact to less than significant.

ENVIRONMENTAL IMPACTS

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character quality of the site and its surroundings?		X		
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Discussion: A substantial adverse effect to Visual Resources would result in the introduction of physical features that are not characteristic of the surrounding development, substantially change the natural landscape, or obstruct an identified public scenic vista.

a. **Scenic Vista:** The project site and vicinity is not identified by the County as a scenic view or resource (El Dorado County Planning Services, El Dorado County General Plan Draft EIR (SCH #2001082030), May 2003, Exhibit 5.3-1 and Table 5.3-1). There would be no impacts anticipated.

b. **Scenic Resources:** The project site is not within a State Scenic Highway. There are no trees or historic buildings that have been identified by the County as contributing to exceptional aesthetic value at the project site (California Department of Transportation, California Scenic Highway Program, Officially Designated State Scenic Highways, p.2 (http://www.dot.ca.gov/hq/LandArch/scenic/schwy1.html)). There would be no anticipated impacts.

c. **Visual Character:** The project would have views from the outside-in from similar residential neighborhoods with similar-sized lots from the east, west (residences and the church facility), and from future residences to the north. The views from the north, east, and south into proposed Lots 47-49 would have the ability to be buffered by the existing vegetation, the applicant proposed 30-foot setbacks along the west and north boundaries of those lots, and their large lot sizes (37,350 to 62,449 square feet). The views from Green Valley Road towards the rest of the project would include the masonry sound wall.

The project includes the following:

1. A six-foot tall masonry sound wall within Lot C and along the west boundary of Lot 38, and a portion of the east boundary of Lot 23;
2. A six-foot tall tubular metal fence and three-rail PVC fence within Lots A,and B; and
3. A six-foot tall solid wood fence along along the western boundary of Lots 1, 2 and 39-41, and southern boundary of Lots 46-46 and 1, as shown in Exhibits M and N.

A preliminary landscape plan (Attachment 4) demonstrates landscaping would be installed along the "New Connection" Road and Malcolm Dixon Roads within Lots A and B to buffer the views into the proposed subdivision. The proposed six-foot tall wooden fence proposed for the western portion of the project, as

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

well as the applicant's proposed 50-foot setback from that boundary within proposed Lots 1 and 2, would be anticipated to adequately buffer views from that side.

The view of the masonry wall from Green Valley Road would be a potentially significant visual impact. The landscape plan shows a combination of oak tree planting to comply with General Plan Policy 7.4.4.4, as well as other drought resistant plants but not a specific layout at this stage. In order to reduce the potentially significant impact of the view of the masonry wall from Green Valley Road to a less than significant level, the following mitigation measure is recommended:

Aesthetics-1: Landscaping for Aesthetics: Landscaping shall be provided along the perimeter six-foot tall masonry sound wall within Lot C, substantially consistent with what is shown in the Preliminary Landscape Plan dated January 6, 2012. The final landscape plan shall include vertical shielding of the masonry wall with vertical landscaping to include plants larger than one-gallon size. The indegenious oak trees required to mitigate to Policy 7.4.4.4, Option A requirements, may be of the sizes as stated in the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A) Amended October 12, 2007.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The final landscape plan shall be submitted to Planning Services for review and approval prior to issuance of the Building Permit for the sound wall. The applicant shall schedule a site visit with Planning for an inspection of the installed landscaping prior to permit final.

The DEIR for the General Plan had identified and examined the potential impacts that implementation of the General Plan would have to the visual character of the areas of the County. Section 5.3-2 of the *Executive Summary Table* in the General Plan EIR states that the County mitigate the potential significant impacts by designing new streets and roads within new developments to minimize visual impacts, preserve rural character, and ensure neighborhood quality to the maximum extent possible consistent with the needs of emergency access, on-street parking, and vehicular and pedestrian safety.

Mitigation in the form of General Plan polices have been developed to mitigate impacts to less than significant levels for impacts associated with aesthetic resources. Cumulative impacts were previously considered and analyzed. With review for consistency with General Plan Policies impacts would be anticipated to be less than significant for properties designated by the General Plan for high density residential uses. (See Attachment 4, Preliminary Landscape Plan, dated January 6, 2012, and Attachment 5, Masonry Sound Wall & Fence Exhibit dated May 2012).

d. **Light and Glare:** If approved as proposed, the creation of these 49 lots would allow new lighting by creating the potential for residential units on each lot. These impacts would not be expected to be any more then any typical residential lighting similar and typical to other subdivisions created within a land use area designated by the General Plan for High Density Residential uses within the County. Section 5.3-3 of the *Executive Summary Table* in the General Plan EIR states "the potential significant impacts would be mitigated by including design features, namely directional shielding for street lighting, parking lot lighting, and other significant lighting sources, that could reduce the effects from nighttime lighting." With exception to potential patio and garage entrance lighting, common area lighting is not proposed for this project. All lighting, including patio and garage entrance lighting would be required to meet the County lighting ordinance and must be shielded to avoid potential glare affecting day or nighttime views for those that live or travel through the area.

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

Mitigation in the form of General Plan polices have been developed to mitigate impacts to less than significant levels for impacts associated with lighting resources. Cumulative impacts were previously considered and analyzed. With full review with consistency with General Plan Policies, impacts would be less than significant.

FINDING: The project is not anticipated to significantly impact designated scenic highways, scenic viewpoints as well as outside-in views, and lighting impacts not normally anticipated from similar high density residential developments. As a result, there would be less than significant levels of impacts anticipated.

II. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by California Department of forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forrest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Locally Important Farmland (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				X
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Discussion: A substantial adverse effect to Agricultural Resources would occur if:

- There is a conversion of choice agricultural land to nonagricultural use, or impairment of the agricultural productivity of agricultural land;
- The amount of agricultural land in the County is substantially reduced; or
- Agricultural uses are subjected to impacts from adjacent incompatible land uses.

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

a. **Farmland Mapping and Monitoring Program:** The United States Department of Agriculture Soil Conservation Service Soil Survey, El Dorado Area, California, issued April of 1974 shows that the parcel contains AxD (Auburn very rocky silt loam with 2 to 30 percent slopes) soils. This soil types is not classified as unique, soils of local importance or either prime farmland, statewide important farmland. There would be no impacts.

b. **Williamson Act Contract and Agricultural Zoning:** The project does not adjoin any parcels zoned for agricultural use or designated as agricultural land uses by the General Plan. The property is not located within a Williamson Act Contract, would not conflict with existing zoning for agricultural use, and would not affect any properties under a Williamson Act Contract. There would be no impacts.

c. **Non-Agricultural Use:** The project does not adjoin any parcels zoned for agricultural use or designated as agricultural land uses by the General Plan. No conversion of agriculture land would occur as a result of the project. There would be no impacts.

d, e. **Loss of Forest land or Conversion of Forest land, Conversion of Prime Farmland or Forest Land:** Neither the General Plan nor the Zoning Ordinance designate the site as an important Timberland Preserve Zone and the underlying soil types are not those known to support timber production. As discussed above in Section a, there would be no loss or conversion of prime farmland as well. There would be no impacts.

FINDING: This project would not impact properties subject to a Williamson Act Contract. The location within a Community Region and land use designation of High Density Residential diminish the importance of preserving the land for agricultural purposes. For this "Agriculture" category, there would be no impacts.

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

Discussion: A substantial adverse effect on Air Quality would occur if:

- Emissions of ROG and No_x, will result in construction or operation emissions greater than 82lbs/day (See Table 5.2, of the El Dorado County Air Pollution Control District – CEQA Guide);

- Emissions of PM_{10}, CO, SO_2 and No_x, as a result of construction or operation emissions, will result in ambient pollutant concentrations in excess of the applicable National or State Ambient Air Quality Standard (AAQS). Special standards for ozone, CO, and visibility apply in the Lake Tahoe Air Basin portion of the County; or

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

- Emissions of toxic air contaminants cause cancer risk greater than 1 in 1 million (10 in 1 million if best available control technology for toxics is used) or a non-cancer Hazard Index greater than 1. In addition, the project must demonstrate compliance with all applicable District, State and U.S. EPA regulations governing toxic and hazardous emissions.

a. **Air Quality Plan:** El Dorado County has adopted the *Rules and Regulations of the El Dorado County Air Pollution Control District* (February 15, 2000) establishing rules and standards for the reduction of stationary source air pollutants (ROG/VOC, NOx, and O3). Any activities associated to the grading and construction of this project would pose a less than significant impact on air quality because the El Dorado County Air Quality Management District (AQMD) would require that the project implement a Fugitive Dust Mitigation (FDM) plan during grading and construction activities. Such a plan would address grading measures and operation of equipment to minimize and reduce the level of defined particulate matter exposure and/or emissions, anticipated to be below a level of significance.

b. **Air Quality Standards:** The project would create air quality impacts which may contribute to an existing or projected air quality violation during construction. Construction activities associated with the project include grading and site improvements, for roadway expansion, utilities, driveway, home, and building pad construction, and associated on-site activities. Construction related activities would generate PM10 dust emissions that would exceed either the state or federal ambient air quality standards for PM10. This is a temporary but potentially significant effect.

Operational air quality impacts would be minor, and would cause an insignificant contribution to existing or projected air quality violations. Source emissions would be from vehicle trip emissions, natural gas and wood combustion for space and water heating, landscape equipment, and consumer products. This is a less-than-significant impact.

The air quality assessment prepared for the project determined that the construction activities would be below the AQMD emission thresholds of significance of 82 pounds per day each of ROG or NOx. AQMD has reviewed the assessment and concurs with the analysis and that, as conditioned and with compliance with County Codes, the air quality impacts by the project would be anticipated to be less than significant.

c. **Cumulative Impacts:** The AQMD reviewed the *Wilson Estates Air Quality Impact Analysis and Greenhouse Gases* dated July 2011 prepared by for this project and determined that by implementing typical conditions that are included in the project permit, that the project would have a less than significant level of impact in this category. The conditions are implemented as part of a Fugitive Dust Plan (FDP) to be reviewed and approved by the AQMD prior to and concurrently with the grading, improvement, and/or building permit approvals would manage heavy equipment and mobile source emissions, as well as site disturbance and construction measures and techniques. In addition, the General Plan DEIR Section 5.11 addresses air quality from transportation sources, specifically those generated by vehicles that travel on roadways in the County, partially from US Highway 50 as a generator. Such source emissions have already been considered with the adopted 2004 General Plan and EIR. Mitigation in the form of General Plan polices have been developed to mitigate impacts to less than significant levels for impacts associated with air quality standards. Cumulative impacts were previously considered and analyzed. With review for consistency with General Plan Policies, impacts would be anticipated to be less than significant. (See Attachment 6, Wilson Estates Air Quality and Greenhouse Gases, PMC, July 2011, and Attachment 7, Wilson Estates Air Quality and Greenhouse Gases, PMC, October 2012).

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

d. **Sensitive Receptors:** The CEQA Guide identifies sensitive receptors as facilities that house or attract children, the elderly, people with illnesses, or others that are especially sensitive to the affects of air pollutants. Hospitals, schools and convalescent hospitals are examples of sensitive receptors. The AQMD reviewed the project and identified this site as not being within the asbestos review area. A church abuts the project site on the southwest side that is intermittently attended however, by implementing ADMD Rules 223, 223 – 1, a Fugitive Dust Control Plan, as well as implementing typical conditions for the development of the site as it relates to pollutant concentrations based on Environmental Management rules, regulations, and standards, the impacts associated with this category would be anticipated to be less than significant.

e. **Objectionable Odors.** Table 3-1 of the *El Dorado County APCD CEQA Guide* (February, 2002) does not list the proposed residential use as a use known to create objectionable odors. Impacts would be anticipated to be less than significant.

FINDING: The proposed project would not affect the implementation of regional air quality regulations or management plans. The project would result in increased emissions due to construction and operation; however existing regulations would reduce these impacts to a less-than-significant level. The proposed project would not cause substantial adverse effects to air quality, nor exceed established significance thresholds for air quality impacts, that were not anticipated by the General Plan for areas designated for high density residential uses. Standard conditions of approval, as required by the El Dorado County Air Quality Management District (AQMD), are included as part of the project permit. These conditions are typical for most projects throughout the County. As such, the proposed residential development of 49 units would have a less than significant impact in this category.

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

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				

Discussion: A substantial adverse effect on Biological Resources would occur if the implementation of the project would:

- Substantially reduce or diminish habitat for native fish, wildlife or plants;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a native plant or animal community;
- Reduce the number or restrict the range of a rare or endangered plant or animal;
- Substantially affect a rare or endangered species of animal or plant or the habitat of the species; or
- Interfere substantially with the movement of any resident or migratory fish or wildlife species.

a. **Special Status Species:** The project parcel does not fall within designated critical habitat or core areas for the Red-legged and Yellow-legged frog species. The project site is located within Rare Plant Mitigation Area 2 which designates areas not known to contain listed species but that are within the EID service area. A *Jurisdictional Delineation and Special Species Evaluation*, dated January 2009, and *Special Status Plant Surveys*, dated August 2011 were submitted for the project. The studies reported findings obtained from site assessments for the wetland delineation, wildlife habitat and species surveys, and general botanical surveys. The site assessment consisted of biologists walking the site, recording notes of species observed or signs of their presence, and assessing the habitats existing within the project site boundaries for the potential occurrence of special status species. The studies found that the site does not have soils derived from serpentine rock or gabbro soils that are known to support special status plants.

The studies reported potential habitat for some species of concern however, the results of field studies for the *Special Status Plant Surveys* performed on June 27 and August 2, 2011 reported that no special status plant species were found within the project parcel study area. (See Attachment 8, Special Status Plant Surveys, Gibson & Skordal, Inc., August 2011).

The project could have an impact on nesting raptors or other protected migratory birds by the estimated 0.20 acres of potential oak tree canopy removal. Depending on the timing of construction, site disturbance could result in disturbance of breeding and nesting activity of this species. According to the California Department of Fish and Game Code 3503, "take" of the nest or eggs of any bird is prohibited, except upon approval from the California Department of Fish and Game. Disturbance of active nests can be avoided during construction through appropriate measures. To the extent feasible, ground disturbance and removal of vegetation should be avoided during the typical breeding and nesting period for this species (approximately April through July). If construction activities cannot be avoided during the typical breeding season, the applicant would be required to retain a qualified biologist to conduct a pre-construction survey (approximately one week prior to construction) to determine presence/absence of active nests. If no nesting activities are detected within proposed work areas, construction activities may proceed. If, however, active nests are found, construction should be avoided until after the young have fledged from the nest and achieved independence, or upon approval from the California Department of Fish and Game. Impacts to biological resources would be anticipated to be less than significant with adherence to General Plan Policies, and the following mitigation incorporated into the project description:

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

BIO-1: Pre-construction Survey Required: If vegetation removal is conducted within the nesting period for most migratory bird species and nesting raptor species (between March 1 and August 15), a pre-construction survey for active bird nests shall be conducted by a qualified biologist. If vegetation removal activities are delayed or suspended more than one month after the pre-construction survey, the area shall be re-surveyed. If active bird nests are identified, vegetation removal in these areas shall be postponed until after the nesting season, or a qualified biologist has determined the young have fledged and are independent of the nest site. No known active nests shall be disturbed without a permit or other authorization from USFWS or CDFG.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall conduct all construction activities outside the nesting season or perform a pre-construction survey and obtain all necessary permits prior to initiation of construction activities. This requirement shall be placed on the grading plans. Planning Services shall review the surveys prior to issuance of a grading permit and/or removal of any trees within the project site.

b-c. **Riparian Habitat, Wetlands:** The *Jurisdictional Delineation and Special Species Evaluation* reported that approximately 0.0748 acre of Dutch Ravine was mapped within the study area. The stream was determined to be intermittent, and identified as a tributary to New York Creek which empties into Folsom Lake. The project proposes to install a headwall with an open-bottom drainage to span Dutch Ravine to permit construction of an access roadway for proposed Lots 47-49. Activities affecting streams would potentially require a permit from the U.S. Army Corps of Engineers, California Department of Fish and Game, as well as the California Water Quality Control Board. (See Attachment 9, Jurisdictional Delineation and Special Species Evaluation, Gibson & Skordal, Inc., January 2009, and Attachment 10U.S. Army Corps wetland Jurisdictional Determination dated August 23, 2011).

The project *Jurisdictional Delineation and Special Species Evaluation* was sent to the Army Corps, along with a letter from the project wetland consultants dated June 24, 2011, for review and verification. The Corps analyzed the project's proposed mitigations, development area, as well as any proposed potential impacts from a culvert in Dutch Ravine. They determined that no permit subject to Section 404 for the project would be required because the proposed plan straddles the creek effectively.

In addition to the Army Corps regulations, the project may also be regulated by potential Streambed Alteration Agreements to be obtained from California Department of Fish and Game (CDFG), if applicable, pursuant to Sections 1602 of the California Fish and Game Code, as well as a potential California Water Quality Certification, Section 401 permit from the Regional Water Quality Control Board. Those agencies would require review of the development plans prior to issuance of a grading and/or building permit. In regards to a potential Fish and Game Permit, as stated in the letter dated June 1, 2012 (Attachment 11), the project biologist determined that the proposed crossing of Dutch Ravine will be constructed so no work will be conducted within the jurisdictional channel but it will cover that portion of the channel with the 50-foot wide roadway easement area. The channel was determined not to be suitable habitat for any special status species, and its flow would not be impeded. However, because the channel would be partially covered, the biologist recommended that the applicant be required to purchase 300 feet of channel credits at a mitigation bank (six-feet wide and 50-feet in length, and implement best management practices to adequately offset impacts associated with the road crossing.

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

Appropriate storm water Best Management Practices (BMPs) would be required to be in place to catch runoff during the grading permit process to assure there would be no significant effect to the wetlands. The following is a list of examples of the BMPs that the project would be required to adhere to as a part of the grading permit requirements by County Code. The DOT Plan Checker will review the grading plan and verify that the plan includes BMPs consistent with the County's California Stormwater Pollution Prevention Plan issued by the State Water Resources Control Board, prior to grading permit issuance:

Erosion Control	Sediment Control	Tracking Control	Non Storm Water Management
o Hydroseeding	o Silt Fence	o Stabilized Construction Entrance	o Water Conservation Practices
o Straw Mulch	o Fiber Rolls	Waste Management	o Vehicle and Equipment Cleaning
o Geotextiles and Mats	o Gravel Bag Berm	o Material Delivery and Storage	o Vehicle and Equipment Maintenance
Erosion Control	o Street Sweeping and Vacuuming	o Material Use	Non Storm Water Management

The following Mitigation Measures are recommended to be included into the project conditions of approval in order to reduce the impacts to the Dutch Ravine creek area to a level that would be less than significant:

BIO-2: Streambed Alteration Agreement: A Streambed Alteration Agreement, pursuant to Fish and Game Code 1602, shall be obtained by the applicants, from the California Department of Fish and Game, if applicable, for the Road F Dutch Ravine stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation. The Agreement shall address the following to the satisfaction of the Department of Fish and Game:

The applicant will purchase 300 feet of channel credits at a mitigation bank (six-feet wide and 50-feet in length, and implement best management practices to adequately offset impacts associated with the road crossing. This shall be completed before a County grading permit is issued for the crossing.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall provide a copy of the 1602 Streambed Alteration Agreement to Development Services prior to issuance of the grading permit. If it has been determined by Fish and Game that said permit does not apply after their review of the development plans for the project, the applicant shall provide Planning Services with verification from Fish and Game that no Agreement is needed for the project, prior to issuance of a building and/or grading permit for the project area.

BIO-3: No Disturbance Buffer: A 50-foot setback line shall be shown on the Final Map that begins at all high-water marks or the outer boundary of any adjacent wetlands identified in the area identified in the submitted Jurisdictional Delineation, dated January 2009, and as determined by the Corps of Engineer's verified wetland delineation of waters of the United States. No development shall occur within the setback area. The identification shall be made on the Final Map, Site Plan Review, grading and building plans where applicable.

Monitoring Responsibility: Planning Services

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

Monitoring Requirement: Prior to filing of the Final Map, Site Plan Review (SPR), grading and/or building plan approval, Development Services shall verify that the identification has been be made on the Final Map, Site Plan Review, grading and building plans where applicable. The setback lines shall be shown on any submitted development plans submitted for the grading permit and Development Services shall verify this prior to issuance of any development permit.

Impact: The project could affect downstream water quality: The project has the potential to adversely affect water quality downstream, both during construction and during operation of the project. This impact would be potentially significant. The applicant would implement the following mitigation measures to ensure downstream water quality. Implementation of these measures will reduce downstream water quality impacts to less-than-significant levels:

BIO-4: Water Quality Certification: A Water Quality Certification, Section 401 permit, if applicable, shall be obtained by the applicant from the California Regional Water Quality Control Board for applicable project improvements. The Certificate shall include the following, subject to California Regional Water Quality Control Board approval:

a. The applicant will prepare a Storm Water Pollution Prevention Plan for approval. That plan will describe methods for ensuring downstream water quality during construction and will be implemented before construction begins.
b. Work areas will be separated by buffers and orange construction fencing to delineate the preserved riparian areas. No grading will be allowed within the fenced-off buffer zones.
c. Waste and construction materials will be placed where they will not run off into the stream, or they will immediately be removed off-site.
d. The project will include a Continuous Deflection Separation system to remove oil and other substances from runoff within the project area before it is discharged to Weber Creek. This system will be maintained by the property owner as described in the Contech Stormwater Solutions technical manuals.

Monitoring Responsibility: Planning Services

Monitoring Requirement: The applicant shall provide a copy of the Section 401 permit to Development Services prior to issuance of the grading permit. If it has been determined by the California Regional Water Quality Control Board that said permit does not apply after their review of the development plans for the project, the applicant shall provide Planning Services with confirmation from them of that determination prior to issuance of a building and/or grading permit for the project area. The Storm Water Pollution Prevention Plan shall be reviewed and approved by Building Services or DOT prior to issuance of a grading permit.

d. **Migration Corridors:** Review of the California Department of Fish and Game California Wildlife Habitat Relationship System indicates that there are no mapped critical deer migration corridors on the project site. The majority of the existing oak trees within the western approximately 85 percent of the project area are single mature indigenous blue oaks, typically standing alone-not part of a vegetative corridor. As discussed above, these individual specimens are typically important to migratory birds individually and a mitigation measure has been recommended to attempt to address that issue, in tandem with what Policy 7.4.4.4 allows, as discussed further below.

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

The primary vegetative corridor presumed to be used by wildlife species as a corridor would be that along the Dutch Ravine. This corridor would be preserved with 50-foot, non-building setbacks on both sides, and preserved as dictated by Fish and Game, and California Regional Water Quality Control Board processes as they directly apply, and as determined by those agencies. As conditioned, mitigated, and with adherence to County Code, impacts would be anticipated to be less than significant.

e. **Local Policies:** El Dorado County Code and General Plan Policies pertaining to the protection of biological resources would include protection of rare plants, setbacks to riparian areas, and mitigation of impacted oak woodlands. Rare plants were discussed above in the Special Status Species section.

General Plan Policy 7.3.3.4 requires a minimum non-development setback of 50 feet from intermittent streams These standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site or project-specific conditions supplied as part of the review for a specific project demonstrates that s different setback is necessary or would be sufficient to protect the particular riparian area. The submitted Tentative Map shows a 50-foot non-building setback from both sides of the Ordinary High Water Marks which will be required to be recorded on the final map.

As conditioned, mitigated and with adherence to County Codes, the project would incorporate "Best Management Practices" and Mitigation Measures to minimize impacts on the wetlands, and could be found to be consistent with the intent of El Dorado County General Plan Policy 7.3.3.4 and the Interim Interpretive Guidelines for that Policy.

Policy 7.4.4.4 establishes the native oak tree canopy retention and replacement standards. Impacts to oak woodlands have been addressed in the El Dorado County General Plan EIR, available for review online at http://edcgov.us/Government/Planning/General_Plan_Supporting_Documents.aspx,or at El Dorado County Planning Services office located at 2850 Fairlane Court, Placerville, CA, 95667. Mitigation in the form of General Plan policies has been developed to mitigate impacts to less than significant levels. In this instance, adherence to General Plan Policy 7.4.4.4 and measures contained within the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A), amended October 12, 2007 would mitigate impacts to oak woodland to less than significant levels.

The Preliminary Grading and Drainage Plan, and Tree Preservation Plan dated May 2012 (Attachment 21) shows the project area has 2.90 acres of the total 28.18 project acres covered in indigenous oak canopy which is ten percent of the project area. General Plan Policy 7.4.4.4, Option A, would therefore require the retention of 90 percent of the indigenous oak tree canopy for the project area which means the General Plan allows 10 percent of the 2.90 acres to be removed (up to 0.29 acres) and to be mitigated at a 1 to 1 ratio. The project would remove approximately 0.20 acres of indigenous oak tree canopy for road and lot development which is less than what is allowed to be removed. The majority of the site contains large, mature, single-specimen oak tree canopy, and the majority of those are single specimens that are proposed to be preserved during the grading proposed for development of the project infrastructure. The applicant has demonstrated in the Preliminary Landscape Plan dated January 6, 2012 (Attachment 4), that the project can provide 1 to 1 replacement plantings onsite within Lot C. That planting is required to be carried out in compliance with the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A). The project is conditioned that the final landscape/oak tree planting plan be reviewed and approved by Planning Services prior to issuance of any grading or building permit for the masonry wall/Lot C area. As conditioned, the project would be compliant with Policy 7.4.4.4, Option A.

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

f. **Adopted Plans**: This project, as designed, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be a less than significant impacts anticipated in this category.

FINDING: For the "Biological Resources" category, as conditioned, mitigated and with adherence to County Code, the thresholds of significance would not be anticipated to be exceeded.

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

Discussion: In general, significant impacts are those that diminish the integrity, research potential, or other characteristics that make a historical or cultural resource significant or important. A substantial adverse effect on Cultural Resources would occur if the implementation of the project would:

- Disrupt, alter, or adversely affect a prehistoric or historic archaeological site or a property or historic or cultural significant to a community or ethnic or social group; or a paleontological site except as a part of a scientific study;
- Affect a landmark of cultural/historical importance;
- Conflict with established recreational, educational, religious or scientific uses of the area; or
- Conflict with adopted environmental plans and goals of the community where it is located.

a-c. **Historic or Archeological Resources:** The submitted *Phase 1 Archeological Study of the Wilson Estates Project*, dated January 2011 reported that no prehistoric sites or artifacts were found within the project area other than foundations from the Charles Dixon Farm historic site. The study reported that the Charles Dixon Farm Site and Live Oak School historic sites existed primarily north of the subject project area and Malcolm Dixon Road, but had at one time included portions of the project which had been subject of archeological test excavations consisting of metal detection and surface scrapes. No tangible archeological deposits were found besides building foundations and the Study determined that the subject property does not appear to be a significant historical resource for the California Register of Historic Resources under Criterion 4. The Live Oak School building exists today but is not located within the proposed project area. However, the Study has recommended that the following mitigation measures be included to reduce potential impacts of finding any new artifacts during project grading that were not previously identified to a less than significant level:

Cultural Resources 1: During the course of grading activities within the perimeter of the Charles Dixon Farm Site as defined by Figure 1 of the *Phase 1 Archeological Study of the Wilson Estates Project*, dated January 2011, archeological monitoring shall occur. If previously unidentified or subsurface archeological

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

sites or features are discovered, work shall stop at that location and the discovery shall be examined for its potential significance and removed if deemed of scientific value, after which work can proceed once again.

Monitoring Responsibility: Planning Services and Applicant

Monitoring Requirement: A note shall be placed on the grading plans for this particular area of the project. Planning Services shall confirm that the mitigation has been included on the plans prior to issuance of any grading permit for this particular area of the project.

Cultural Resources 2: An interpretive sign shall be designed in consultation with the El Dorado County Historical Museum to commemorate the location of the location of the Charles Dixon Farm and the Live Oak School. The sign shall be located in an appropriate location near the site and along Malcolm Dixon Road.

Monitoring Responsibility: Planning Services and Applicant

Monitoring Requirement: The applicant shall provide Planning Services with proof this has been completed prior to approval and recordation of the final map.

d. **Human Remains:** There is a small likelihood of human remain discovery on the project site. During all grading activities, standard Conditions of Approval would be required that address accidental discovery of human remains. Impacts would be anticipated to be less than significant.

FINDING: No significant cultural resources were identified on the project site. Standard conditions of approval would be required with requirements for accidental discovery during project construction. This project would be anticipated to have a less than significant impact within the Cultural Resources category.

VI. GEOLOGY AND SOILS. *Would the project:*				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	

VI. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

Discussion: A substantial adverse effect on Geologic Resources would occur if the implementation of the project would:

- Allow substantial development of structures or features in areas susceptible to seismically induced hazards such as groundshaking, liquefaction, seiche, and/or slope failure where the risk to people and property resulting from earthquakes could not be reduced through engineering and construction measures in accordance with regulations, codes, and professional standards;

- Allow substantial development in areas subject to landslides, slope failure, erosion, subsidence, settlement, and/or expansive soils where the risk to people and property resulting from such geologic hazards could not be reduced through engineering and construction measures in accordance with regulations, codes, and professional standards; or

- Allow substantial grading and construction activities in areas of known soil instability, steep slopes, or shallow depth to bedrock where such activities could result in accelerated erosion and sedimentation or exposure of people, property, and/or wildlife to hazardous conditions (e.g., blasting) that could not be mitigated through engineering and construction measures in accordance with regulations, codes, and professional standards.

a. **Seismic Hazards:**

i) According to the California Department of Conservation, Division of Mines and Geology, there are no Alquist- Priolo fault zones within El Dorado County. The nearest such faults are located in Alpine and Butte Counties. Impacts would be anticipated to be less than significant.

ii) The potential for seismic ground shaking in the project area would be considered less than significant. Any potential impacts due to seismic impacts would be addressed through compliance with the Uniform Building Code. All structures would be built to meet the construction standards of the UBC for the appropriate seismic zone. Impacts would be anticipated to be less than significant.

iii) El Dorado County is considered an area with low potential for seismic activity. The potential areas for liquefaction on the project site would be the wetlands which would be filled as part of the project. Impacts would be anticipated to be less than significant.

iv) All grading activities onsite would be required to comply with the El Dorado County Grading, Erosion Control and Sediment Ordinance. Compliance with the Ordinance would be anticipated to reduce potential landslide impacts to less than significant levels.

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

b, c **Soil Erosion, Geologic Hazards:** According to the Soil Survey for El Dorado County, the soil type is classified as AxD (Auburn very rocky silt loam with 2 to 30 percent slopes) which has slow to medium surface runoff and slight to moderate erosion hazards.

All grading activities exceeding 250 cubic yards of graded material or grading completed for the purpose of supporting a structure must meet the provisions contained in the *County of El Dorado - Grading, Erosion, and Sediment Control Ordinance* Adopted by the County of El Dorado Board of Supervisors, August 10, 2010 (Ordinance #4949). This ordinance is designed to limit erosion, control the loss of topsoil and sediment, limit surface runoff, and ensure stable soil and site conditions for the intended use in compliance with the El Dorado County General Plan. Project grading and improvements would occur on-site and off-site. Improvements that would be required for the project for access roads and driveway, water and sewer line connections. All grading plans and activities would be designed to address pre-and post construction Best Management Practices (BMPs) for erosion and sediment controls. As a result, impacts within this category would be anticipated to be less than significant.

d. **Expansive Soils:** All grading activities would comply with the El Dorado County Grading, Erosion Control and Sediment Ordinance. According to the *Soil Survey of El Dorado Area, California, 1974* Based on the *Soil Survey of El Dorado Area, CA*, issued April 1974, the area where development would occur has a stable soil type that has a low shrink-swell capacity and anticipated to be suitable for residential development. There are no fault lines known to exist within the property and the project is not located within a seismic fault buffer. Any future development of the property must be designed to conform to the *County of El Dorado Grading, Erosion, and Sediment Control Ordinance* and the *Uniform Building Code (UBC)*. Impacts would be anticipated to be less than significant.

e. **Septic Capability.** The project would be served by EID for wastewater services. There would be no impacts related to septic systems.

FINDING: A review of the soils and geologic conditions of the property finds that the site comprises of stable soils that would be suitable for the type of development proposed. The site has areas of variable slopes with different degrees of steepness, including some of which that are 30 percent and steeper along Dutch Ravine. All grading would be designed to meet *County of El Dorado Grading and Drainage* standards. Any future construction of residential development would be designed to meet the *Uniform Building Code (UBC)* Seismic Safety Zone 3 construction standards that would apply to residential development. In this category, the threshold of impacts would not be anticipated to be exceeded.

VII. **GREENHOUSE GAS EMISSIONS.** *Would the project:*				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

a-b. **Generate Greenhouse Gas Emissions and Policy:**

Background/Science

Cumulative greenhouse gases (GHG) emissions are believed to contribute to an increased greenhouse effect and global climate change, which may result in sea level rise, changes in precipitation, habitat, temperature, wildfires, air

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

pollution levels, and changes in the frequency and intensity of weather-related events. While criteria pollutants and toxic air contaminants are pollutants of regional and local concern (see Section III. Air Quality above); GHG are global pollutants. The primary land-use related GHG are carbon dioxide (CO_2), methane (CH_4) and nitrous oxides (N_2O). The individual pollutant's ability to retain infrared radiation represents its "global warming potential" and is expressed in terms of CO_2 equivalents; therefore CO_2 is the benchmark having a global warming potential of 1. Methane has a global warming potential of 21 and thus has a 21 times greater global warming effect per metric ton of CH_4 than CO_2. Nitrous Oxide has a global warming potential of 310. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e/yr$). The three other main GHG are Hydroflourocarbons, Perflourocarbons, and Sulfur Hexaflouride. While these compounds have significantly higher global warming potentials (ranging in the thousands), all three typically are not a concern in land-use development projects and are usually only used in specific industrial processes.

GHG Sources

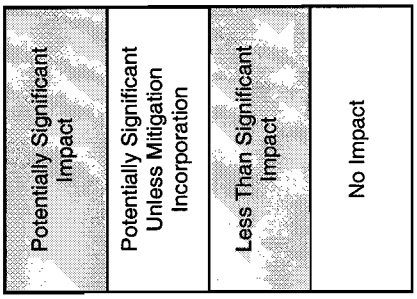
The primary man-made source of CO_2 is the burning of fossil fuels; the two largest sources being coal burning to produce electricity and petroleum burning in combustion engines. The primary sources of man-made CH_4 are natural gas systems losses (during production, processing, storage, transmission and distribution), enteric fermentation (digestion from livestock) and landfill off-gassing. The primary source of man-made N_2O is agricultural soil management (fertilizers), with fossil fuel combustion a very distant second. In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70% of countywide GHG emissions). A distant second are residential sources (approximately 20%), and commercial/industrial sources are third (approximately 7%). The remaining sources are waste/landfill (approximately 3%) and agricultural (<1%).

Regulation

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the *California Climate Solutions Act of 2006* (Stats. 2006, ch. 488) (Health & Safety Code, § 38500 et seq.). AB 32 requires a statewide GHG emissions reduction to 1990 levels by the year 2020. AB 32 requires the California Air Resources Board (CARB) to implement and enforce the statewide cap. When AB 32 was signed, California's annual GHG emissions were estimated at 600 million metric tons of CO_2 equivalent ($MMTCO_2e$) while 1990 levels were estimated at 427 $MMTCO_2e$. Setting 427 $MMTCO_2e$ as the emissions target for 2020, current (2006) GHG emissions levels must be reduced by 29%. CARB adopted the AB 32 Scoping Plan[1] in December 2008 establishing various actions the state would implement to achieve this reduction. The Scoping Plan recommends a community-wide GHG reduction goal for local governments of 15%.

In June 2008, the California Governor's Office of Planning and Research's (OPR) issued a Technical Advisory[2] providing interim guidance regarding a proposed project's GHG emissions and contribution to global climate change. In the absence of adopted local or statewide thresholds, OPR recommends the following approach for analyzing GHG emissions: Identify and quantify the project's GHG emissions, assess the significance of the impact on climate change; and if the impact is found to be significant, identify alternatives and/or Mitigation Measures that would reduce the impact to less-than-significant levels.[3]

[1] AB 32 Scoping Plan: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf
[2] OPR Technical Advisory: CEQA and Climate Change: http://opr.ca.gov/docs/june08-ceqa.pdf
[3] California Energy Commission. 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.* (Staff Final Report). http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF



Analysis Methodology

PMC prepared an updated Air Quality and Greenhouse Gas Impact Analysis dated September 2012 for the proposed project, which included the project's potential GHG emissions. The study used the California Emissions Estimation Model (CalEEMod) version 2011.1.1 for quantification of project-related GHG and criteria pollutant emissions. The study found the project's estimated GHG emissions resulting from both construction and operations would equal 949 metric tons of CO_2e per year.

El Dorado County Air Quality Management District (EDCAQMD) reviewed the applicant's Air Quality and Greenhouse Gas Impact Analysis and concurs with its findings and conclusions.

Impact Significance Criteria

CEQA does not provide clear direction on addressing climate change. It requires lead agencies identify project GHG emissions impacts and their "significance," but is not clear what constitutes a "significant" impact. As stated above, GHG impacts are inherently cumulative, and since no single project could cause global climate change, the CEQA test is if impacts are "cumulatively considerable." Not all projects emitting GHG contribute significantly to climate change. CEQA authorizes reliance on previously approved plans (i.e., a Climate Action Plan (CAP), etc.) and mitigation programs adequately analyzing and mitigating GHG emissions to a less than significant level. "Tiering" from such a programmatic-level document is the preferred method to address GHG emissions. El Dorado County does not have an adopted CAP or similar program-level document; therefore, the project's GHG emissions must be addressed at the project-level.

Unlike thresholds of significance established for criteria air pollutants in EDCAQMD's *Guide to Air Quality Assessment* (February 2002) ("CEQA Guide"),[4] the District has not adopted GHG emissions thresholds for land use development projects. In the absence of County adopted thresholds, EDCAQMD recommends using the adopted thresholds of other lead agencies which are based on consistency with the goals of AB 32. Since climate change is a global problem and the location of the individual source of GHG emissions is somewhat irrelevant, it's appropriate to use thresholds established by other jurisdictions as a basis for impact significance determinations. Projects exceeding these thresholds would have a potentially significant impact and be required to mitigate those impacts to a less than significant level. Until the County adopts a CAP consistent with CEQA Guidelines Section 15183.5, and/or establishes GHG thresholds, the County will follow an interim approach to evaluating GHG emissions utilizing significance criteria adopted by the San Luis Obispo Air Pollution Control District (SLOAPCD) to determine the significance of GHG emissions.

These thresholds are summarized below:

Significance Determination Thresholds	
GHG Emission Source Category	**Operational Emissions**
Non-stationary Sources	1,150 $MTCO_2e$/yr OR 4.9 MT CO_2e/SP/yr
Stationary Sources	10,000 $MTCO_2e$/yr

SP = service population, which is resident population plus employee population of the project

[4] EDCAQMD CEQA Guide:
http://edcgov.us/Government/AirQualityManagement/Guide_to_Air_Quality_Assessment.aspx

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

Project Emissions Analysis

The project site contains approximately ten percent (2.9 acres) tree canopy with the remainder grassland. Development of the site with 49 single family dwellings and associated infrastructure would result in uses typically associated with a residential subdivision located within a Community Region Planning Concept area. The project does not include a stationary source of pollution, {i.e. a wastewater treatment facility, gas station, dry cleaner, etc.} which would be subject to EDCAQMD Permitting Rules.[5] The proposed project would contribute to increases of GHG emissions primarily from motor vehicles, and- energy usage.

The proposed project's short-term construction-related GHG emissions and long-term operational project GHG emissions were estimated using CalEEMod. The assumed project operational year used in the model is 2013.

Short-Term (Construction) GHG Emissions

Estimated increases in GHG emissions associated with construction of the proposed project are summarized below

Unmitigated Construction GHG Emissions	
Year	**CO2 emissions (MTCO2*e*)**
2013	330.11
Source: CalEEMod Version 2011.1.1	

Based on the modeling, short-term unmitigated emissions of GHG associated with construction of the proposed project are estimated at 330.11 $MTCO_2e/yr$. Construction GHG emissions are a one-time release and, therefore, typically not expected to generate a significant contribution to global climate change.

Long-Term (Operational) GHG Emissions

The long-term project operational GHG emissions estimate incorporates potential area source and vehicle emissions, utility, water usage, wastewater and solid waste generation emissions. In order to present a worst-case scenario, the proposed project's construction-related GHG emissions have been amortized over the lifetime of the proposed project (in this case, 30 years) and included with the operational GHG emissions. Estimated project GHG emissions are summarized below.

Unmitigated Operational GHG Emissions	
Year	**Annual CO2 emissions (MTCO2*e*)**
Annual Operational GHG Emissions	938.49
Total Construction GHG Emissions[1]	11
Total GHG Emissions	**949**
[1] Construction GHG emissions are a one-time release; however, the project's construction GHG emissions have been amortized over a 30-year period (i.e., the approximate lifetime of the proposed project) and added to the annual operational GHG emissions in order to present an absolute worst-case scenario. Because construction would occur for only one year, assuming construction emissions occur each year presents an exaggerated total value for operational GHG emissions. *Source: CalEEMod Version 2011.1.1*	

[5] EDCAQMD Rules: http://www.arb.ca.gov/drdb/ed/cur.htm

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

The proposed project's total unmitigated GHG impacts are 949 $MTCO_2e/yr$, which does not exceed the established 1,150 $MTCO_2e/yr$ threshold. Therefore, project GHG impacts would be less than significant, and no further mitigations would be required.

Conclusion

Short-term construction GHG emissions are a one-time release of GHG and are not expected to significantly contribute to global climate change over the lifetime of the proposed project. Construction emissions have been included with the operational emissions in order to present a worst-case scenario. While the project does not require GHG emissions mitigation, the project does incorporate various features consistent with those mitigation measures suggested by the Office of the Attorney General and the California Air Pollution Control Officers Association (CAPCOA) such as providing open space. Finally, future structural development of the site will be required to comply with the 2010 California Green Building Standards Code (CALGreen Code), which includes measures to increase the energy efficiency of homes. Therefore, the proposed project's GHG emissions would be less than significant. (See Attachment 6, Wilson Estates Air Quality and Greenhouse Gases, PMC, July 2011, and Attachment 7 Wilson Estates Air Quality and Greenhouse Gases, PMC, October 2012).

FINDING: For this "Greenhouse Gas Emissions" category, as conditioned, and with adherence to County Code, impacts would be anticipated to be less than significant.

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

VIII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	

Discussion: A substantial adverse effect due to Hazards or Hazardous Materials would occur if implementation of the project would:

- Expose people and property to hazards associated with the use, storage, transport, and disposal of hazardous materials where the risk of such exposure could not be reduced through implementation of Federal, State, and local laws and regulations;
- Expose people and property to risks associated with wildland fires where such risks could not be reduced through implementation of proper fuel management techniques, buffers and landscape setbacks, structural design features, and emergency access; or
- Expose people to safety hazards as a result of former on-site mining operations.

a-b. **Hazardous Materials:** The project may involve transportation, use, and disposal of hazardous materials such as construction materials, paints, fuels, landscaping materials, and household cleaning supplies. The use of these hazardous materials would only occur during construction. Any uses of hazardous materials would be required to comply with all applicable federal, state, and local standards associated with the handling and storage of hazardous materials. Prior to any use of hazardous materials, the project would be required to obtain a Hazardous Materials Business Plan through the Environmental Health- Hazardous Waste Division of El Dorado County. The impacts would be anticipated to be less than significant.

c. **Hazardous Materials near Schools:** The residential project would not directly allow any operations that would use acutely hazardous materials or generate hazardous air emissions. There are no schools within one-quarter mile of the project. The closest school to the project site is the Jackson Elementary School, located approximately 5,000 feet to the southwest. There is a church facility abutting the project to the southwest which intermittently hosts church-related classes. The residential project is not anticipated to emit significant levels of hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. The site grading may cause temporary emissions and dust from construction vehicles however, by implementing ADMD Rules 223, 223 – 1, a Fugitive Dust Control Plan, as well as implementing typical conditions for the development of the site as it relates to pollutant concentrations based on Environmental Management rules, regulations, and standards, the temporary impacts associated with this category would be anticipated to be less than significant.

d. **Hazardous Sites:** The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. (California Department of Toxic Substances Control, Hazardous Waste and Substances Site List (Cortese List), http://www.dtsc.ca.gov/database/Calsites/Cortese_List). No activities that could have resulted in a release of hazardous materials to soil or groundwater at the subject site are known to have occurred. There would be no direct impacts anticipated.

e. **Aircraft Hazards:** The project site is not within any airport safety zone or airport land use plan area. There would be no impacts anticipated.

f. **Private Airstrips:** There are no private airstrips in the vicinity of the project site. There would be no impacts anticipated.

g. **Emergency Plan:** The proposed project would not physically interfere with the implementation of the County adopted emergency response and/or evacuation plan for the project area. The Fire Department reviewed the project and has conditioned it to insure safe emergency access. Impacts would be anticipated to be less than significant.

h. **Wildfire Hazards:** The project site is in an area of moderate hazard for wildland fire pursuant to Figure V.4-2 of the 1996 General Plan Draft EIR and Figure 5.8-4 of the 2004 General Plan Draft EIR. Compliance with the conditions required by the El Dorado Hills Fire Department, compliance with the approved Fire Safe Plan dated September 2, 2011, and implementation of California Building Codes, would be anticipated to reduce the impacts of wildland fire to a less than significant level. (See Attachment 15, Wildland Fire Safe Plan, William Draper, Registered Professional Forester #898, dated September 2, 2011).

FINDING: The proposed project would not expose the area to hazards relating to the use, storage, transport, or disposal of hazardous materials. Any proposed use of hazardous materials would be subject to review and approval of a Hazardous Materials Business Plan issued by Environmental Management. The project includes conditions of approval and an approved Fire Safe Plan anticipated to reduce potential hazards relating to wild fires. For this 'Hazards and Hazardous Materials' category, impacts would anticipated to be less than significant.

IX. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?			X	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or -off-site?			X	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X

IX. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j. Inundation by seiche, tsunami, or mudflow?				X

Discussion: A substantial adverse effect on Hydrology and Water Quality would occur if the implementation of the project would:

- Expose residents to flood hazards by being located within the 100-year floodplain as defined by the Federal Emergency Management Agency;
- Cause substantial change in the rate and amount of surface runoff leaving the project site ultimately causing a substantial change in the amount of water in a stream, river or other waterway;
- Substantially interfere with groundwater recharge;
- Cause degradation of water quality (temperature, dissolved oxygen, turbidity and/or other typical stormwater pollutants) in the project area; or
- Cause degradation of groundwater quality in the vicinity of the project site.

a. **Water Quality Standards:** Project related construction activities would be required to adhere to the El Dorado County Grading, Erosion Control and Sediment Ordinance which would require Best Management Practices (BMP's) to minimize degradation of water quality during construction.

Any grading and improvement plans required by the El Dorado County Department of Transportation (DOT) and/or Building Services would be prepared and designed to meet the *County of El Dorado Grading, Erosion and Sediment Control Ordinance*. These standards require that erosion and sediment control be implemented into the design of the project. Combined with the design standards outlined by the *El Dorado Design and Improvement Standards Manual (DISM)*, as well as the *Off-Street Parking and Loading Ordinance*, all stormwater and sediment control methods required by the ordinance would be implemented and engineered correctly for the final design, including those necessary for site grading and drainage facilities. Grading and drainage designs would be designed pursuant to a project specific Storm Water Mitigation Plan (SWMP). This would address Storm Water Prevention and Pollution Program (SWPPP) standards in order to adhere to the state requirements, as well as the federal, National Pollution Discharge Elimination System (NPDES) requirements for water quality and water discharge. As a result, impacts would be anticipated to be less than significant.

b. **Groundwater Supplies:** The project would connect to public water and would not utilize any groundwater as part of the project. There is no known evidence that the project would substantially reduce or alter the quantity of groundwater in the vicinity, or materially interfere with groundwater recharge in the area of the proposed project. Construction activities may have a short-term impact as a result of groundwater discharge however adherence to the Grading Ordinance would reduce impacts to a less than significant level.

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

c, d. **Drainage Patterns:** All grading and drainage activities would be required to implement *El Dorado County Grading, Erosion and Sediment Control Ordinance* standards to insure that grading and/or ground disturbance include proper designs that would reduce and/or eliminate run-off pre-and post construction. Should the backyards of the higher lots drain to the backyards of the lower lots, interceptor drains would be necessary and required and should be shown on the improvement plans. Offsite drainage easements would need to be obtained for any offsite drainage. All stair-step effects from grading would be required to be minimized through the use of Contour Grading. The final drainage plan would be required to be designed to meet the *El Dorado County Grading Erosion and Sediment Control Ordinance*. As conditioned, and with adherence to County Code, there would be less than significant impacts anticipated in these categories.

e. **Stormwater Runoff:** The project would alter drainage patterns due to grading activities and road improvements. Stormwater runoff has the potential to increase due to the introduction of impervious surfaces into areas not previously developed. Primary increases in runoff would be attributed to road surfaces, and the future single-family dwellings and supporting infrastructure. The rate of surface runoff from development would be minimized through the application review process. The access roads and lot pad areas would require modifications to comply with DOT and Fire Code regulations, and adherence to Resource Conservation District Best Management Practices.

The Drainage Manual Sections 1.3 & 1.4 requires that a project mitigate for increased runoff. The pre-project runoff and post-project 10-year flows must be equal or post-project flows must be less. If post-project flows exceed pre-project flows, the project must incorporate detention for the stormwater drainage. An area would be required by DOT to be set aside for stormwater detention due to stormwater runoff to assure stormwater is handled as discussed above. The project includes a proposed detention pond for the southwestern-most project boundary corner. The project grading and drainage plan has been reviewed by DOT and conditions of approval have been added to the project. As conditioned by DOT, and with adherence to County Code, impacts would be anticipated to be reduced to less than significant levels. (See Attachment 13, Revised Drainage Report Wilson Estates, CTA Engineering and Surveying, July 2012).

f. **Degradation of Water Quality:** The project would not be anticipated to result in substantial degradation of water quality in either surface or sub-surface water bodies in the vicinity of the project area. Stormwater and sediment control measures outlined by the *Grading, Erosion and Sediment Control Ordinance* that implement a project specific Storm Water Mitigation Plan (SWMP), the state's Storm Water Pollution and Prevention Program (SWPPP) and National Pollutant Discharge Elimination Systems (NPDES) would be required to be designed with grading and drainage plans. The designs would also include and implement pre- and post- construction Best Management Practices (BMPs), as well as permanent drainage facilities, in order to address the issue of water quality. In addition, as discussed above in the *Biological Resources* section above, a 50-foot non-building setback line would be required from the high-water marks surrounding Dutch Ravine. As conditioned, mitigated, and with adherence to County Code, there would be less than significant impacts anticipated.

g-j. **Flood-related Hazards:** The project site is not located within any mapped 100-year flood areas and would not result in the construction of any structures that would impede or redirect flood flows. No dams are located in the project area which would result in potential hazards related to dam failures. The risk of exposure to seiche, tsunami, or mudflows would be remote. There would be no impacts anticipated.

FINDING: The drainage facilities on and off-site would be conditioned to have adequate capacity for the run-off that would be associated to the project. Water would be provided for this project by connections to the EID system, as well as adequate capacity to connect to the existing EID septic facility system. All grading, drainage, to include

BMPs for pre-and-post-construction for erosion and sediment controls, would be incorporated into the final grading and drainage design for the project. As conditioned, mitigated, and with adherence to County Code, impacts within this category would be anticipated to be less than significant.

X. **LAND USE PLANNING.** *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Physically divide an established community?			X	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

Discussion: A substantial adverse effect on Land Use would occur if the implementation of the project would:

- Result in the conversion of Prime Farmland as defined by the State Department of Conservation;
- Result in conversion of land that either contains choice soils or which the County Agricultural Commission has identified as suitable for sustained grazing, provided that such lands were not assigned urban or other nonagricultural use in the Land Use Map;
- Result in conversion of undeveloped open space to more intensive land uses;
- Result in a use substantially incompatible with the existing surrounding land uses; or
- Conflict with adopted environmental plans, policies, and goals of the community.

a. **Established Community:** The project would not create any physical divisions of an established community. The project area is part of the El Dorado Hills Community Region and is designated by the General Plan for High Density Residential (HDR) land uses. By rezoning the project parcel to R1, the project would provide an appropriate density of single-family residential development in an area intended for HDR land uses. The locations of the new lots consider the sensitive environmental resources that exist on the property, including the migratory corridor and riparian habitat. The density and pattern of parcel development for the project vicinity has been established and this project is consistent and compatible with other established areas similarly designated by the General Plan within the El Dorado Hills Community Region. Impacts would be less than significant.

b. **Land Use Consistency:** The three parcels are currently zoned One-Acre Residential (R1A) which would be inconsistent with the High Density Residential land use designation and therefore, a rezone request from to R1 is requested. The proposed rezone, and tentative subdivision map, as conditioned, are consistent with the specific, fundamental, and mandatory land use development goals, objectives, and policies of the General Plan. The rezone would create zoning consistent with the existing land use designation of HDR, and as proposed, could allow residential development consistent with the R1 development standards contained within the El Dorado County Zoning Ordinance.

c. **Habitat Conservation Plan:** There are no adopted habitat conservation plans or natural community plans within the project vicinity. Impacts are less than significant. As noted in Item IV (Biological Resources), the project site is located in an ecological preserve mitigation area established for the Pine Hill rare plants

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

or red-legged frog core area. The project would not conflict with any known habitat conservation plan. Impacts would be less than significant.

FINDING: With an approved rezone, the proposed use of the land would be consistent with the General Plan policies for high density residential uses. With that approval, there would be no anticipated significant impact from the project due to a conflict with the General Plan or zoning designations for use of the property. For this "Land Use" category, the thresholds of significance are not anticipated to be exceeded.

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

Discussion: A substantial adverse effect on Mineral Resources would occur if the implementation of the project would:

- Result in obstruction of access to, and extraction of mineral resources classified MRZ-2x, or result in land use compatibility conflicts with mineral extraction operations.

a, b. **Mineral Resources:** The project site is not located within a Mineral Resource Zone (MRZ) as mapped by the State of California Division of Mines and Geology and is not classified or affected by any Mineral Resource overlays of the El Dorado County General Plan.

The western portion of El Dorado County is divided into four, 15 minute quadrangles (Folsom, Placerville, Georgetown, and Auburn) mapped by the State of California Division of Mines and Geology showing the location of Mineral and Resource Zones (MRZ). Those areas which are designated MRZ-2 contain discovered mineral deposits that have been measured or indicate reserves that have been identified and calculated. Land in this category is considered to contain mineral resources of known economic importance to the County and/or State. Review of the mapped areas of the County indicates that this site does not contain any mineral resources of known local or statewide economic value. There would be no impacts anticipated.

FINDING: There are no known mapped mineral resources or deposits on this property. No known impacts to energy and mineral resources are anticipated with the proposed project either directly or indirectly.

XII. NOISE. *Would the project result in:*				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	

XII. NOISE. *Would the project result in:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise level?			X	
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	

Discussion: A substantial adverse effect due to Noise would occur if the implementation of the project would:

- Result in short-term construction noise that creates noise exposures to surrounding noise sensitive land uses in excess of 60dBA CNEL;
- Result in long-term operational noise that creates noise exposures in excess of 60 dBA CNEL at the adjoining property line of a noise sensitive land use and the background noise level is increased by 3dBA, or more; or
- Results in noise levels inconsistent with the performance standards contained in Table 6-1 and Table 6-2 in the El Dorado County General Plan.

a. **Noise Exposures:** Noise from Transportation Sources: Table 6-1 of the General Plan provides details for projects subject to maximum allowable noise exposures from a transportation source. Table 5.10-8 of the Draft Environmental Impact Report, May 2003, lists level specifications for the portion of Green Valley Road, from Salmon Falls Road to Deer Valley Road. In order to reduce the outdoor exposure within the area of the proposed residences to noise levels that would meet the 65 dBA levels defined in Table 6-1, a 389.5-foot, non-building setback would be required, measured from the centerline of the near-travel lane. To reach the 60dBA level, a setback of 837.1 feet would be required. This setback restriction would include pools as well.

The following General Plan Policies apply to mitigating noise impacts from transportation sources upon new residential development. Policy 6.5.1.3 states that noise mitigation measures are required to achieve the standards of Tables 6-1 and 6-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings. Policy 6.5.1.8 states that new development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6 1.

The applicants have submitted an Environmental Noise Assessment dated May 3, 2012 (Attachment 14) which analyzed the noise scenario in the context of the project proposal. That Assessment found that future

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

Green Valley Road traffic noise levels at the outdoor activity areas (backyards) of the Wilson Estates project site are expected to exceed the exterior El Dorado County traffic noise level standard. As a means of achieving compliance with the exterior standard, 6-foot high noise barriers were recommended at the locations depicted in Figure 1 of the Noise Assessment. As a result, Green Valley Road traffic noise exposure at the outdoor activity areas (backyards) would be expected to be less than 60 dB Ldn. The Assessment found that the barriers should be constructed of concrete or masonry block, or precast concrete. Wood was not recommended due to eventual warping and shrinking of materials which results in openings and cracks which compromise the barrier longevity. The applicant has included a masonry sound wall in the project proposal which is shown in Attachment 5.

The Assessment estimated that future (2035) traffic noise exposure from Green Valley Road may be as high as 66 dB Ldn at second-floor building facades facing the roadway. These facades would not benefit from topographic shielding or significant ground absorption unlike ground-floor receivers, and would therefore experience incrementally higher noise exposure. The Assessment found that standard residential construction would provide a minimum exterior-to-interior noise level reduction of 25 dB with windows and exterior doors closed, interior noise exposure from future (2035). Green Valley Road traffic may be as high as 38 dB Ldn and 41 dB Ldn within the closest first-floor and second-floor project rooms, respectively. Therefore, future traffic noise exposure within project dwellings would not be expected to exceed the applicable 45 dB Ldn limit. The Assessment assumed that all project dwellings would be provided with appropriately designed mechanical systems so that windows and exterior doors may be closed when needed for noise insulation.

The following Mitigation Measure is recommended to be included into the project conditions of approval to reduce the noise impacts to a less than significant level:

Noise 1: A six-foot high noise barrier shall be constructed in compliance with the Environmental Noise Assessment Wilson Estates, Bollard and Associates, May 3, 2012. The barrier shall be constructed of concrete or masonry block, or precast concrete. The wall shall be constructed and located as shown in the Masonry Sound Wall & Fence Exhibit dated May 2012, and shall not result in the removal of oak trees.

Monitoring Responsibility: Planning Services and Applicant

Monitoring Requirement: Planning Services shall review the final development plan for the construction of the wall prior to issuance of the building and/or grading permit. Planning Services shall confirm that the wall has been constructed in compliance with this mitigation measure prior to building permit final, which shall occur prior to approval and recordation of the final map.

b. **Ground borne Shaking:** The project may generate ground borne vibration or shaking events during project construction. These potential impacts would be limited to project construction. Adherence to the time limitations of construction activities to 7:00am to 7:00pm Monday through Friday and 8:00am to 5:00pm on weekends and federally recognized holidays for the infrastructure grading required by DOT would limit the ground shaking effects in the project area. Impacts would be anticipated to be less than significant.

c. **Permanent Ambient Noise Increases:** The existing ambient noise in the project vicinity is defined primarily by existing traffic on Green Valley Road. This project would not add significantly to the existing ambient noise levels of the surrounding area. The overall types and volumes of noise would not be anticipated to be excessive and would be similar in character to surrounding land uses on the north, south

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

and west which are low and medium density residential in nature. Impacts would be anticipated to be less than significant.

d. **Temporary Ambient Noise Increases:** The construction phase of the project would result in an increase in noise levels to surrounding residences as the access roads and building pads are graded, the rough utility infrastructure installed, and subsequently when individual homes are built on lots. Construction noise would be temporary and would be minimized by compliance with Policy 6.5.1.11 of the El Dorado County General Plan Noise Element. Project operation would also result in periodic noise generation above current levels from the use of vehicles, landscaping equipment, etc. The overall types and volumes of noise from project operation would not be anticipated to be excessive and would be similar in character to anticipated and expected by the General Plan for land uses within a high-density designated area. Thus, as a result, the impacts would be anticipated to be less than significant.

e-f. **Aircraft Noise:** The project is not located adjacent to or in the vicinity of a public airport or private airstrip and would not be anticipated to experience noise from a private airport. There would be no impacts within this category.

FINDING: As conditioned, mitigated, and with adherence to County Code, no significant impacts to or from noise have been anticipated. For this "Noise" category, the thresholds of significance are not anticipated to be exceeded.

XIII. POPULATION AND HOUSING. *Would the project:*				
a. Induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Discussion: A substantial adverse effect on Population and Housing would occur if the implementation of the project would:

- Create substantial growth or concentration in population;
- Create a more substantial imbalance in the County's current jobs to housing ratio; or
- Conflict with adopted goals and policies set forth in applicable planning documents.

a. **Population Growth:** The proposed project would not induce growth directly or indirectly by providing infrastructure that would create development beyond what is currently anticipated in the General Plan because the land use designation would not change and the existing designation of High Density Residential (HDR) permits 1-5 dwelling units per 1.0 acre and the project proposes lots for 28.18 total acres or 1.7 units per acre. Using the 2000 U.S. Census figures which established that, in the unincorporated areas of the County, the average household size was 2.70 persons/occupied unit. The approval of the applications as proposed would potentially add single-family units which at 2.70 persons/occupied unit currently propose to potentially add 132 persons to the neighborhood. Assuming all residential units include a primary and secondary unit, the population could increase to approximately 264

persons. Each of those could potentially have second dwelling units, however pursuant to El Dorado County Building Permit data, out of 10,597 building permits issued between the years of 2001 to 2006, 323 were second dwelling units which is three percent which could lead to the conclusion that they are an insignificant factor when looking at population impacts. The proposed 49 residential parcels would result in an increase of population in the El Dorado Hills Community Region Planning Concept Area but would be consistent with the anticipated residential density of the High Density Residential land use designation. The project would not add significantly to the population in the vicinity.

b. **Housing Displacement:** The project would result in the creation of 49 residential lots on currently vacant parcels. No displacement or relocation housing would result as part of the project because the subject parcel is currently vacant. There would be no impacts.

c. **Population Displacement:** The proposed project would not displace any people because the subject parcel is currently vacant. There would be no impacts.

FINDING: There is limited potential for a significant impact due to substantial growth with the proposed project that was not anticipated by the General Plan. The project would not displace housing or cause substantial growth either directly or indirectly as the project site was designated by the General Plan for the proposed density. Impacts would be anticipated to be less than significant.

XIV. **PUBLIC SERVICES.** *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Fire protection?			X	
b. Police protection?			X	
c. Schools?			X	
d. Parks?			X	
e. Other government services?			X	

Discussion: A substantial adverse effect on Public Services would occur if the implementation of the project would:

- Substantially increase or expand the demand for fire protection and emergency medical services without increasing staffing and equipment to meet the Department's/District's goal of 1.5 firefighters per 1,000 residents and 2 firefighters per 1,000 residents, respectively;
- Substantially increase or expand the demand for public law enforcement protection without increasing staffing and equipment to maintain the Sheriff's Department goal of one sworn officer per 1,000 residents;
- Substantially increase the public school student population exceeding current school capacity without also including provisions to adequately accommodate the increased demand in services;
- Place a demand for library services in excess of available resources;
- Substantially increase the local population without dedicating a minimum of 5 acres of developed parklands for every 1,000 residents; or
- Be inconsistent with County adopted goals, objectives or policies.

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

a. **Fire Protection:** The El Dorado Hills Fire Department ("Fire Department") currently provides fire protection services to the project area. The Fire Department was solicited for comments to determine compliance with fire standards, El Dorado County General Plan, and State Fire Safe Regulations as adopted by El Dorado County, and the 2007 California Uniform Fire Code. The Fire Department did not have any concerns that the level of service would fall below the minimum requirements as a result of the proposed Tentative Subdivision Map, with adherence to a Fire Safe Plan approved by Fire Department and Cal Fire staff, as well as the Fire Department recommended conditions of approval for the project. The Fire Department will review building permit plans to determine compliance with their fire standards as well. Fire districts have been granted the authority by the State Legislature to collect impact fees at the time a building permit is secured. Development of the project would result in an incremental increase in demand for fire protection services but would be less than significant.

b. **Police Protection:** The project site would be served by the El Dorado County Sheriff's Department (Department) with a response time depending on the location of the nearest patrol vehicle. The minimum Department service standard is an eight-minute response to 80 percent of the population within Community Regions and their stated goal is to achieve a ratio of one sworn officer per 1,000 residents. If approved as proposed, the Tentative Subdivision Map would create 49 residential lots. The development of additional residential lots on the project site may result in a small increase in calls for service but would not be anticipated to significantly impact the Department any more than was anticipated by the General Plan for lands designated for high density residential uses. An approved project would not be anticipated to significantly impact current Sheriff's response times to the project area. The impacts would be anticipated to be less than significant.

c. **Schools:** Elementary and middle school students are served by the Rescue Union School District for elementary and middle schools. High school students would served by the El Dorado Union High School District. Neither school district responded with concerns about the project proposal. Fees for schools would be collected at the time of building permit issuance. The impacts would be anticipated to be less than significant.

d. **Parks:** If approved as proposed, the project would add 49 lots of housing units and would create a slight increase in the population in the County as a result. The additional units, however, would not trigger a significant impact that would require the project to develop new park facilities. Section 16.12.090 of County Code establishes the method and procedures to account the acquisition and development of parklands with discretionary subdivisions of land. This section outlines the in-lieu fee options available for residential projects of this size. For this project, a condition of approval is added to the project permit that would require the payment of park acquisition fees to the El Dorado Hills Community Service District prior to the filing of the final map. Additionally, park impact fees would also be assessed during the building permit review phase to offset general park facility impacts. Impacts would be anticipated to be less than significant.

e. **Government Services:** Other local services such as libraries would be anticipated to experience minor impacts. No other government services would be anticipated to be required as a result of the rezone, Development Plan, and Tentative Subdivision Map. The impacts are expected to be incremental and would be anticipated to be less than significant.

FINDING: Adequate public services appear to be available to serve the project. Increased demands to services would be addressed through the payment of established impact fees. The project would not be anticipated to result

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

in a significant increase of public services. For this 'Public Services' category, impacts would be anticipated to be less than significant.

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

Discussion: A substantial adverse effect on Recreational Resources would occur if the implementation of the project would:

- Substantially increase the local population without dedicating a minimum of 5 acres of developed parklands for every 1,000 residents; or
- Substantially increase the use of neighborhood or regional parks in the area such that substantial physical deterioration of the facility would occur.

a. **Parks:** Park facilities in the location of the project parcels are maintained by the El Dorado Hills Community Services District. As discussed above in the Population and Housing Section, the proposed rezone, and Tentative Subdivision Map would not result in a significant population increase not anticipated by the General Plan for high density residential land uses. Therefore, the project is not anticipated to contribute significantly to increased demand on recreation facilities or contribute to increased use of existing facilities. Impacts to parks would be anticipated to be less than significant.

b. **Recreational Services:** There would be no other construction or expansion of recreational facilities proposed for this project. The increased demand for services would be mitigated by the payment of the in-lieu fees as discussed above. Impacts would be anticipated to be less than significant.

FINDING: No significant impacts to open space or park facilities would be anticipated to result as part of the project. For this 'Recreation' category, impacts would be anticipated to be less than significant.

XVI. TRANSPORTATION/TRAFFIC. *Would the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e. Result in inadequate emergency access?			X	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

Discussion: A substantial adverse effect on Traffic would occur if the implementation of the project would:

- Result in an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system;
- Generate traffic volumes which cause violations of adopted level of service standards (project and cumulative); or
- Result in, or worsen, Level of Service "F" traffic congestion during weekday, peak-hour periods on any highway, road, interchange or intersection in the unincorporated areas of the county as a result of a residential development project of 5 or more units.

a, b, **Traffic Increases, Levels of Service Standards:** The Wilson Estates Traffic Impact Analysis (TIA) dated March 3, 2011 and Supplemental TIA dated May 3, 2012, prepared by Kimley-Horn and Associates (see Attachments 16-18), provides analysis and conclusions to traffic impacts by the project. The project will cause an increase in traffic on area roadways and intersections. The traffic study concluded that the project would generate 44 AM and 55 PM peak hour trips, with 540 daily trips. The project trip generation, plus approved projects not built, plus existing traffic is less than the assumed 2025 build out of the 2004 General Plan traffic analysis for this area. Therefore, the traffic improvements in the traffic fee program will accommodate the 2025 impacts of this project and a separate cumulative (year 2025) analysis was not required. As defined by the County, the addition of the proposed project to the Existing (2010) and Existing plus Approved Projects (2015) scenarios worsens conditions at three (3) study intersections.

The intersection of Green Valley Road at El Dorado Hills Boulevard/Salmon Falls Road is impacted during the AM peak-hour due to southbound Salmon Falls left turn movements. The impacts can be addressed

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

with signal cycle length optimization and reallocation of the green time. This reduces the delay from 91.2 to 39.8 seconds and to an acceptable Level of Service (LOS) D during the AM peak-hour. The project impact at this intersection is 1 percent of the traffic volume; therefore payment of TIM fees is a proportionate share towards these improvements.

The intersection of El Dorado Hills Boulevard at Francisco Drive is impacted during the AM and PM peak hours. The impacts will be addressed with the addition of an eastbound channelized right-turn lane on Francisco Drive. The traffic turning right will require the addition of a southbound receiving lane on El Dorado Hills Boulevard. This improvement results in the intersection operating at LOS D and LOS C during the AM and PM peak-hour, respectively. Therefore, this impact is less than significant. This improvement is programmed in the DOT Capital Improvement Program (CIP) #71358. The Department is currently working on the environmental approval of the project and anticipates construction of the improvement in 2013/14 season.

The intersection of El Dorado Hills Boulevard at US-50 Westbound Ramps is impacted during the AM and PM peak-hours. The impacts will be addressed with the implementation of the ultimate configuration of the US-50 interchange. The interchange configuration is currently under construction, Project #53124. The intersection will operate at LOC C and LOS B during the AM and PM peak-hour, respectively. Therefore, this impact would be less than significant.

DOT has determined that the project impacts would not exceed the level of service thresholds established by the General Plan with the intersection improvements identified above. Payment of the Traffic Impact Mitigation Fees provides this project's proportionate share of the funding for these improvements.

c. **Air Traffic:** The project would not result in a change in established air traffic patterns for publicly or privately operated airports or landing field in the project vicinity. No impacts would occur.

d. **Design Hazards:** The project would not create significant traffic hazards. The proposed encroachments would be designed and constructed to AASHTO, Caltrans and/or County standards in accordance with General Plan Policy TC-1a. The traffic analysis did not identify hazards associated with the design of the project. The project would provide secondary access for emergency ingress and egress constructed in accordance with current standards. Impacts would be less than significant.

e. **Emergency Access:** The applicant would be required to construct new access roads, which would be built to current standards and El Dorado Hills Fire Department Fire Safe standards to connect to existing roadways in the project area. Adequate primary and secondary access would be provided. The applicants would be required to adhere to the project's approved Fire Safe Plan. As conditioned, impacts would be less than significant.

f. **Alternative Transportation:** The proposed project does not conflict with the adopted General Plan policies, adopted plans, or programs supporting alternative transportation. The project was distributed to the El Dorado County Transportation Commission, as well as El Dorado County Transit, neither responded with any concerns or recommendations about the project pertaining to alternative transportation. There would be no impacts.

FINDING: As discussed above, traffic impacts at area intersections and roadways would be addressed with Capital Improvement Plan projects (CIP), and with DOT-required conditions of approval. As discussed above, and as

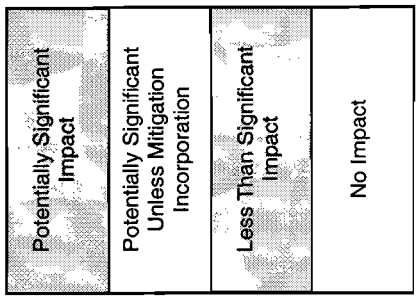
conditioned, no significant traffic impacts are anticipated for the proposal. For this "Transportation/Traffic" category, the thresholds of significance will not be exceeded.

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

Discussion: A substantial adverse effect on Utilities and Service Systems would occur if the implementation of the project would:

- Breach published national, state, or local standards relating to solid waste or litter control;
- Substantially increase the demand for potable water in excess of available supplies or distribution capacity without also including provisions to adequately accommodate the increased demand, or is unable to provide an adequate on-site water supply, including treatment, storage and distribution;
- Substantially increase the demand for the public collection, treatment, and disposal of wastewater without also including provisions to adequately accommodate the increased demand, or is unable to provide for adequate on-site wastewater system; or
- Result in demand for expansion of power or telecommunications service facilities without also including provisions to adequately accommodate the increased or expanded demand.

a, e. **Wastewater Requirements and Treatment Capacity:** The project is required to comply with requirements for the treatment, collection, processing, and disposal of waste as established by the Regional Water Quality Control Board (RWQCB). The project would connect to an existing EID public wastewater treatment system and would be required to extend those facilities to handle the increased capacity. There is an existing sewer facility located at the intersection of Malcolm Dixon and Allegheny Roads. The project proposes to set a connecting line in the existing Malcolm Dixon Road public utility easement from the project site to an existing manhole located within Uplands Drive. It is not proposed to require crossing the



existing bridge located west of Uplands Drive. The El Dorado Irrigation District has indicated in the submitted Facility Improvement Letter (FIL) dated September 14, 2012 (Attachment 20) states that the project will require 49 EDUs of sewer service and that the existing sewer line has adequate capacity for the proposed project at this time, with extensions of facilities of adequate size. Impacts would be less than significant. (See also the Preliminary Onsite/Offsite Sewer Exhibit dated May 2012, Attachment 21).

b. **New Facilities:** No new water or wastewater treatment plants are proposed or are required because of the project. The proposed sewer line extension to connect to the existing sewer facilities west of the project are proposed to be installed within an existing EID utility easement along Malcolm Dixon Road. This will not cause a significant environmental impact.

c. **New Stormwater Facilities:** On-site storm water drainage facilities would be installed and maintained in order to control, reduce, and/or eliminate run-off from this development. All storm water drainage facilities shall be designed to meet the *El Dorado County Grading, Erosion, and Sediment Control Ordinance,* as well as the *Drainage Manual* standards in order to reduce discharge levels to County, state, and federal standards, and to maintain such flow based on the outcome identified by the preliminary drainage study prepared for this project. The Department of Transportation would review a future Engineer's Report to identify maintenance and fee responsibilities associated with project drainage facilities, as a condition of the permit. Impacts would be less than significant.

d. **Sufficient Water Supply:** Water for the project would be provided by the El Dorado Irrigation District. EID has indicated in the FIL that they have the ability to serve the project with existing mains. This system would need to tie into the existing 12-inch water line in Green Valley Road. The FIL makes it clear that is not a commitment to serve, but does address the location and approximate capacity of existing facilities that may be available to serve the proposed project. In terms of water supply, as of January 1, 2012, there were 4,752 equivalent dwelling units (EDUs) available in the El Dorado Hills Water Supply Region. The FIL states that the project would require 50 additional equivalent dwelling units (EDUs) of water supply. The resulting lots for the current proposal would be required to establish separate domestic water service accounts with EID. The applicant would be responsible for the installation of all improvements to the District's Water, Sewer and Recycled Water Design and Construction Standards necessary to provide these services. Impacts would be less than significant.

f, g. **Solid Waste:** In December of 1996, direct public disposal into the Union Mine Disposal Site was discontinued and the Material Recovery Facility/Transfer Station was opened. Only certain inert waste materials (e.g., concrete, asphalt, etc.) may be dumped at the Union Mine Waste Disposal Site. All other materials that cannot be recycled are exported to the Lockwood Regional Landfill near Sparks, Nevada. In 1997, El Dorado County signed a 30-year contract with the Lockwood Landfill Facility for continued waste disposal services. The Lockwood Landfill has a remaining capacity of 43 million tons over the 655-acre site. Approximately six million tons of waste was deposited between 1979 and 1993. This equates to approximately 46,000 tons of waste per year for this period.

After July of 2006, El Dorado Disposal began distributing municipal solid waste to Forward Landfill in Stockton and Kiefer Landfill in Sacramento. Pursuant to El Dorado County Environmental Management Solid Waste Division staff, both facilities have sufficient capacity to serve the County. Recyclable materials are distributed to a facility in Benicia and green wastes are sent to a processing facility in Sacramento. Impacts would be less than significant.

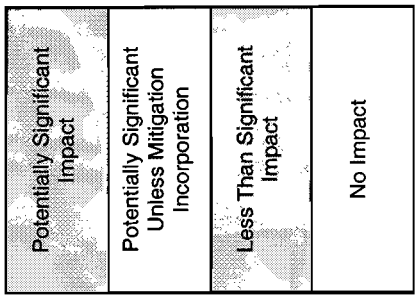
County Ordinance No. 4319 requires that new development provide areas for adequate, accessible, and convenient storing, collecting, and loading of solid waste and recyclables. On-site solid waste collection for the proposed lots would be handled through the local waste management contractor. Adequate space is available at the site for solid waste collection and storage of trash, recycling and related refuse containers. County Ordinance No. 4319 requires that new development provide areas for adequate, accessible, and convenient storing, collecting, and loading of solid waste and recyclables. For residential development some on-site separation of materials is required and areas are required to be set aside for the storage of solid waste in accordance with Ordinance No. 4319. Chapter 8.42.640C of the county Ordinance requires that solid waste, recycling and storage facilities must be reviewed and approved by the County prior to building permit issuance. Impacts would be anticipated to be less than significant.

FINDING: Adequate water and sewer systems are available to serve the project. There is a safe and reliable water source available for each lot, available capacity in the County refuse and recycling system, and associate collection areas that are available for this project. For this 'Utilities and Service Systems' category, impacts would be less than significant.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE. *Does the project:*	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X		
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Discussion:

a. The proposed project has the potential to significantly impact biological resources as well as cultural resources as discussed in this document. The project would require oak woodland habitat removal, and potential modification an onsite riparian feature. Mitigation Measures Bio 1-4 reduce these impacts, as well as those to protected animal species during project construction to a less than significant level. As conditioned and mitigated, and with adherence to County General Plan policies and permit requirements, the project would not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of California history or pre-history. Potential impacts from the project would be considered less than significant due to the design of the project and required standards and mitigations that would be implemented with the process of the final map and/or any required project specific improvements.



b. Cumulative impacts are defined in Section 15355 of the California Environmental Quality Act (CEQA) Guidelines as "two or more individual effects, which when considered together, would be considerable or which would compound or increase other environmental impacts." Based on the analysis in this study, the project would have a less than significant impact based on the issue of cumulative impacts. The project has impacts that could be considered cumulatively significant based on- as well as off-site improvements necessary to develop the project. The project would connect to existing public water and sewer services within existing utility easements. The project would be consistent with the existing General Plan Land Use Designation and the surrounding land use pattern. The primary cumulative impact on a project specific level would be to transportation and circulation. As discussed in the Transportation section the cumulative impact at specified intersections will be reduced to less than significant by the fair share payment of the project-related TIM fees for those intersections.

c. Noise impacts from Green Valley Road traffic would be a significant impact on future residents, as discussed in the Noise Section. The inclusion of a masonry sound wall would reduce those impacts to a less than significant level. Mitigation Measure Noise 1 will reduce this impact to less than significant.

INITIAL STUDY ATTACHMENTS

Attachment 1 ..... Location Map
Attachment 2 ..... Clarksville U.S.G.S. 7.5 Minute Quadrangle
Attachment 3 ..... Tentative Map, dated May 2012
Attachment 4 ..... Preliminary Landscape Plan, dated January 6, 2012
Attachment 5 ..... Masonry Sound Wall & Fence Exhibit dated May 2012
Attachment 6 ..... Wilson Estates Air Quality and Greenhouse Gases, PMC, July 2011
Attachment 7 ..... Wilson Estates Air Quality and Greenhouse Gases, PMC, October 2012
Attachment 8 ..... Special Status Plant Surveys, Gibson & Skordal, Inc., August 2011
Attachment 9 ..... Jurisdictional Delineation and Special Species Evaluation, Gibson & Skordal, Inc., January 2009
Attachment 10 ..... U.S. Army Corps wetland Jurisdictional Determination dated August 23, 2011
Attachment 11 ..... Gibson & Skordal, Inc., Wetland Consultants letter dated June 1, 2012
Attachment 12 ..... Phase 1 Archeological Study of the Wilson Estates Project, Historic Resource Associates, January 2011
Attachment 13 ..... Revised Drainage Report Wilson Estates, CTA Engineering and Surveying, July 2012
Attachment 14 ..... Environmental Noise Assessment Wilson Estates, Bollard and Associates, May 3, 2012
Attachment 15 ..... Wildland Fire Safe Plan, William Draper, Registered Professional Forester #898, dated September 2, 2011
Attachment 16 ..... Traffic Impact Analysis, Wilson Estates (WO#38), Final March 3, 2011, Kimley-Horn and Associates, Inc.
Attachment 17 ..... Memorandum, Wilson Estates TIS WO #38, Dowling Associates to Eileen Crawford, El Dorado County DOT, April 4, 2011
Attachment 18 ..... Kimley-Horn and Associates, Inc., Supplemental Traffic Analysis for Wilson Estates (WO #38), May 3, 2012
Attachment 19 ..... El Dorado Irrigation District Facility Improvement Letter dated September 14, 2012
Attachment 20 ..... Preliminary Onsite/Offsite Sewer Exhibit dated May 2012
Attachment 21 ..... Preliminary Grading and Drainage Plan, and Tree Preservation Plan dated May 2012

SUPPORTING INFORMATION SOURCE LIST

The following documents are available at El Dorado County Planning Services in Placerville.

El Dorado County General Plan Draft Environmental Impact Report
Volume 1 of 3 – EIR Text, Chapter 1 through Section 5.6
Volume 2 of 3 – EIR Text, Section 5.7 through Chapter 9
Appendix A
Volume 3 of 3 – Technical Appendices B through H

El Dorado County General Plan – A Plan for Managed Growth and Open Roads; A Plan for Quality Neighborhoods and Traffic Relief (Adopted July 19, 2004)

Findings of Fact of the El Dorado County Board of Supervisors for the General Plan

El Dorado County Zoning Ordinance (Title 17 - County Code)

County of El Dorado Drainage Manual (Resolution No. 67-97, Adopted March 14, 1995)

County of El Dorado - Grading, Erosion, and Sediment Control Ordinance Adopted by the County of El Dorado Board of Supervisors, August 10, 2010 (Ordinance #4949)

El Dorado County Design and Improvement Standards Manual

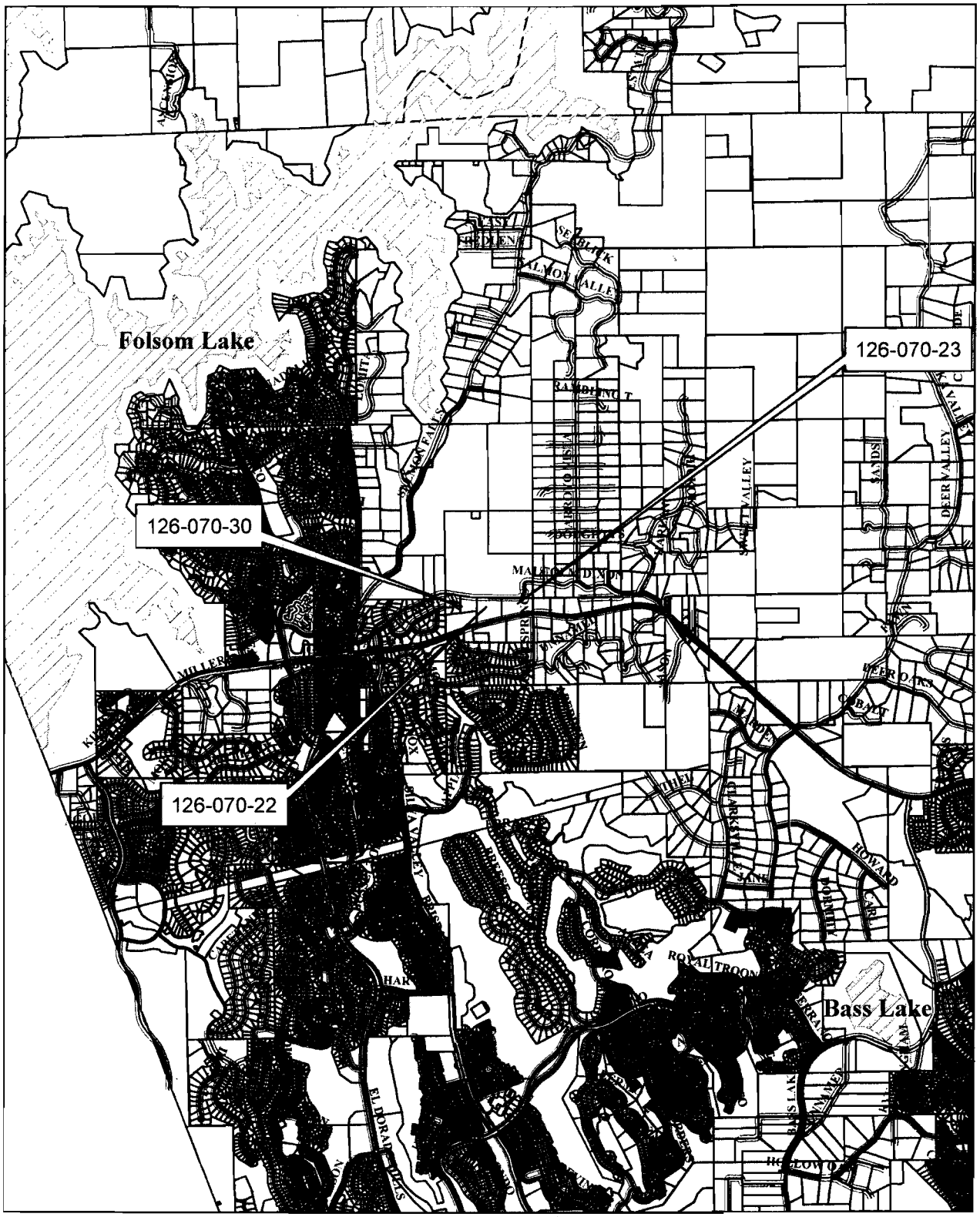
El Dorado County Subdivision Ordinances (Title 16 - County Code)

Soil Survey of El Dorado Area, California

California Environmental Quality Act (CEQA) Statutes (Public Resources Code Section 21000, et seq.)

Title 14, California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act (Section 15000, et seq.)

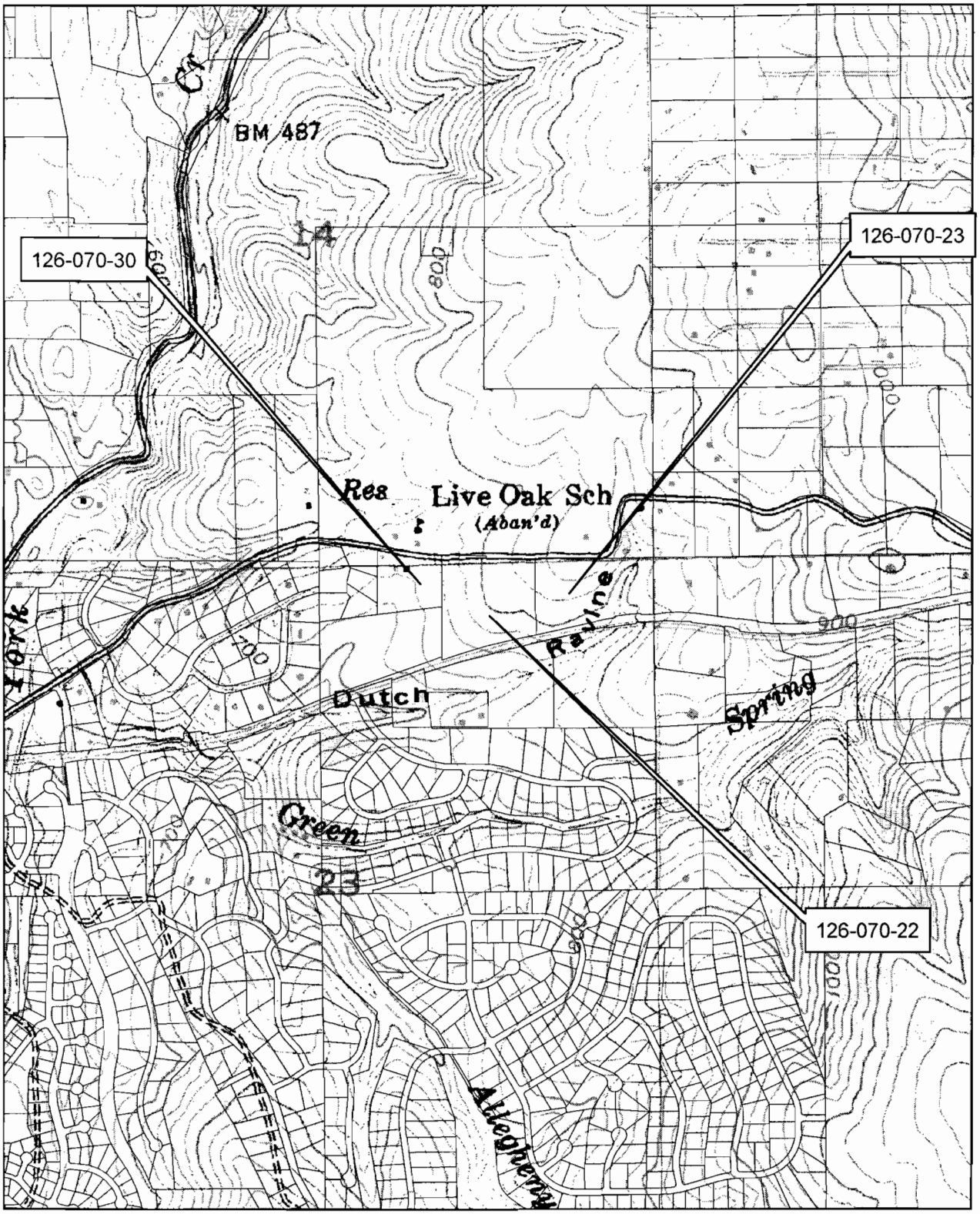
Location Map



File Nos. Z111-0007/TM11-1504

Exhibit U–Attachment 1

Clarksville U.S.G.S 7.5 Minute Quadrangle with El Dorado County Parcels Overlayed



N

0 1,000 2,000 4,000

Feet

File Nos. Z111-0007/TM11-1504

Exhibit U–Attachment 2

TENTATIVE MAP

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA

OWNERS OF RECORD

APPLICANT

ENGINEER

cta Engineering & Surveying

MAP SCALE

CONTOUR INTERVAL

SOURCE OF TOPOGRAPHY

SECTION, TOWNSHIP and RANGE

ASSESSOR'S PARCEL NUMBERS

GENERAL PLAN

PRESENT ZONING

PROPOSED ZONING

TOTAL AREA

TOTAL NUMBER OF PARCELS

MINIMUM LOT AREA

WATER SUPPLY and SEWAGE DISPOSAL

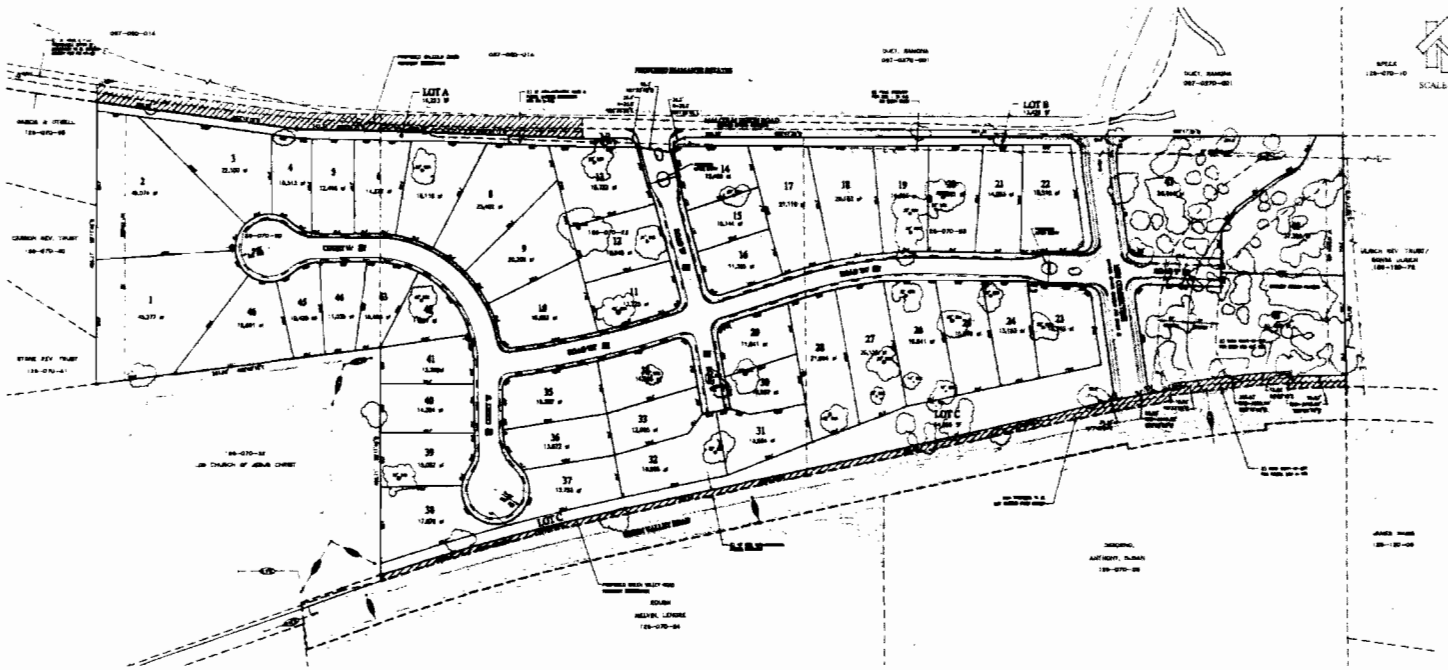
PROPOSED STRUCTURAL FIRE PROTECTION

DATE OF PREPARATION

PHASING PLAN NOTICE

ENGINEER'S CERTIFICATE

DAVID ROBERT CROSARIOL R.C.E. 34529 DATE



VICINITY MAP

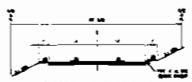
LEGEND

(P) FIRE HYDRANT
(P) SUBDIVISION BOUNDARY
(P) RIGHT OF WAY LINE
(P) LOT LINE
(P) PAVEMENT WIDTH

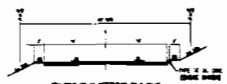
INTERIOR LOT

CORNER LOT

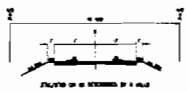
TYPICAL BUILDING SETBACKS ONE-FAMILY RESIDENTIAL UNLESS NOTED OTHERWISE



TYPICAL SECTION
ROAD 'B1' 'D' & 'E'
PARKING ONE SIDE ONLY



TYPICAL SECTION
ROAD 'B2' COURT 'A' & COURT 'B'
PARKING ONE SIDE ONLY



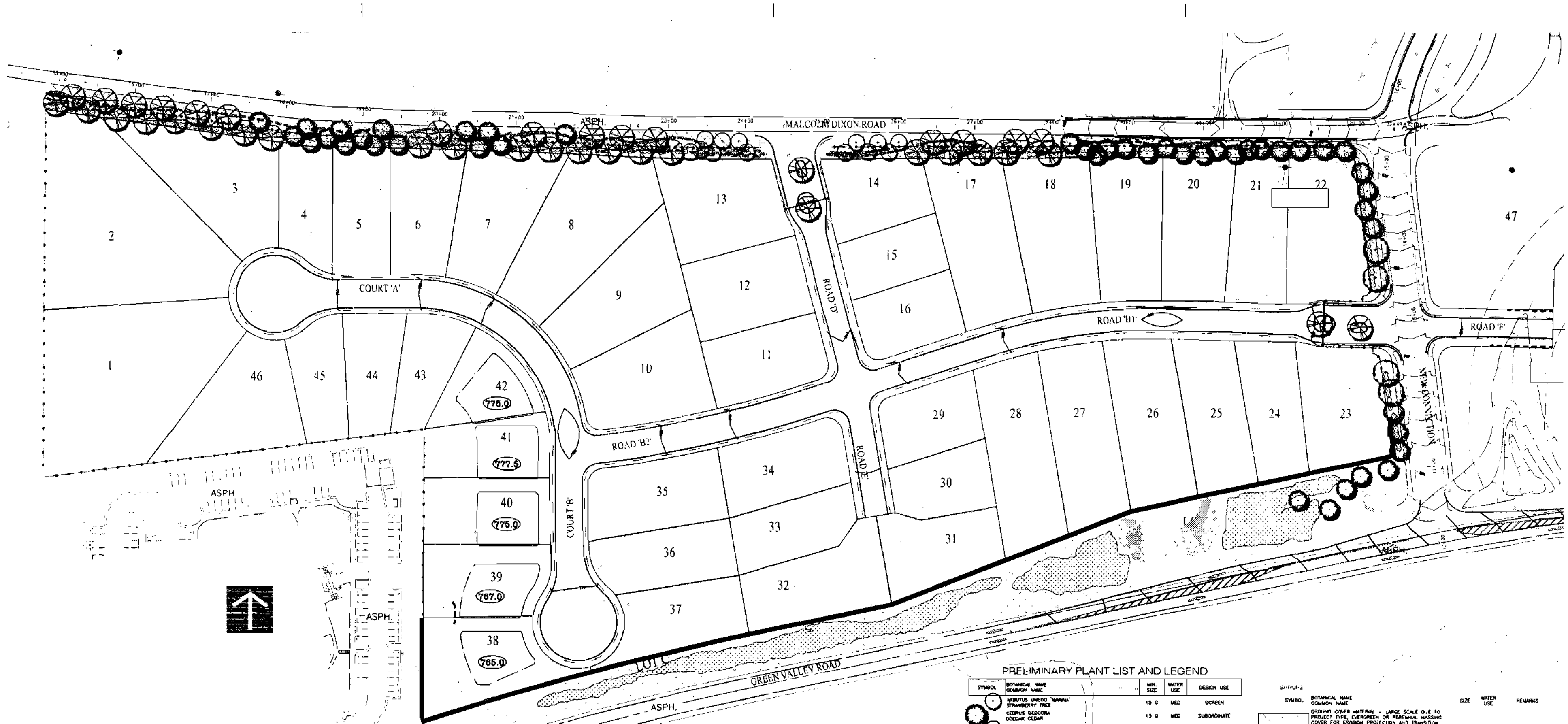
TYPICAL SECTION
ROAD 'F'
NO PARKING

ONSITE ROADWAYS

OFFSITE ROADWAYS

Exhibit U – Attachment 3

M:\06-047-002\PLANNING\TENTATIVE MAP\06-047-002-TM.dwg, TENTATIVE MAP, 5/10/2012 11:12:03 AM, rfursov



SITE KEYNOTES

A. MINIMUM OF THREE TREES AND SIX SHRUBS SHALL BE PROVIDED PER EACH ONE HUNDRED FEET IN THE LANDSCAPE BUFFERS REQUIRED ALONG THE PROPERTY BOUNDARIES AND PUBLIC ROADS, STREETS OR HIGHWAYS. THE SIZE AND SPECIES SHALL BE APPROVED BY THE PLANNING DIRECTOR.

B. COMMON AREA OPEN SPACE LANDSCAPING LOCATED ADJACENT TO DEVELOPMENT SIDE SHALL CONTAIN DROUGHT RESISTANT PLANTINGS.

C. 6'0" MASONRY WALL SHALL BE PROVIDED ADJACENT TO COMMON AREA OPEN SPACE.

D. A WOOD "GOOD NEIGHBOR" FENCE SHALL BE PROVIDED BETWEEN UNITS.

E. A MIN. 5'0" METAL FENCE AT OPENINGS BETWEEN WALL AND LOTS

F. ALL PLANTINGS SHALL BE AUTOMATICALLY IRRIGATED PER STATE AB 1881, EL DORADO COUNTY, AND EL DORADO IRRIGATION DISTRICT REQUIREMENTS.

PRELIMINARY PLANT LIST AND LEGEND

SYMBOL	BOTANICAL NAME / COMMON NAME	MIN. SIZE	WATER USE	DESIGN USE
	ARBUTUS UNEDO 'MARINA' / STRAWBERRY TREE	15 G	MED	SCREEN
	CEDRUS DEODORA / DEODAR CEDAR	15 G	MED	SUBORDINATE
	COTINUS COGGRYGIA / SMOKE TREE	15 G	MED	NATURALIZED
	PISTACIA CHINENSIS / CHINESE PISTACH	15 G	MED	SUBORDINATE
	QUERCUS RUBRA / RED OAK	24 BOX	MED	ACCENT ENTRY
	QUERCUS WISLEZNEII / INTERIOR LIVE OAK	15 G/ 5 G	LOW	NATURALIZED/SCREEN TREE
	DRIP LINE OF EXISTING TREE TO REMAIN SEE CIVIL PLANS FOR LIST AND TREE #'S			

SHRUBS

SYMBOL	BOTANICAL NAME / COMMON NAME	SIZE	WATER USE	REMARKS
	BACKGROUND / SCREEN SHRUBS – EVERGREEN, LARGE SHRUBS TO 6'-0" USED FOR REDUCING WALL MASS OR SCREENING UNDESIRABLE VIEWS.			
	ARBUTUS UNEDO COMPACTA / COMPACT STRAWBERRY TREE	5 G	LOW	--
	COTONEASTER PARNEYI / COTONEASTER	5 G	MED	--
	CEANOTHUS JULIA PHELPS / WILD LILAC	5 G	LOW	--
	PHOTINIA SERRULATA / PHOTINIA	5 G	MED	--
	FACER/FILLER SHRUBS EVERGREEN OR DECIDUOUS SHRUBS TO 4'-0". USED FOR "TERRACING" OF PLANT MATERIAL, SEASONAL COLOR AND SOFTENING OF BUILDING EDGES AND FOUNDATION SHRUBS.			
	ARCTOSTAPHYLOS HOWARD MCMINN / MANZANITA	5 G	LOW	--
	CISTUS HYBRIDUS / WHITE ROCKROSE	5 G	LOW	--
	RHAPHIOLEPIS INDICA 'SPP. / INDIA HAWTHORN	5 G	LOW	--
	HYPERICUM X MOSERIANUM / GOLD FLOWER	5 G	MED	--

SHRUBS

SYMBOL	BOTANICAL NAME / COMMON NAME	SIZE	WATER USE	REMARKS
	GROUND COVER MATERIAL – LARGE SCALE DUE TO PROJECT TYPE, EVERGREEN OR PERENNIAL MASSING COVER FOR EROSION PROTECTION AND TRANSITION FROM OPEN SPACE OAK WOODLAND TO REMAIN. USED AS A LARGE SCALE FILLER BETWEEN SITE WORK EDGES AND BACKGROUND SHRUBS			
	ARCTOSTAPHYLOS U. URSI / MANZANITA	1 G	LOW	36" O.C
	ROSA LADY BANKS / LADY BANKS ROSE	1 G	LOW	72" O.C
	BACCHARIS PILULARIS TWIN PEAKS / COYOTE BUSH	1 G	LOW	60" O.C
	GROUND COVER MATERIAL – SMALL SCALE DUE TO PROJECT TYPE AND AREA, EVERGREEN OR PERENNIAL SHRUBS TO 24" HIGH. USED AS A FILLER BETWEEN SITE WORK EDGES AND FACER SHRUBS			
	ARCTOSTAPHYLOS U. URSI / MANZANITA	1 G	LOW	36" O.C
	CISTUS SKANBERGII / SAGELEAF ROCKROSE	1 G	MED	24" O.C
	MAHONIA REPENS / CREEPING OREGON GRAPE	1 G	MED	36" O.C
	OPEN SPACE REVEGETATION PLANTING ADJACENT TO OPEN SPACE – MIX OF NATIVE PLANT MATERIAL AND GRASSES USED AS NATURAL TRANSITION FROM THE EDGES OF SITE WORK DEVELOPMENT. PLANT MATERIAL TO BE USED AS AN EROSION CONTOL MEASURE AND NATURAL FILLER ALONG SLOPE EDGE COMPATIBLE WITH OAK WOODLAND ENVIRONEMENT WITH LOW FUEL LOAD CHARACTERISTICS. NON IRRIGATED AND THIS MATERIAL WILL BE HYDROSEEDED AND POINT SOURCE IRRIGATED			
	ARTEMESIA CALIFORNICA / CA. SAGEBRUSH	SEED	LOW	--
	CERCIS OCCIDENTALIS / WESTERN REDBUD	1 G	LOW	--
	FREMONTODENDRON DARA GOLD / FLANNEL BUSH	1 G	LOW	--
	ESCHSCHOLZIA CALIFORNICA / CA. POPPY	SEED	LOW	--
	MIMULUS SPP. / MONKEY FLOWER	SEED	LOW	--
	NASSELLA PULCHRA / PURPLE NEEDLE GRASS	SEED	LOW	--
	QUERCUS DOUGLASII, QUERCUS WISLEZENII, QUERCUS LOBATA. BLUE OAK, INTERIOR LIVE OAK, VALLEY OAK.	ACORN/ LINERS	LOW	

WILSON ESTATES
EL DORADO COUNTY, CA

PRELIMINARY LANDSCAPE PLAN

SCALE: 1" = 60'-0" 0 60' 120'

DATE: 12 06 01 RV
PROJECT CTA11077

FUHRMAN LEAMY

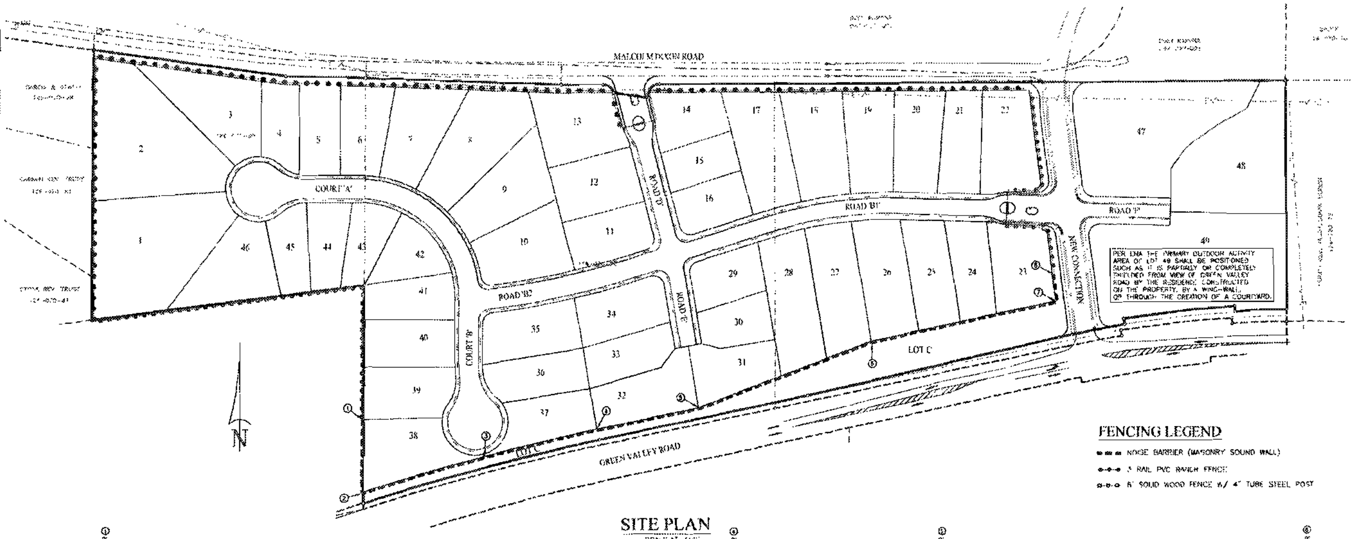
PL1

WILSON ESTATES

MASONRY SOUND WALL & FENCE EXHIBIT

COUNTY OF EL DORADO, CALIFORNIA

MAY, 2012

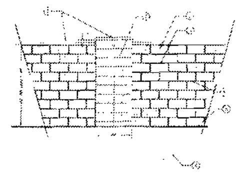


SITE PLAN

SCALE: 1"=100'

FENCING LEGEND

- NOISE BARRIER (MASONRY SOUND WALL)
- 3 RAIL PVC RANCH FENCE
- 6' SOLID WOOD FENCE W/ 4" TUBE STEEL POST

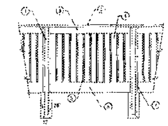


NOISE BARRIER DETAIL (MASONRY SOUND WALL)

SCALE: 1"=4'

3 RAIL PVC RANCH FENCE

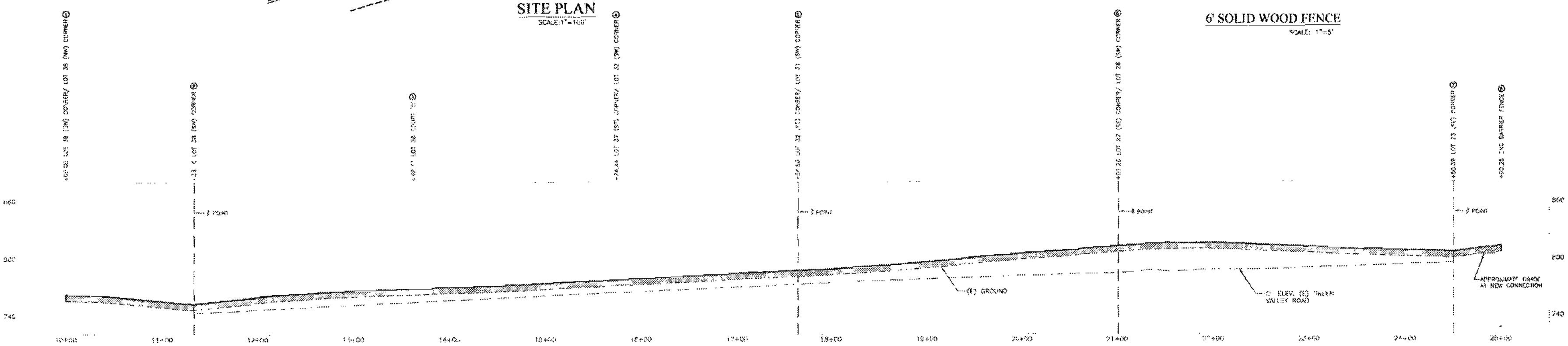
SCALE: NTS



1. 4x4x3/16" STEEL TUBE POST
2. 2x6 REDWOOD CAP
3. 2x6 REDWOOD TOP RAIL
4. 1x6 REDWOOD FENCE
5. 1x2 REDWOOD STILE
6. 2x12 REDWOOD BOTTOM RAIL
7. 2x4 REDWOOD FRAME BOARD BOLTED TO STEEL TUBE

6' SOLID WOOD FENCE

SCALE: 1"=5'



FG/FENCE PROFILE

cta Engineering & Surveying

Civil Engineering · Land Surveying · Land Planning

3233 Monier Circle, Rancho Cordova, CA 95742

Exhibit U–Attachment 5

WILSON ESTATES

AIR QUALITY IMPACT ANALYSIS AND GREENHOUSE GASES

Prepared by:

PMC®

2729 PROSPECT PARK DRIVE, SUITE 220
RANCHO CORDOVA, CA 95670

JULY 2011

INTRODUCTION

This report documents the results of both an air quality impact analysis and greenhouse gas (GHG) impact analysis completed for the proposed Wilson Estates project, a 28-acre, 60-unit single-family residential development project proposed to be located along the south side of Malcolm Dixon Road in El Dorado Hills, California (the proposed project or project). The purpose of this impact analysis is to identify potential environmental impacts associated with both air quality and GHGs as required by the California Environmental Quality Act (CEQA).

The air quality impact analysis was prepared using methodologies and assumptions recommended within the rules and regulations of the El Dorado County Air Quality Management (EDCAQMD) (formerly identified as the El Dorado County Air Pollution Control District). Regional and local air quality conditions are presented, along with pertinent air quality standards and regulations. The GHG impact analysis was prepared by comparing proposed project consistency with measures recommended by the State of California and the County of El Dorado for reducing GHG emissions, including measures currently recommended by the El Dorado County Board of Supervisors Environmental Vision for El Dorado County, Resolution No. 29-2008.

AIR QUALITY SETTING

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, together with the current regulatory structure that applies to the Mountain Counties Air Basin (MCAB), in which the project site is located, pursuant to the regulatory authority of the EDCAQMD. The EDCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. Currently, the portion of the MCAB in which the project site is located (western El Dorado County) is designated as nonattainment for the state ozone and PM_{10} (particulate matter less than 10 microns in diameter) standards as well as for the federal ozone and $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter) standards (CARB 2010a). These designations will be described in greater detail later in this analysis.

Topographic and Meteorological Influences on Air Quality

Ambient air quality is commonly characterized by climatological conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that influence the potential for regional and local air pollutants. The following section describes pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the project area.

The MCAB lies along the northern Sierra Nevada range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. The western slope of El Dorado County, from Lake Tahoe on the east to the Sacramento County boundary on the west, lies within the MCAB. Elevations range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout El Dorado County, the topography is highly variable and includes rugged mountain peaks and valleys with extreme slopes and differences in altitude in the Sierras, as well as rolling foothills to the west.

The general climate of the MCAB varies considerably with elevation and proximity to the Sierra ridge. The terrain features of the basin make it possible for various climates to exist in relatively close proximity. The pattern of mountains and hills causes a wide variation in rainfall, temperature, and localized winds throughout the basin. Temperature variations have an

important influence on basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. In the western foothills of the county, where the project site is located, winter temperatures usually dip below freezing only at night, and precipitation is mixed as rain or light snow. In the summer, temperatures can routinely exceed 100 degrees Fahrenheit at the project site.

From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface airflows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic compounds (ROG) and oxides of nitrogen (NOx) that results in the formation of ozone (O_3). Because of its long formation time, ozone is a regional pollutant rather than a local hot-spot problem.

In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west of the project site is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the state and federal ozone ambient air quality standards in the MCAB (EDCAQMD 2002, Chapter 2, p. 2).

CRITERIA AIR POLLUTANTS OF CONCERN AND HEALTH EFFECTS

The most problematic pollutants in the project area include ozone and particulate matter. The health effects and major sources of these pollutants are described below. Toxic air pollutants are a separate class of pollutants and are discussed later in this analysis.

Ozone

Ground-level ozone, commonly referred to as smog, is greatest on warm, windless, sunny days. Ozone (O_3) is not emitted directly into the air but formed through a complex series of chemical reactions between reactive organic gases (ROG) and NOx. These reactions occur over time in the presence of sunlight. Ground-level ozone formation can occur in a matter of hours under ideal conditions. The time required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution concern. Once formed, ozone can remain in the atmosphere for one or two days.

Ozone is also a public health concern because it is a respiratory irritant that increases susceptibility to respiratory infections and diseases, and because it can harm lung tissue at high concentrations. In addition, ozone can cause substantial damage to leaf tissues of crops and natural vegetation and can damage many natural and man-made materials by acting as a chemical oxidizing agent.

The principal sources of the ozone precursors (ROG and NOx) are the combustion of fuels and the evaporation of solvents, paints, and fuels.

Reactive Organic Gases

Reactive organic gases (ROG), also known as volatile organic compounds, are photochemically reactive hydrocarbons that are important for ozone formation. This definition excludes methane,

carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, methylene chloride, methyl chloroform, and various chlorofluorocarbons. There are no health standards for ROG separately. The main concern with ROG is its role in photochemical ozone formation. In addition, some compounds that make up ROG are also toxic. An example is benzene, which is a carcinogen.

The primary sources of ROG are mobile sources, solvents, farming operations and other area sources, and oil and gas production.

Nitrogen Oxides

Nitrogen oxides (NO_x) are a family of gaseous nitrogen compounds and are precursors to ozone formation. The major component of NO_x, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure.

Health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucous membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid disposition in California. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter

Particulate matter (PM) can be divided into several size fractions. Coarse particles are between 2.5 and 10 microns in diameter and arise primarily from natural processes, such as wind-blown dust or soil. Fine particles are less than 2.5 microns in diameter and are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces, and woodstoves produces fine particles.

The level of fine particulate matter in the air is a public health concern because it can bypass the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The health effects vary depending on a variety of factors, including the type and size of particles. Research has demonstrated a correlation between high PM concentrations and increased mortality rates. Elevated PM concentrations can also aggravate chronic respiratory illnesses such as bronchitis and asthma.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicle emissions are the dominant source of CO in the region. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can cause dizziness, headaches, unconsciousness, and even death. Carbon monoxide can also aggravate cardiovascular disease. Relatively low concentrations of CO can significantly affect the amount of oxygen in the bloodstream because CO binds to hemoglobin 220–245 times more strongly than oxygen.

CO emissions and ambient concentrations have decreased significantly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and motor vehicle fuels. CO is still a pollutant that must be closely monitored, however, due to its severe effect on human health.

Elevated CO concentrations are usually localized and are often the result of a combination of high traffic volumes and traffic congestion. Elevated carbon monoxide levels develop primarily during winter periods of light winds or calm conditions combined with the formation of ground-level temperature inversions. Wintertime CO concentrations are higher because of reduced dispersion of vehicle emissions and because CO emission rates from motor vehicles increase as temperature decreases.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg smell formed primarily by the combustion of sulfur-containing fuels such as coal, fuel oil, and diesel fuels. Health effects include sore throats, coughing, and breathing problems. In addition, like nitrogen dioxide, sulfur dioxide changes in the atmosphere to acidic particles and sulfuric acid, which can injure both people and plants. It is rare in California to see levels of SO_2 high enough to cause these symptoms.

AMBIENT AIR QUALITY STANDARDS

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels which avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and California ambient air quality standards for important pollutants are summarized in **Table 1**. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California standards are more stringent. This is particularly true for ozone and PM_{10}.

TABLE 1
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.075 ppm	0.07 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35 ppm	20.0 ppm
Nitrogen Dioxide	Annual Average	0.053 ppm	0.03 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual Average	0.03 ppm	–
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	75 ppb	0.25 ppm
PM_{10}	Annual Average	–	20 $\mu g/m^3$
	24-Hour	150 $\mu g/m^3$	50 $\mu g/m^3$

Pollutant	Averaging Time	Federal Primary Standard	State Standard
$PM_{2.5}$	Annual Average	15 µg/m³	12 µg/m³
	24-Hour	35 µg/m³	–

Notes: ppm = parts per million; ppb = parts per billion; ug/m³ = micrograms per cubic meter
PM_{10} = particulate matter 10 microns or less; $PM_{2.5}$ = particulate matter 2.5 microns or less
Source: CARB 2010b

AMBIENT AIR QUALITY

Ambient air quality in the project area can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 air quality monitoring stations throughout California.

The Folsom–Natoma Street air quality monitoring station, located approximately 6 miles west of the project site, is the closest station to the project site. The Folsom–Natoma Street air quality monitoring station monitors ambient concentrations of ozone and $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations within the project area.

Table 2 summarizes the published data since 2008 from the Folsom–Natoma Street air quality monitoring station for each year that the monitoring data is provided. As depicted in **Table 2**, exceedances of state and federal ozone standards declined during the last three years of available data.

TABLE 2
SUMMARY OF AMBIENT AIR QUALITY DATA

Pollutant Standards	2008	2009	2010
Ozone			
Max 1-hour concentration (ppm)	0.166	0.120	0.124
Max 8-hour concentration (ppm) (state/federal)	0.12/0.12	0.10/0.10	0.12/0.12
Number of days above state 1-hr standard	38	24	12
Number of days above state/federal 8-hour standard	65/50	47/35	26/19
Respirable Particulate Matter (PM_{10})			
Max 24-hour concentration (µg/m3) (state/federal)	–/–	–/–	–/–
Number of days above state/federal standard	–/–	–/–	–/–
Fine Particulate Matter (PM2.5)			
Max 24-hour concentration (µg/m3) (state/federal)	130.5/–	31.1/–	34.0/–
Number of days above state/federal standard	–/–	–/–	–/–

µg/m³ = micrograms per cubic meter; ppm – parts per million
– Insufficient or no data currently available to determine the value
Source: CARB 2011

Attainment Status for Criteria Air Pollutants

The attainment status of the western El Dorado County portion of the Mountain Counties Air Basin is summarized in **Table 3**. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation(s) was caused by an exceptional event, as defined in the criteria.

As depicted in **Table 3**, the western El Dorado County portion of the MCAB is currently designated nonattainment for the state ozone and PM_{10} standards as well as for the federal ozone and $PM_{2.5}$ standards. This portion of the air basin is designated either attainment or unclassified for the remaining federal and state ambient air quality standards.

TABLE 3
ATTAINMENT STATUS DESIGNATIONS

Pollutant	Designation/Classification	
	State	Federal
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Unclassified	Nonattainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified

Source: CARB 2010a

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, no safe levels of exposure to TACs have been established. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death. Potential sources of TACs in the county include all gas stations, auto body shops, and printing services.

Diesel exhaust is a TAC of growing concern in California. According to the *California Almanac of Emissions and Air Quality* (CARB 2006), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). The California Air Resources Board in 1998 identified diesel engine PM as a toxic air contaminant. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic. Many of these compounds adhere to the particles, and because diesel particles are so small, they penetrate deep into the lungs. Diesel engine particulate has been identified as a human carcinogen.

Mobile sources, such as trucks, buses, automobiles, trains, ships, and farm equipment, are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections.

Odors

Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

REGULATORY AIR QUALITY SETTING

Federal Laws and Regulations

- The federal Clean Air Act (CAA) required by the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS).

State Laws and Regulations

- The California Clean Air Act (CCAA), which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS).

Local Laws, Regulations, and Policies

- The Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan and PM_{10} Implementation/Maintenance Plan and Re-Designation Request, prepared by the air districts in the greater Sacramento region in compliance with the requirements set forth in the CCAA, specifically addressed the nonattainment status for ozone and PM_{10}.
- The EDCAQMD has also adopted various rules and regulations pertaining to the control of emissions from area and stationary sources. All projects are subject to EDCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the proposed project may include, but are not limited to:
  - Rule 101 – General Provisions
  - Rule 205 – Nuisances
  - Rule 207 – Particulate Matter
  - Rule 223 – Fugitive Dust General Requirements

- Rule 223-1 – Fugitive Dust Construction Requirements
- Rule 224 – Cutback Asphalt Paving Material

AIR QUALITY IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the application of the following CEQA Guidelines Appendix G thresholds of significance:

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

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 1 ***Conflict with or obstruct implementation of any applicable air quality plan.***

As stated above, the western portion of El Dorado County is designated as nonattainment for the state and federal ozone standards. The Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan (OAP) was developed by the air districts in the Sacramento region to bring the region into attainment. The region addressed in the OAP includes the Mountain Counties Air Basin portion of El Dorado County, and thus the project site. The OAP is the regional component of the State Implementation Plan (SIP), which is the State's plan for attaining the federal 8-hour ozone standard as required by the California Clean Air Act and the federal Clean Air Act. The SIP has been prepared to identify a detailed comprehensive strategy for reducing emissions to the level needed for attainment and show how the region would make expeditious progress toward meeting this goal. The SIP assumes annual increases in air pollutant emissions resulting from regional growth (including construction-generated emissions) anticipated according to local land use plans (e.g., general plans, regional transportation plans). The SIP also assumes the incremental increase in emissions will be partially offset through the implementation of stationary, area, and indirect source control measures contained within the SIP.

In addition to not attaining the federal or state ozone standards, the region does not attain the federal $PM_{2.5}$ standards or state PM_{10} standards. Reduction of particulate matter by all feasible means is necessary to attain these particulate matter standards. The purpose of the PM_{10} Implementation/Maintenance Plan and Re-Designation Request for Sacramento County (PM_{10} Plan) is to fulfill the requirements for the EPA to redesignate the Sacramento region from nonattainment to attainment of the PM_{10} ambient air quality standards by preparing the following plan elements and tasks:

- Document the extent of the PM_{10} problem in the Sacramento region.
- Determine the emission inventory sources contributing to the PM_{10} problem.
- Identify the appropriate control measures that achieved attainment of the PM_{10} NAAQS.
- Demonstrate maintenance of the PM_{10} NAAQS.
- Request formal redesignation to attainment of the PM_{10} NAAQS.

Particulate matter directly emitted from a project is generally regarded as having regional and localized impacts; however, PM_{10} and $PM_{2.5}$ are of greatest concern during construction (e.g., the site preparation phase) of a proposed project.

According to the EDCAQMD's Guide to Air Quality Assessment (2002), a project is conforming to the air quality plans if:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NOx from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation.

2. The project does not exceed the "project alone" significance criteria.

3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the air quality plans.

4. The project complies with all applicable district rules and regulations.

As demonstrated in **Impact 2** below, adoption of the Wilson Estates project will not conflict with implementation of the applicable air quality plans, as emissions generated from project construction would not exceed the EDCAQMD thresholds of 82 pounds per day of ROG or 82 pounds per day of NOx (see **Table 5**). Furthermore, mitigation measures **MM AQ-1** and **MM AQ-2**, described in detail below, represent emission reduction measures consistent with the applicable air quality plans (i.e., OAP and PM_{10} Plan) as well as EDCAQMD rules and regulations. Therefore, since the proposed project does not require a change of existing land use designation, does not exceed any significance criteria, and is consistent with the OAP, PM_{10} Plan, and EDCAQMD rules and regulations, it is **less than significant**.

Impact 2 ***Violate any air quality standard or contribute substantially to an existing or projected air quality violation.***

Subsequent land use activities associated with implementation of the proposed project would introduce additional construction, mobile, and stationary sources of emissions, which would adversely affect regional air quality.

Short- and long-term operational emissions associated with the development potential of the proposed project were quantified using the URBEMIS 2007 land use emissions model (see **Appendix A** for model data outputs). Urbemis is software that uses the URBEMIS land use emissions inventory model to estimate greenhouse gas and criteria pollutant emissions under particular scenarios involving construction, area, and other sources. It has been designed specifically for California, though a version which applies to 49 states is in development. For the purposes of this analysis, Urbemis uses California-specific road and construction emissions factors. The URBEMIS 2007 model uses the California Air Resources Board's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. This assessment

includes quantification of net increases of ozone precursor pollutants (i.e., ROG and NOx) and airborne particulate matter (i.e., $PM_{2.5}$ and PM_{10}) attributable to the proposed project. These quantified emission projections are then compared with EDCAQMD significance thresholds established in EDCAQMD's *Guide to Air Quality Assessment* (2002).

CONSTRUCTION EMISSIONS

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. The construction and development of the proposed project would result in the temporary generation of emissions resulting from site grading and excavation, paving, and motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities.

As stated above, the EDCAQMD has adopted guidelines for determining potential adverse impacts to air quality in the region. The EDCAQMD guidelines state that construction activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the *Guide to Air Quality Assessment* (EDCAQMD 2002, Chapter 4, p. 3), if identified ROG and NO_x emissions are under the construction emissions threshold of 82 pounds generated per day and thus considered less than significant, then emissions of CO and PM_{10} would also be considered less than significant.

Table 4 illustrates the construction-related criteria and precursor emissions that would result from implementation of the proposed project.

TABLE 4
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – UNMITIGATED
(POUNDS PER DAY & TONS PER YEAR)

Construction Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Pounds per Day (Unmitigated)						
2012	3.78	29.73	24.63	0.01	141.55	30.66
2013	86.81	15.51	23.25	0.01	1.04	0.92
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	AAQS	–	AAQS	–
Exceed EDCAPC Threshold?	**Yes**	**No**	–	–	–	–

Refer to Appendix A for Model Data Outputs.

As demonstrated in **Table 4**, the proposed project would result in the exceedance of EDCAQMD thresholds for daily ROG emissions during construction activities in 2013, primarily associated with architectural coatings. Since the EDCAQMD deems construction emissions of CO and PM_{10} to be significant if ROG and NO_x are deemed so, these pollutants would be considered significant as well. Therefore, construction activities associated with the proposed project represent a **potentially significant** impact unless mitigation is applied. The following mitigation measures were formulated using methodologies recommended within the various guidelines of the EDCAQMD to control pollutant emissions.

Mitigation Measures

MM AQ-1: The proposed project shall be required to conform to all EDCAQMD Best Available Fugitive Dust Control Measures and Best Available Fugitive Dust Control Measures for High Wind Conditions as described in Appendix C-1 of the EDCAQMD *Guide to Air Quality Assessment* (2002). These dust suppression techniques are summarized below.

a. **During earth-moving activities (except construction cutting and filling areas, and mining operations):** Either maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the EDCAQMD; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR

   For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.

b. **Earth-moving – construction fill areas:** Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the District; for areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM method 1557 or other equivalent method approved by the District, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content; two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

c. **Disturbed surface areas (except completed grading areas):** Apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind-driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.

d. **Disturbed surface areas – completed grading areas:** Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions; OR

   Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR

   Establish a vegetative ground cover within 21 days after active operations have ceased; ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR

   Utilize any combination of control actions above such that, in total, they apply to all inactive disturbed surface areas.

e. **Unpaved roads:** Water all roads used for any vehicular traffic at least once per every two hours of active operations; OR

Water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph; OR

Apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.

f. **Open storage piles:** Apply chemical stabilizers; OR

Apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust; OR

Install a three-sided enclosure with walls with no more than 50 percent porosity that extends, at a minimum, to the top of the pile.

g. **Track-out control:** Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet; OR

Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.

During high wind conditions represented by gusts of over 25 miles per hour:

a. **During earth moving:** Cease all active operations; OR

Apply water to soil not more than 15 minutes prior to moving such soil.

b. **Disturbed surface areas:** On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR

Apply chemical stabilizers prior to a wind event; OR

Apply water to all unstabilized disturbed areas three times per day; if there is any evidence of wind-driven fugitive dust, watering frequency is increased to a minimum of four times per day.

c. **Unpaved roads:** Apply chemical stabilizers prior to a wind event; OR

Apply water twice per hour during active operation; OR

Stop all vehicular traffic.

d. **Open storage piles:** Apply water twice per hour; OR

Install temporary coverings.

e. **Paved road track-out:** Cover all haul vehicles; OR

Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for operation on both public and private roads.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *El Dorado County Air Quality Management District*

MM AQ-2: All architectural coating activities associated construction of the proposed project shall be required to use interior and exterior coatings that contain less than 250 grams of volatile organic compounds (VOC) per liter of coating.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *El Dorado County Air Quality Management District*

Implementation of these mitigation measures would reduce construction-related air pollutant emissions. **Table 5** illustrates the construction-related criteria and precursor emissions that would result from implementation of the proposed project after mitigation is applied.

TABLE 5
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – MITIGATED
(POUNDS PER DAY & TONS PER YEAR)

Construction Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Pounds per Day (Mitigated)						
2012	3.78	29.73	24.63	0.01	80.72	17.95
2013	78.14	15.51	23.25	0.01	1.04	0.92
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	AAQS	–	AAQS	–
Exceed EDCAPC Threshold?	No	No	–	–	–	–

Refer to Appendix A for Model Data Outputs.

As shown in **Table 5**, mitigation measures **MM AQ-1** and **MM AQ-2** would reduce construction-generated emissions of ROG to a level below EDCAQMD significance thresholds. Emissions of PM_{10} and $PM_{2.5}$ would be substantially reduced as well. As previously stated, the EDCAQMD deems construction emissions of CO and PM_{10} to be less than significant if ROG and NO_x are deemed so. Therefore, construction-related air quality impacts associated with the proposed project are **less than significant**.

OPERATIONAL EMISSIONS

Implementation of the proposed project would result in increased regional emissions of PM_{10} and $PM_{2.5}$, as well as ROG, NO_x, and CO, due to increased use of motor vehicles, natural gas, maintenance equipment, and various consumer products, thereby increasing potential operational air quality impacts. Increases in operational air impacts with implementation of the proposed project would generally consist of two sources: stationary and mobile.

As stated above, the EDCAQMD has adopted guidelines for determining potential adverse impacts to air quality in the region. The EDCAQMD guidelines state that operational activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the *Guide to Air Quality Assessment* (EDCAQMD 2002, Chapter 5, p. 2), if identified ROG and NO_x emissions are under the operation emissions threshold of 82 pounds generated per day and thus considered less than significant, then emissions of CO and PM_{10} would also be considered less than significant.

Table 6 illustrates the operations-related criteria and precursor emissions of an average year that would result from implementation of the proposed project.

TABLE 6
OPERATIONS-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS
(POUNDS PER DAY & TONS PER YEAR)

Operational Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Pounds per Day (Maximum)						
Proposed Project	20.28	12.43	141.30	0.21	18.07	10.02
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	AAQS	–	AAQS	–
Exceed EDCAPC Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Refer to Appendix A for Model Data Outputs. Emissions estimates are represented as an average between summer and winter season emission projections.

As shown in **Table 6**, project emissions would not exceed EDCAQMD significance thresholds for operational pollutants. Therefore, impacts resulting from project operations would be **less than significant**.

Impact 3 ***Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).***

The EDCAQMD's primary criterion for determining whether a project has significant cumulative impacts is whether the project is consistent with an approved plan in place for the pollutants emitted by the project (i.e., the Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan (OAP) and the PM_{10} Implementation/Maintenance Plan and Re-Designation Request for Sacramento County (PM_{10} Plan)). This criterion is applicable to both the construction

and operation phases of a project. According to the EDCAQMD's *Guide to Air Quality Assessment* (2002), a project is conforming to the air quality plans if:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NO_x from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation.

2. The project does not exceed the "project alone" significance criteria.

3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the air quality plans.

4. The project complies with all applicable district rules and regulations.

As demonstrated in **Impact 2** above, adoption of the Wilson Estates project will not conflict with implementation of the applicable air quality plans, as emissions generated from project construction would not exceed the EDCAQMD thresholds of 82 pounds per day of ROG or 82 pounds per day of NO_x (see **Table 5**). Furthermore, mitigation measures **MM AQ-1** and **MM AQ-2** represent emission reduction measures consistent with the applicable air quality plans (i.e., OAP and PM_{10} Plan) as well as EDCAQMD rules and regulations. Therefore, since the proposed project does not require a change of existing land use designation, does not exceed any significance criteria, and is consistent with the OAP, PM_{10} Plan, and EDCAQMD rules and regulations, it results in a **less than significant** cumulative impact.

Impact 4 ***Expose sensitive receptors to substantial pollutant concentrations.***

The proposed project could create a significant hazard to surrounding residents through exposure to substantial pollutant concentrations such as $PM_{2.5}$ during construction activities and/or other toxic air contaminants.

Sensitive land uses are generally defined as locations where people reside or where the presence of air emissions could adversely affect the use of the land. Typical sensitive receptors include residents, schoolchildren, hospital patients, and the elderly. Residential land uses currently surround the project site. Construction activities would involve the use of a variety of gasoline- or diesel-powered equipment that emits exhaust fumes. Surrounding residents would potentially be exposed to nuisance dust and heavy equipment emission odors (e.g., diesel exhaust) during construction. However, the duration of exposure would be short and exhaust from construction equipment dissipates rapidly. Furthermore, mitigation measure **MM AQ-1** would ensure fugitive dust (PM_{10} and $PM_{2.5}$) control measures are incorporated into the project plans to reduce the emission of fugitive dust during construction activities at the project site. Implementation of this mitigation measure would ensure sensitive receptors in the vicinity of the project site would not be exposed to substantial fugitive dust emissions.

Typically, substantial pollutant concentrations of CO are associated with mobile sources (e.g., vehicle idling time). Localized concentrations of CO are associated with congested roadways or signalized intersections operating at poor levels of service (LOS E or lower). High concentrations of CO may negatively affect local sensitive receptors (e.g., residents, schoolchildren, or hospital patients). Surrounding the project site are sensitive receptors consisting of existing residential uses and an existing roadway network of two-lane roadways with vehicle traffic controlled by stop signs. Traffic volumes in the project area are not large enough to trigger CO concentration issues. As previously described, the project would not result in significant generation of CO emissions. Therefore, the operation of the proposed project is not expected to result in impacts

to sensitive receptors. For those reasons, impacts to sensitive receptors are considered to be **less than significant.**

Impact 5 ***Create objectionable odors affecting a substantial number of people.***

Residential developments are not considered to be an emission source that would result in objectionable odors. Future construction activities could result in odorous emissions from diesel exhaust associated with construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, exposure of sensitive receptors to these emissions would be limited. In addition, the EDCAQMD has adopted a nuisance rule that addresses the exposure of nuisance discharges such as unpleasant odors. Rule 205 states that no person shall discharge from any source whatsoever such quantities of odors or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Therefore, this impact is **less than significant.**

GREENHOUSE GAS SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

For most non-industrial development projects, motor vehicles make up the bulk of GHG emissions produced on an operational basis. The primary greenhouse gases emitted by motor vehicles include carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons (CARB 2004). Following are descriptions of the primary greenhouse gases attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

EFFECTS OF GLOBAL CLIMATE CHANGE

With more than a decade of concerted research, scientists have established that the early signs of climate change are already evident in the state—as shown, for example, in increased average temperatures, changes in temperature extremes, reduced snowpack in the Sierra Nevada, sea level rise, and ecological shifts.

Many scientists believe that these changes are accelerating—locally, across the country, and around the globe. As a result of emissions already released into the atmosphere, California is anticipated to face intensifying climate changes in coming decades (CNRA 2009). Generally, research indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures, and accelerating sea level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing (CNRA 2009).

Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following (CNRA 2009):

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.
- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer, and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- As GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4 degrees Fahrenheit (an increase one to three times as large as that which occurred over the entire 20th century).
- By 2100, the models project temperature increases between 3.6 and 9 degrees Fahrenheit.

Precipitation levels are expected to change over the 21st century, though models differ in determining where and how much rain and snowfall patterns will change (CNRA 2009). Eleven out of 12 precipitation models run by the Scripps Institution of Oceanography suggest a small to significant (12–35 percent) overall decrease in precipitation levels by mid-century (CNRA 2009). In addition, higher temperatures increase evaporation and make for a generally drier climate, as higher temperatures hasten snowmelt and increase evaporation and make for a generally drier climate. Moreover, the 2009 California Climate Adaptation Strategy concludes that more precipitation will fall as rain rather than as snow, with important implications for water management in the state. California communities have largely depended on runoff from yearly established snowpack to provide the water supplies during the warmer, drier months of late spring, summer, and early autumn. With rainfall and meltwater running off earlier in the year, the state will face increasing challenges of storing the water for the dry season while protecting Californians downstream from floodwaters during the wet season.

There may be dramatic changes in average temperature and precipitation. In the next few decades, it is likely that the state will face a growing number of climate-change-related extreme events such as heat waves, wildfires, droughts, and floods. Because communities, infrastructure, and other assets are at risk, such events can cause significant damages and are already responsible for a large fraction of near-term climate-related impacts every year (CNRA 2009).

REGULATORY FRAMEWORK

The following federal, state, and local regulations, plans, programs, and guidelines are applicable to the proposed project:

State Laws and Regulations

Beginning in 2002, California has enacted the following acts, executive orders, and administrative practices to address climate change and greenhouse gas emissions:

- Assembly Bill (AB) 1493, codified at Health and Safety Code Sections 42823 and 43018.5

- Senate Bill (SB) 1771 – Greenhouse Gas Emission Reductions: Climate Change, codified at Health and Safety Code Section 42800 et seq. and Public Resources Code Section 25730 et seq.
- Executive Order S-3-05 (2005)
- AB 32, the Global Warming Solutions Act, codified at Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599
- SB 375, codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01 as well as Public Resources Code Sections 21061.3, 21159.28, and Chapter 4.2
- SB 1368, codified at Public Utilities Code Chapter 3
- SB 1771, codified at Health and Safety Code Article 6 and Public Resources Code Chapter 8.5
- SB 527, codified at Health and Safety Code Sections 42400.4, 42801, 42810, 42821–42824, 42840–42843, 42860, 42870, 43021, 42410, 42801.1, 43023
- SB 1078, Public Utilities Code Sections 387, 390.1, 399.25 and Article 16
- Executive Order S-13-08 (2008)
- California Building Standards Code – Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, established in 1978 in response to a legislative mandate to reduce California's energy consumption
- Climate Change Scoping Plan – In October of 2008, CARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32.

GREENHOUSE GAS IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the application of the following State CEQA Guidelines Appendix G thresholds of significance:

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

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 1 ***Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.***

Implementation of the proposed project could contribute to increases of GHG emissions that are associated with global climate change, such as CO_2, N_2O, and CH_4. Changes to state law, the Global Warming Solutions Act of 2006, have established requirements to begin to deal with greenhouse gas emissions in California. One of the requirements in the law is for environmental documents to identify greenhouse gas emissions that are expected to occur as a result of the construction and operation of projects within the state.

The proposed project is under the jurisdiction of the EDCAQMD, which does not currently have an adopted threshold of significance for GHG emissions. Thresholds of significance illustrate the extent of an impact and are a basis from which to apply mitigation measures.

Short-Term Construction

In April 2011, the Sacramento Metropolitan Air Quality Management District (SMAQMD) updated its CEQA Guide to Air Quality Assessment to include guidance for assessing and mitigating construction-related GHG emissions. While the SMAQMD does not have a threshold of significance for GHG emissions either, SMAQMD recommends addressing the potential impacts of construction-generated GHG emissions by quantifying the finite mass emissions of GHGs that would be generated by project construction, and the input parameters and assumptions used to estimate these values, as well as a discussion of feasible mitigation necessary to reduce impacts. For the purposes of evaluating the proposed project's construction-related GHG impacts, emissions resulting from construction of the proposed project will be quantified and GHG emission reduction strategies will be identified. This methodology was considered appropriate by the EDCAQMD (Otani 2011).

During construction activities, GHGs would be emitted from the operation of construction equipment and from worker and building supply vendor vehicles. **Table 7** illustrates the construction-related carbon dioxide equivalent (CO_2e) emissions that would result from implementation of the proposed project. Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 21 times more heat per molecule than CO_2, and N_2O absorbs 310 times more heat per molecule than CO_2. Greenhouse gas emissions are presented in CO_2e, which weight each gas by its global warming potential. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

The resultant emissions of these activities were calculated using the CalEEMod model (see **Appendix B.** CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. As indicated, construction of the development allowed under the proposed project would generate total emissions of approximately 630 metric tons of CO_2e in the first year of construction.

TABLE 7
CONSTRUCTION-RELATED GHG EMISSIONS (AVERAGE YEAR)
(METRIC TONS PER YEAR)

Source	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
Construction Activities				
Year 1	629	0.08	0.00	631
Year 2	521	0.06	0.00	522
Year 3 (if necessary)	81	0.01	0.00	82

Refer to Appendix B for Model Data Outputs.

The SMAQMD recommends the identification of GHG reduction strategies during construction activities. Therefore, without an attempt to mitigate construction-generated GHG emissions, development of the project would be **potentially significant.** The proposed project shall be subject to the following measures in effect at the time of construction as mandated in mitigation measure **MM GHG-1**.

Mitigation Measures

MM GHG-1: The proposed project shall be required to implement the following management practices during construction activities:

a) Perform 90-day low-NO_x tune-ups for off-road equipment operating during construction.

b) Limit allowable idling to 5 minutes for trucks and heavy equipment.

c) Construction operators shall use Tier 3-rated engines during site grading for all equipment exceeding 100 horsepower, if feasible.

d) Construction operators shall utilize equipment with engines equipped with diesel oxidation catalysts, if available.

e) Construction operators shall utilize diesel particulate filter and diesel oxidation catalyst on heavy equipment, where feasible.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *El Dorado County Air Quality Management District*

Adherence to mitigation measure **MM GHG-1** would reduce construction-related GHG emissions. Therefore, the construction-related GHG impacts of the proposed project would be considered **less than significant.**

Long-Term Operation

As stated above, the EDCAQMD does not currently have an adopted threshold of significance for GHG emissions. In January 2009, the State of California, through the California Air Resources Board (CARB), published its interim greenhouse gas threshold. This interim GHG threshold has

been set at 1,600 metric tons of carbon dioxide equivalents ($MTCO_2e$) per year for residential projects such as the proposed land use. In other words, projects resulting in the generation of more than 1,600 $MTCO_2e$ per year would surpass the CARB interim GHG threshold and be considered a significant impact. For the purposes of evaluating the proposed project's GHG operational impacts, emissions resulting from project operations have been quantified and the quantified emissions are compared with the CARB interim GHG threshold. This methodology was considered appropriate by the EDCAQMD (Otani 2011).

Table 8 illustrates the operational-related CO_2e emissions projected to be generated annually after construction of the project. The resultant emissions of these activities were calculated using the CalEEMod model (see **Appendix B**.

TABLE 8
OPERATIONAL GREENHOUSE GAS EMISSIONS
(METRIC TONS PER YEAR)

Emission Type	CO_2e
Operations	
Area Source (landscaping, hearth)	144
Energy (electricity and natural gas)	237
Mobile (vehicles)	874
Waste	20
Water Conveyance	12
Total	1,287
California Air Resources Board Interim Greenhouse Gas Threshold	1,600
Threshold Exceeded?	No

Refer to Appendix B for Model Data Outputs.

As shown in **Table 8**, GHG emissions projected to result with development and operations of the proposed project would not exceed the CARB interim GHG threshold of 1,600 $MTCO_2e$ per year. Therefore, the project's impact is considered **less than significant.**

Impact 2 ***Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.***

El Dorado County does not have local policies or ordinances with the purpose of reducing GHG emissions with the exception of El Dorado County Board of Supervisors Environmental Vision for El Dorado County, Resolution No. 29-2008, which sets forth broad goals to address positive environmental changes. Some of the primary goals of Resolution No. 29-2008 are to promote carpooling, reduce vehicle miles traveled, and promote recycling and utilization of recycled products. There are no aspects of the proposed project that would inhibit these goals.

The County is subject to compliance with the Global Warming Solutions Act (AB 32), which set 2020 GHG emissions reduction goals into law. As identified in **Table 8**, the proposed project would not exceed CARB interim GHG significance thresholds that were established with the purpose of complying with AB 32. Also, adherence to mitigation measure **MM GHG-1** would reduce construction-related GHG emissions. Therefore, the proposed project would not conflict with AB 32, and this impact is **less than significant.**

REFERENCES

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APPENDICES

APPENDIX A

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\AQ-GHG Models\Wilson Estates\Urbemis\Wilson Estates.urb924

Project Name: Wilson Estates

Project Location: Mountain Counties Air Basin

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2012 TOTALS (lbs/day unmitigated)	3.78	29.73	24.63	0.01	140.01	1.54	141.55	29.24	1.42	30.66
2012 TOTALS (lbs/day mitigated)	3.78	29.73	24.63	0.01	79.18	1.54	80.72	16.54	1.42	17.95
2013 TOTALS (lbs/day unmitigated)	86.81	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
2013 TOTALS (lbs/day mitigated)	78.14	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	4.33	0.78	3.00	0.00	0.01	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	7.45	8.42	82.77	0.05	9.59	1.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	11.78	9.20	85.77	0.05	9.60	1.87

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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

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Time Slice 3/30/2012-5/11/2012 Active Days: 31	3.78	29.73	18.15	0.00	140.01	1.54	141.55	29.24	1.42	30.66
Fine Grading 03/30/2012-05/11/2012	3.78	29.73	18.15	0.00	140.01	1.54	141.55	29.24	1.42	30.66
Fine Grading Dust	0.00	0.00	0.00	0.00	140.00	0.00	140.00	29.24	0.00	29.24
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	1.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01
Time Slice 5/14/2012-6/11/2012 Active Days: 21	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Asphalt 05/12/2012-06/11/2012	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Paving Off-Gas	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07
Paving On Road Diesel	0.15	2.21	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08
Paving Worker Trips	0.12	0.19	3.05	0.00	0.01	0.01	0.02	0.00	0.00	0.01
Time Slice 6/12/2012-12/31/2012 Active Days: 145	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building 06/12/2012-02/22/2013	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.08	0.98	0.92	0.00	0.01	0.04	0.04	0.00	0.03	0.04
Building Worker Trips	0.51	0.81	13.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 1/1/2013-2/22/2013 Active Days: 39	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building 06/12/2012-02/22/2013	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.08	0.87	0.85	0.00	0.01	0.03	0.04	0.00	0.03	0.03
Building Worker Trips	0.46	0.74	12.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03

Time Slice 2/25/2013-4/12/2013 Active Days: 35	86.81	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Coating 02/23/2013-04/12/2013	86.81	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Architectural Coating	86.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Phase Assumptions

Phase: Fine Grading 3/30/2012 - 5/11/2012 - Fine Site Grading

Total Acres Disturbed: 28

Maximum Daily Acreage Disturbed: 7

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

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

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

Phase: Paving 5/12/2012 - 6/11/2012 - Paving

Acres to be Paved: 7

Off-Road Equipment:

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

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

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

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

Phase: Building Construction 6/12/2012 - 2/22/2013 - Building Construction

Off-Road Equipment:

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1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

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

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

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

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 2/23/2013 - 4/12/2013 - Architectural Coating

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

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Time Slice 3/30/2012-5/11/2012 Active Days: 31	3.78	29.73	18.15	0.00	79.18	1.54	80.72	16.54	1.42	17.95
Fine Grading 03/30/2012-05/11/2012	3.78	29.73	18.15	0.00	79.18	1.54	80.72	16.54	1.42	17.95
Fine Grading Dust	0.00	0.00	0.00	0.00	79.17	0.00	79.17	16.53	0.00	16.53
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	1.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01

Time Slice 5/14/2012-6/11/2012 Active Days: 21	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Asphalt 05/12/2012-06/11/2012	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Paving Off-Gas	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07
Paving On Road Diesel	0.15	2.21	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08
Paving Worker Trips	0.12	0.19	3.05	0.00	0.01	0.01	0.02	0.00	0.00	0.01
Time Slice 6/12/2012-12/31/2012 Active Days: 145	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building 06/12/2012-02/22/2013	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.08	0.98	0.92	0.00	0.01	0.04	0.04	0.00	0.03	0.04
Building Worker Trips	0.51	0.81	13.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 1/1/2013-2/22/2013 Active Days: 39	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building 06/12/2012-02/22/2013	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.08	0.87	0.85	0.00	0.01	0.03	0.04	0.00	0.03	0.03
Building Worker Trips	0.46	0.74	12.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 2/25/2013-4/12/2013 Active Days: 35	78.14	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Coating 02/23/2013-04/12/2013	78.14	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Architectural Coating	78.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/30/2012 - 5/11/2012 - Fine Site Grading

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

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 2/23/2013 - 4/12/2013 - Architectural Coating

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

ROG: 10%

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

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.06	0.75	0.32	0.00	0.00	0.00
Hearth - No Summer Emissions						
Landscape	0.48	0.03	2.68	0.00	0.01	0.01
Consumer Products	2.94					
Architectural Coatings	0.85					
TOTALS (lbs/day, unmitigated)	4.33	0.78	3.00	0.00	0.01	0.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	7.45	8.42	82.77	0.05	9.59	1.86
TOTALS (lbs/day, unmitigated)	7.45	8.42	82.77	0.05	9.59	1.86

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	28.00	10.83	dwelling units	60.00	649.80	5,555.60
					649.80	5,555.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.5	0.9	98.8	0.3
Light Truck < 3750 lbs	24.5	2.4	89.4	8.2
Light Truck 3751-5750 lbs	19.7	1.0	98.5	0.5
Med Truck 5751-8500 lbs	9.2	1.1	97.8	1.1
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	68.0	32.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	41.7	58.3
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	54.7	45.3	0.0
School Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: H:\AQ-GHG Models\Wilson Estates\Urbemis\Wilson Estates.urb924

Project Name: Wilson Estates

Project Location: Mountain Counties Air Basin

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2012 TOTALS (lbs/day unmitigated)	3.78	29.73	24.63	0.01	140.01	1.54	141.55	29.24	1.42	30.66
2012 TOTALS (lbs/day mitigated)	3.78	29.73	24.63	0.01	79.18	1.54	80.72	16.54	1.42	17.95
2013 TOTALS (lbs/day unmitigated)	86.81	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
2013 TOTALS (lbs/day mitigated)	78.14	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	20.47	3.02	105.20	0.33	16.95	16.31

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	8.32	12.64	91.63	0.05	9.59	1.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	28.79	15.66	196.83	0.38	26.54	18.17

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

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

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Time Slice 3/30/2012-5/11/2012 Active Days: 31	3.78	29.73	18.15	0.00	140.01	1.54	141.55	29.24	1.42	30.66
Fine Grading 03/30/2012-05/11/2012	3.78	29.73	18.15	0.00	140.01	1.54	141.55	29.24	1.42	30.66
Fine Grading Dust	0.00	0.00	0.00	0.00	140.00	0.00	140.00	29.24	0.00	29.24
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	1.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01
Time Slice 5/14/2012-6/11/2012 Active Days: 21	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Asphalt 05/12/2012-06/11/2012	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Paving Off-Gas	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07
Paving On Road Diesel	0.15	2.21	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08
Paving Worker Trips	0.12	0.19	3.05	0.00	0.01	0.01	0.02	0.00	0.00	0.01
Time Slice 6/12/2012-12/31/2012 Active Days: 145	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building 06/12/2012-02/22/2013	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.08	0.98	0.92	0.00	0.01	0.04	0.04	0.00	0.03	0.04
Building Worker Trips	0.51	0.81	13.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 1/1/2013-2/22/2013 Active Days: 39	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building 06/12/2012-02/22/2013	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.08	0.87	0.85	0.00	0.01	0.03	0.04	0.00	0.03	0.03
Building Worker Trips	0.46	0.74	12.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03

Time Slice 2/25/2013-4/12/2013 Active Days: 35	86.81	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Coating 02/23/2013-04/12/2013	86.81	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Architectural Coating	86.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Phase Assumptions

Phase: Fine Grading 3/30/2012 - 5/11/2012 - Fine Site Grading

Total Acres Disturbed: 28

Maximum Daily Acreage Disturbed: 7

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

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

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

Phase: Paving 5/12/2012 - 6/11/2012 - Paving

Acres to be Paved: 7

Off-Road Equipment:

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

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

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

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

Phase: Building Construction 6/12/2012 - 2/22/2013 - Building Construction

Off-Road Equipment:

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1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

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

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

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

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 2/23/2013 - 4/12/2013 - Architectural Coating

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

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Time Slice 3/30/2012-5/11/2012 Active Days: 31	3.78	29.73	18.15	0.00	79.18	1.54	80.72	16.54	1.42	17.95
Fine Grading 03/30/2012-05/11/2012	3.78	29.73	18.15	0.00	79.18	1.54	80.72	16.54	1.42	17.95
Fine Grading Dust	0.00	0.00	0.00	0.00	79.17	0.00	79.17	16.53	0.00	16.53
Fine Grading Off Road Diesel	3.71	29.61	16.24	0.00	0.00	1.54	1.54	0.00	1.42	1.42
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.07	0.12	1.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01

Time Slice 5/14/2012-5/11/2012 Active Days: 21	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Asphalt 05/12/2012-06/11/2012	3.33	15.88	11.89	0.01	0.02	1.25	1.28	0.01	1.15	1.16
Paving Off-Gas	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07
Paving On Road Diesel	0.15	2.21	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08
Paving Worker Trips	0.12	0.19	3.05	0.00	0.01	0.01	0.02	0.00	0.00	0.01
Time Slice 6/12/2012-12/31/2012 Active Days: 145	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building 06/12/2012-02/22/2013	3.73	16.60	24.63	0.01	0.05	1.10	1.15	0.02	1.01	1.02
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.08	0.98	0.92	0.00	0.01	0.04	0.04	0.00	0.03	0.04
Building Worker Trips	0.51	0.81	13.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 1/1/2013-2/22/2013 Active Days: 39	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building 06/12/2012-02/22/2013	3.42	15.51	23.25	0.01	0.05	0.99	1.04	0.02	0.90	0.92
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.08	0.87	0.85	0.00	0.01	0.03	0.04	0.00	0.03	0.03
Building Worker Trips	0.46	0.74	12.20	0.01	0.04	0.02	0.07	0.02	0.02	0.03
Time Slice 2/25/2013-4/12/2013 Active Days: 35	78.14	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Coating 02/23/2013-04/12/2013	78.14	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Architectural Coating	78.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/30/2012 - 5/11/2012 - Fine Site Grading

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

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 2/23/2013 - 4/12/2013 - Architectural Coating

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

ROG: 10%

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

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.06	0.75	0.32	0.00	0.00	0.00
Hearth	16.62	2.27	104.88	0.33	16.95	16.31
Landscaping - No Winter Emissions						
Consumer Products	2.94					
Architectural Coatings	0.85					
TOTALS (lbs/day, unmitigated)	20.47	3.02	105.20	0.33	16.95	16.31

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	8.32	12.64	91.63	0.05	9.59	1.86
TOTALS (lbs/day, unmitigated)	8.32	12.64	91.63	0.05	9.59	1.86

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	28.00	10.83	dwelling units	60.00	649.80	5,555.60
					649.80	5,555.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.5	0.9	98.8	0.3
Light Truck < 3750 lbs	24.5	2.4	89.4	8.2
Light Truck 3751-5750 lbs	19.7	1.0	98.5	0.5
Med Truck 5751-8500 lbs	9.2	1.1	97.8	1.1
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	68.0	32.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	41.7	58.3
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	54.7	45.3	0.0
School Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Operational Changes to Defaults

APPENDIX B

Wilson Estates - Greenhouse Gases

El Dorado County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Single Family Housing	60	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	70		

1.3 User Entered Comments

Project Characteristics -

Land Use - Project Site - 28 Acres

Construction Phase - Project Has No Demoltion Phase

Vehicle Trips - 10.83 Average Daily Trips Per Kimley-Horn and Associates, Inc., 2011

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011											0.00	629.36	629.36	0.08	0.00	630.95
2012											0.00	521.14	521.14	0.06	0.00	522.44
2013											0.00	81.48	81.48	0.01	0.00	81.73
Total											**0.00**	**1,231.98**	**1,231.98**	**0.15**	**0.00**	**1,235.12**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011											0.00	629.36	629.36	0.08	0.00	630.95
2012											0.00	521.14	521.14	0.06	0.00	522.44
2013											0.00	81.48	81.48	0.01	0.00	81.73
Total											**0.00**	**1,231.98**	**1,231.98**	**0.15**	**0.00**	**1,235.12**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											61.98	78.71	140.69	0.06	0.01	143.74
Energy											0.00	236.03	236.03	0.01	0.00	237.49
Mobile											0.00	873.03	873.03	0.06	0.00	874.29
Waste											8.73	0.00	8.73	0.52	0.00	19.56
Water											0.00	8.71	8.71	0.12	0.00	12.18
Total											**70.71**	**1,196.48**	**1,267.19**	**0.77**	**0.01**	**1,287.26**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											61.98	78.71	140.69	0.06	0.01	143.74
Energy											0.00	236.03	236.03	0.01	0.00	237.49
Mobile											0.00	873.03	873.03	0.06	0.00	874.29
Waste											8.73	0.00	8.73	0.52	0.00	19.56
Water											0.00	8.71	8.71	0.12	0.00	12.18
Total											**70.71**	**1,196.48**	**1,267.19**	**0.77**	**0.01**	**1,287.26**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	72.53	72.53	0.01	0.00	72.72
Total											**0.00**	**72.53**	**72.53**	**0.01**	**0.00**	**72.72**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	1.58	1.58	0.00	0.00	1.58
Total											**0.00**	**1.58**	**1.58**	**0.00**	**0.00**	**1.58**

3.3 Site Preparation - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	72.53	72.53	0.01	0.00	72.72
Total											**0.00**	**72.53**	**72.53**	**0.01**	**0.00**	**72.72**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	1.58	1.58	0.00	0.00	1.58
Total											**0.00**	**1.58**	**1.58**	**0.00**	**0.00**	**1.58**

3.4 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	221.54	221.54	0.02	0.00	222.05
Total											**0.00**	**221.54**	**221.54**	**0.02**	**0.00**	**222.05**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	3.94	3.94	0.00	0.00	3.95
Total											**0.00**	**3.94**	**3.94**	**0.00**	**0.00**	**3.95**

3.4 Grading - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	221.54	221.54	0.02	0.00	222.05
Total											**0.00**	**221.54**	**221.54**	**0.02**	**0.00**	**222.05**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	3.94	3.94	0.00	0.00	3.95
Total											**0.00**	**3.94**	**3.94**	**0.00**	**0.00**	**3.95**

3.5 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	302.33	302.33	0.04	0.00	303.19
Total											**0.00**	**302.33**	**302.33**	**0.04**	**0.00**	**303.19**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	11.55	11.55	0.00	0.00	11.56
Worker											0.00	15.89	15.89	0.00	0.00	15.91
Total											**0.00**	**27.44**	**27.44**	**0.00**	**0.00**	**27.47**

3.5 Building Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	302.33	302.33	0.04	0.00	303.19
Total											**0.00**	**302.33**	**302.33**	**0.04**	**0.00**	**303.19**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	11.55	11.55	0.00	0.00	11.56
Worker											0.00	15.89	15.89	0.00	0.00	15.91
Total											**0.00**	**27.44**	**27.44**	**0.00**	**0.00**	**27.47**

3.5 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	478.23	478.23	0.06	0.00	479.48
Total											**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	18.36	18.36	0.00	0.00	18.37
Worker											0.00	24.55	24.55	0.00	0.00	24.59
Total											**0.00**	**42.91**	**42.91**	**0.00**	**0.00**	**42.96**

3.5 Building Construction - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	478.23	478.23	0.06	0.00	479.48
Total											**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	18.36	18.36	0.00	0.00	18.37
Worker											0.00	24.55	24.55	0.00	0.00	24.59
Total											**0.00**	**42.91**	**42.91**	**0.00**	**0.00**	**42.96**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	25.65	25.65	0.00	0.00	25.71
Total											**0.00**	**25.65**	**25.65**	**0.00**	**0.00**	**25.71**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.99	0.99	0.00	0.00	0.99
Worker											0.00	1.29	1.29	0.00	0.00	1.29
Total											**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	25.65	25.65	0.00	0.00	25.71
Total											**0.00**	**25.65**	**25.65**	**0.00**	**0.00**	**25.71**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.99	0.99	0.00	0.00	0.99
Worker											0.00	1.29	1.29	0.00	0.00	1.29
Total											**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.6 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	46.31	46.31	0.01	0.00	46.47
Paving											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**46.31**	**46.31**	**0.01**	**0.00**	**46.47**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	2.19	2.19	0.00	0.00	2.20
Total											**0.00**	**2.19**	**2.19**	**0.00**	**0.00**	**2.20**

3.6 Paving - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.00	46.31	46.31	0.01	0.00	46.47
Paving											0.00	0.00	0.00	0.00	0.00	0.00
Total											**0.00**	**46.31**	**46.31**	**0.01**	**0.00**	**46.47**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	2.19	2.19	0.00	0.00	2.20
Total											**0.00**	**2.19**	**2.19**	**0.00**	**0.00**	**2.20**

3.7 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	4.46	4.46	0.00	0.00	4.48
Total											**0.00**	**4.46**	**4.46**	**0.00**	**0.00**	**4.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	0.58	0.58	0.00	0.00	0.59
Total											**0.00**	**0.58**	**0.58**	**0.00**	**0.00**	**0.59**

3.7 Architectural Coating - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.00	0.00	0.00	0.00	0.00	0.00
Off-Road											0.00	4.46	4.46	0.00	0.00	4.48
Total											**0.00**	**4.46**	**4.46**	**0.00**	**0.00**	**4.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.00	0.00	0.00	0.00	0.00	0.00
Vendor											0.00	0.00	0.00	0.00	0.00	0.00
Worker											0.00	0.58	0.58	0.00	0.00	0.59
Total											**0.00**	**0.58**	**0.58**	**0.00**	**0.00**	**0.59**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.00	873.03	873.03	0.06	0.00	874.29
Unmitigated											0.00	873.03	873.03	0.06	0.00	874.29
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	649.80	649.80	649.80	1,861,380	1,861,380
Total	649.80	649.80	649.80	1,861,380	1,861,380

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.00	119.64	119.64	0.01	0.00	120.39
Electricity Unmitigated											0.00	119.64	119.64	0.01	0.00	120.39
NaturalGas Mitigated											0.00	116.39	116.39	0.00	0.00	117.09
NaturalGas Unmitigated											0.00	116.39	116.39	0.00	0.00	117.09
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Single Family Housing	2.18098e+006											0.00	116.39	116.39	0.00	0.00	117.09
Total												0.00	116.39	116.39	0.00	0.00	117.09

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Single Family Housing	2.18098e+006											0.00	116.39	116.39	0.00	0.00	117.09
Total												**0.00**	**116.39**	**116.39**	**0.00**	**0.00**	**117.09**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Single Family Housing	411275					119.64	0.01	0.00	120.39
Total						**119.64**	**0.01**	**0.00**	**120.39**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Single Family Housing	411275					119.64	0.01	0.00	120.39
Total						**119.64**	**0.01**	**0.00**	**120.39**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											61.98	78.71	140.69	0.06	0.01	143.74
Unmitigated											61.98	78.71	140.69	0.06	0.01	143.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Hearth											61.98	77.98	139.95	0.06	0.01	142.98
Landscaping											0.00	0.74	0.74	0.00	0.00	0.75
Total											**61.98**	**78.72**	**140.69**	**0.06**	**0.01**	**143.73**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products											0.00	0.00	0.00	0.00	0.00	0.00
Hearth											61.98	77.98	139.95	0.06	0.01	142.98
Landscaping											0.00	0.74	0.74	0.00	0.00	0.75
Total											**61.98**	**78.72**	**140.69**	**0.06**	**0.01**	**143.73**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					8.71	0.12	0.00	12.18
Unmitigated					8.71	0.12	0.00	12.18
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Single Family Housing	3.90924 / 2.46452					8.71	0.12	0.00	12.18
Total						**8.71**	**0.12**	**0.00**	**12.18**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Single Family Housing	3.90924 / 2.46452					8.71	0.12	0.00	12.18
Total						**8.71**	**0.12**	**0.00**	**12.18**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					8.73	0.52	0.00	19.56
Unmitigated					8.73	0.52	0.00	19.56
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Single Family Housing	43					8.73	0.52	0.00	19.56
Total						**8.73**	**0.52**	**0.00**	**19.56**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Single Family Housing	43					8.73	0.52	0.00	19.56
Total						**8.73**	**0.52**	**0.00**	**19.56**

9.0 Vegetation

WILSON ESTATES

AIR QUALITY AND GREENHOUSE GAS EMISSIONS UPDATE

Prepared by:

PMC®

2729 PROSPECT PARK DRIVE, SUITE 220
RANCHO CORDOVA, CA 95670

OCTOBER 2012

Exhibit U–Attachment 7

INTRODUCTION

This report documents the results of both an air quality impact analysis and greenhouse gas (GHG) impact analysis completed for the updated of the proposed Wilson Estates project.

CRITERIA AIR POLLUTANTS

CONSTRUCTION EMISSIONS

The El Dorado County Air Quality Management District (EDCAQMD) has adopted guidelines for determining potential adverse impacts to air quality in the region. The EDCAQMD guidelines state that construction activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the *Guide to Air Quality Assessment* (EDCAQMD 2002, Chapter 4, p. 3), if identified ROG and NO_x emissions are under the construction emissions threshold of 82 pounds generated per day and thus considered less than significant, then emissions of CO and PM_{10} would also be considered less than significant.

Table 1 illustrates the construction-related criteria and precursor emissions that would result from implementation of the proposed project.

TABLE 1
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS
(POUNDS PER DAY)

Construction Phases	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions - Pounds per Day (Unmitigated)						
Construction	79.29	65.70	37.06	0.07	11.38	6.41
Winter Emissions - Pounds per Day (Unmitigated)						
Construction	79.29	65.71	36.97	0.07	11.38	6.41
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	--	--	--	--
Exceed SMAQMD Threshold?	**No**	**No**	--	--	--	--

Source: CalEEMod version 2011.1.1. Diesel-fueled construction equipment load factors reduced 33% to account for offroad emission overestimation (CARB 2010).

As demonstrated in **Table 1**, the proposed project would not result in the exceedance of EDCAQMD thresholds for daily emissions during construction activities.

OPERATIONAL EMISSIONS

EDCAQMD has adopted guidelines for determining potential adverse impacts to air quality in the region. The EDCAQMD guidelines state that operational activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the *Guide to Air Quality Assessment* (EDCAQMD 2002, Chapter 5, p. 2), if identified ROG and NO_x emissions are under the operation emissions

threshold of 82 pounds generated per day and thus considered less than significant, then emissions of CO and PM_{10} would also be considered less than significant.

Table 2 illustrates the operations-related criteria and precursor emissions of an average year that would result from implementation of the proposed project.

TABLE 2
OPERATIONS-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS
(POUNDS PER DAY & TONS PER YEAR)

Construction Phases	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions - Pounds per Day (Unmitigated)						
Project Buildout	32.67	5.44	74.65	0.08	10.45	5.79
Winter Emissions - Pounds per Day (Unmitigated)						
Project Buildout	32.85	5.83	74.32	0.08	10.45	5.79
SMAQMD Potentially Significant Impact Threshold	65 pounds/day	65 pounds/day	AAQS	–	AAQS	–
Exceed SMAQMD Threshold?	**No**	**No**	–	–	–	–

Source: CalEEMod version 2011.1.1.

As shown in **Table 2**, project emissions would not exceed EDCAQMD significance thresholds for operational pollutants.

GREENHOUSE GAS EMISSIONS

Thresholds of significance illustrate the extent of an impact and are a basis from which to apply mitigation measures. Significance thresholds for greenhouse gas emissions resulting from land use development projects have not been established in El Dorado County (the El Dorado County Air Quality Management District (EDCAQMD) has not yet established significance thresholds for GHG emissions from project operations). In April 2012, the San Luis Obispo County Air Pollution Control District (SLOAPCD) published its GHG threshold. Utilization of SLOAPCD's GHG threshold was considered reasonable and appropriate by EDCAQMD staff.

As shown in **Table 3**, the long-term operations of the proposed project would produce 939 metric tons of CO_2e annually, primarily from motor vehicles that travel to and from the site.

TABLE 3
OPERATIONAL GREENHOUSE GAS EMISSIONS – METRIC TONS PER YEAR (UNMITIGATED)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Amortized over 30 Years	11	0	0	11
Area	115	0.05	0	117
Energy	193	0.01	0	194
Mobile	601	0.03	0	601

Source	CO_2	CH_4	N_2O	CO_2e
Solid Waste	7	0.42	0	16
Water	7	0.10	0	10
Total	**934**	**0.61**	**0**	**949**

Source: CalEEMod version 2011.1.1. Diesel-fueled construction equipment load factors reduced 33% to account for offroad emission overestimation (CARB 2010). See ***Appendix A*** *for emission model outputs.*

As shown in **Table 3**, estimated GHG emissions resulting from both construction and operations of the currently entitled land use would equal 949 metric tons of CO_2e per year, which less the SLOAPCD GHG threshold of 1,150 metric tons of CO_2e per year.

Reference:

California Air Resources Board (CARB). 2010b. *Staff Report: Proposed Amendments to the Regulation for In-Use Off Road Diesel-Fueled Fleets and the OFFROAD Large Spark-Ignition Fleet Requirements.* October 2010.

Wilson Estates

El Dorado County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Single Family Housing	49	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	70		

1.3 User Entered Comments

Off-road Equipment - Diesel-fueled construction equipment load factors reduced 33% to account for offroad emission overestimation.

Source - California Air Resources Board. 2010. "Staff Report: Proposed Amendments to the Regulation for In-Use Off Road Diesel-Fueled Fleets and the OFFROAD Large Spark-Ignition Fleet Requirements." October 2010.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	1.85	3.06	2.17	0.00	0.08	0.20	0.28	0.03	0.20	0.23	0.00	329.33	329.33	0.04	0.00	330.11
Total	**1.85**	**3.06**	**2.17**	**0.00**	**0.08**	**0.20**	**0.28**	**0.03**	**0.20**	**0.23**	**0.00**	**329.33**	**329.33**	**0.04**	**0.00**	**330.11**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.57	0.05	4.17	0.00		0.00	0.54		0.00	0.54	50.61	64.28	114.90	0.05	0.00	117.38
Energy	0.01	0.08	0.03	0.00		0.00	0.01		0.00	0.01	0.00	192.76	192.76	0.01	0.00	193.95
Mobile	0.65	0.83	5.52	0.01	0.63	0.03	0.65	0.01	0.02	0.03	0.00	600.59	600.59	0.03	0.00	601.29
Waste						0.00	0.00		0.00	0.00	7.10	0.00	7.10	0.42	0.00	15.92
Water						0.00	0.00		0.00	0.00	0.00	7.11	7.11	0.10	0.00	9.95
Total	**4.23**	**0.96**	**9.72**	**0.01**	**0.63**	**0.03**	**1.20**	**0.01**	**0.02**	**0.58**	**57.71**	**864.74**	**922.46**	**0.61**	**0.00**	**938.49**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.06	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.06	0.49	0.27	0.00		0.02	0.02		0.02	0.02	0.00	49.68	49.68	0.00	0.00	49.78
Total	**0.06**	**0.49**	**0.27**	**0.00**	**0.06**	**0.02**	**0.08**	**0.03**	**0.02**	**0.05**	**0.00**	**49.68**	**49.68**	**0.00**	**0.00**	**49.78**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	1.25	0.00	0.00	1.26
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**	**0.00**	**0.00**	**1.26**

3.3 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.31	2.05	1.43	0.00		0.13	0.13		0.13	0.13	0.00	219.62	219.62	0.03	0.00	220.15
Total	0.31	2.05	1.43	0.00		0.13	0.13		0.13	0.13	0.00	219.62	219.62	0.03	0.00	220.15

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.84	8.84	0.00	0.00	8.85
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.30
Total	0.02	0.06	0.15	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	20.12	20.12	0.00	0.00	20.15

3.4 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.40	0.25	0.00		0.03	0.03		0.03	0.03	0.00	31.41	31.41	0.01	0.00	31.52
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.07	0.40	0.25	0.00		0.03	0.03		0.03	0.03	0.00	31.41	31.41	0.01	0.00	31.52

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19	2.19	0.00	0.00	2.20
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.19**	**2.19**	**0.00**	**0.00**	**2.20**

3.5 Architectural Coating - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.38					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05	0.03	0.00		0.00	0.00		0.00	0.00	0.00	4.46	4.46	0.00	0.00	4.48
Total	**1.39**	**0.05**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.46**	**4.46**	**0.00**	**0.00**	**4.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58	0.00	0.00	0.59
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58	0.00	0.00	0.59

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.65	0.83	5.52	0.01	0.63	0.03	0.65	0.01	0.02	0.03	0.00	600.59	600.59	0.03	0.00	601.29
Unmitigated	0.65	0.83	5.52	0.01	0.63	0.03	0.65	0.01	0.02	0.03	0.00	600.59	600.59	0.03	0.00	601.29
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	468.93	493.92	429.73	1,337,455	1,337,455
Total	468.93	493.92	429.73	1,337,455	1,337,455

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	97.71	97.71	0.00	0.00	98.32
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	97.71	97.71	0.00	0.00	98.32
NaturalGas Mitigated	0.01	0.08	0.03	0.00		0.00	0.01		0.00	0.01	0.00	95.05	95.05	0.00	0.00	95.63
NaturalGas Unmitigated	0.01	0.08	0.03	0.00		0.00	0.01		0.00	0.01	0.00	95.05	95.05	0.00	0.00	95.63
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Single Family Housing	1.78113e+006	0.01	0.08	0.03	0.00		0.00	0.01		0.00	0.01	0.00	95.05	95.05	0.00	0.00	95.63
Total		0.01	0.08	0.03	0.00		0.00	0.01		0.00	0.01	0.00	95.05	95.05	0.00	0.00	95.63

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Single Family Housing	335875					97.71	0.00	0.00	98.32
Total						**97.71**	**0.00**	**0.00**	**98.32**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.57	0.05	4.17	0.00		0.00	0.54		0.00	0.54	50.61	64.28	114.90	0.05	0.00	117.38
Unmitigated	3.57	0.05	4.17	0.00		0.00	0.54		0.00	0.54	50.61	64.28	114.90	0.05	0.00	117.38
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.34					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	3.08	0.04	3.79	0.00		0.00	0.54		0.00	0.54	50.61	63.68	114.30	0.05	0.00	116.77
Landscaping	0.01	0.00	0.38	0.00		0.00	0.00		0.00	0.00	0.00	0.60	0.60	0.00	0.00	0.61
Total	3.57	0.04	4.17	0.00		0.00	0.54		0.00	0.54	50.61	64.28	114.90	0.05	0.00	117.38

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					7.11	0.10	0.00	9.95
Unmitigated					7.11	0.10	0.00	9.95
Total	NA	NA	NA	NA	NA	NA	NA	NA

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	tons/yr				MT/yr			
Single Family Housing	3.19255 / 2.01269					7.11	0.10	0.00	9.95
Total						7.11	0.10	0.00	9.95

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

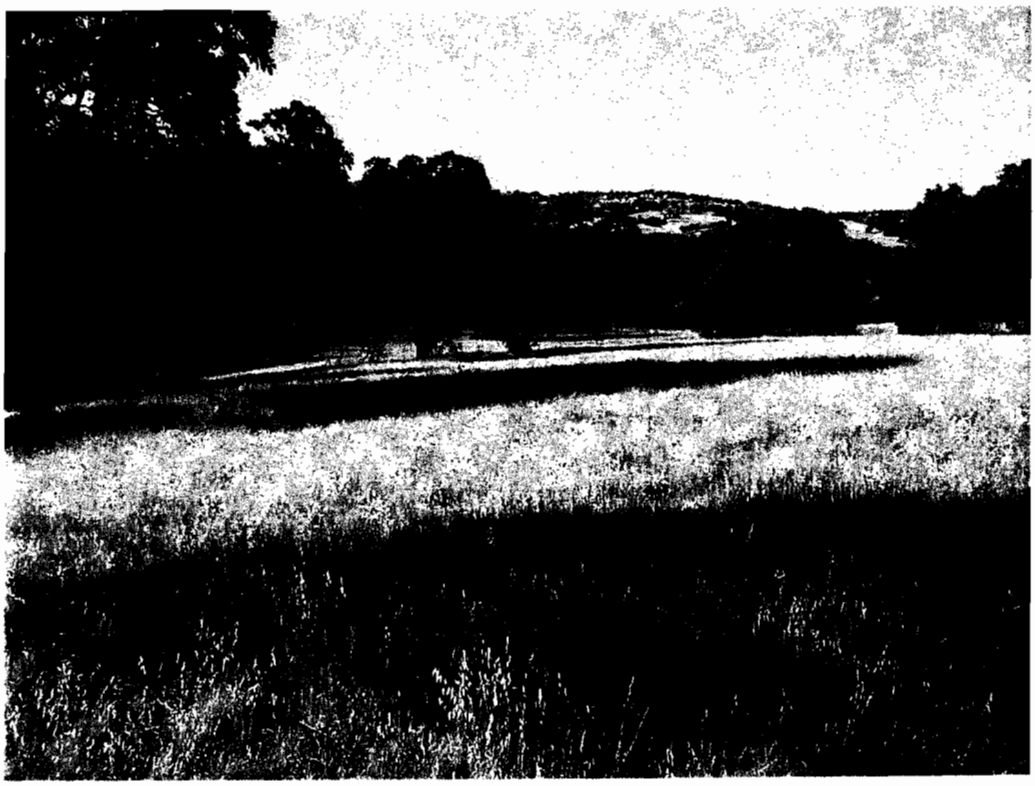
	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					7.10	0.42	0.00	15.92
Unmitigated					7.10	0.42	0.00	15.92
Total	NA	NA	NA	NA	NA	NA	NA	NA

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Single Family Housing	35					7.10	0.42	0.00	15.92
Total						7.10	0.42	0.00	15.92

SPECIAL STATUS PLANT SURVEYS



Wilson Estates

El Dorado County,
California

August 2011

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INTRODUCTION

This report presents the results of a special status plant survey. The survey was conducted within the study area for the below described Wilson Estates property.

LOCATION

The 28-acre study area is located in Sections 14 and 23, Township 10 North, Range 8 East, MDB&M, El Dorado County, California. The parcel can be found at UTM 668,627.94 M N; 4,286,600.86 M E, Zone 10 North and is portrayed on the Clarksville 7.5-Minute Series Topographic Quadrangle. Figure 1 is a vicinity map, and Figure 2 is an exhibit displaying the study area.

GENERAL SITE CONDITIONS AND HABITATS

The study area is located in the foothills on moderately hilly terrain at a median elevation of approximately 800 feet. Malcolm Dixon Road and Green Valley Road mark the northern and southern boundaries, respectively, and residential developments are located directly to the west. A church abuts the site to the southwest while ranchettes occupy lands to the north and east. The study area is undeveloped and lacks any permanent habitable structures. The site was not graded, grazed, or disked at the time of field surveys.

The highest point of the study area is located near the northern central portion of the site along Malcolm Dixon Road. The immediately surrounding areas slope away to the west, south and north. Located on the east side of the study area, an intermittent reach of Dutch Ravine flows off-site to the south before turning west to merge with Green Spring Creek. Green Spring Creek is tributary to the navigable American River by way of New York Creek, the South Fork of the American River, and Folsom Reservoir, respectively.

The study area encompasses several habitat types including non-native annual grasslands, foothill oak savannah/woodland, and a small riparian woodland corridor associated with Dutch Ravine. The majority of the site supports oak savannah/woodland which is mainly composed of live oaks (*Quercus wislizenii*) and blue oaks (*Quercus douglasii*). The understory consists of dogtail (*Cynosurus echinatus*), wild oats (*Avena fatua*), rip-gut brome (*Bromus diandrus*), medusa head (*Taeniatherum caput-medusae*), and soft chess (*Bromus hordeaceus*). Interspersed between the oak woodlands/savannah are areas of non-native annual grasslands dominated by

yellow start-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), ripgut brome (*Bromus diandrus*), and medusa-head (*Taeniatherum caput-medusae*). Other observed species include wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), prickly lettuce (*Lactuca serriola*), and split-leaf geranium (*Geranium dissectum*). Dutch Ravine supports a riparian woodland corridor composed of Himalayan blackberry (*Rubus discolor*), narrow-leaf willow (*Salix exigua*), California buckeye (*Aesculus californica*), live oak (*Quercus wislizenii*), blue oaks (*Quercus douglasii*), blue elderberry (*Sambucus mexicana*), and foothill pine (*Pinus sabiniana*). Herbaceous species consist of tall flat sedge (*Cyperus eragrostis*), spiny-fruited buttercup (*Ranunculus muricatus*), perennial rye (*Lolium perenne*), water cress (*Rorippa nasturtium-aquaticum*), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), and curly dock (*Rumex crispus*).

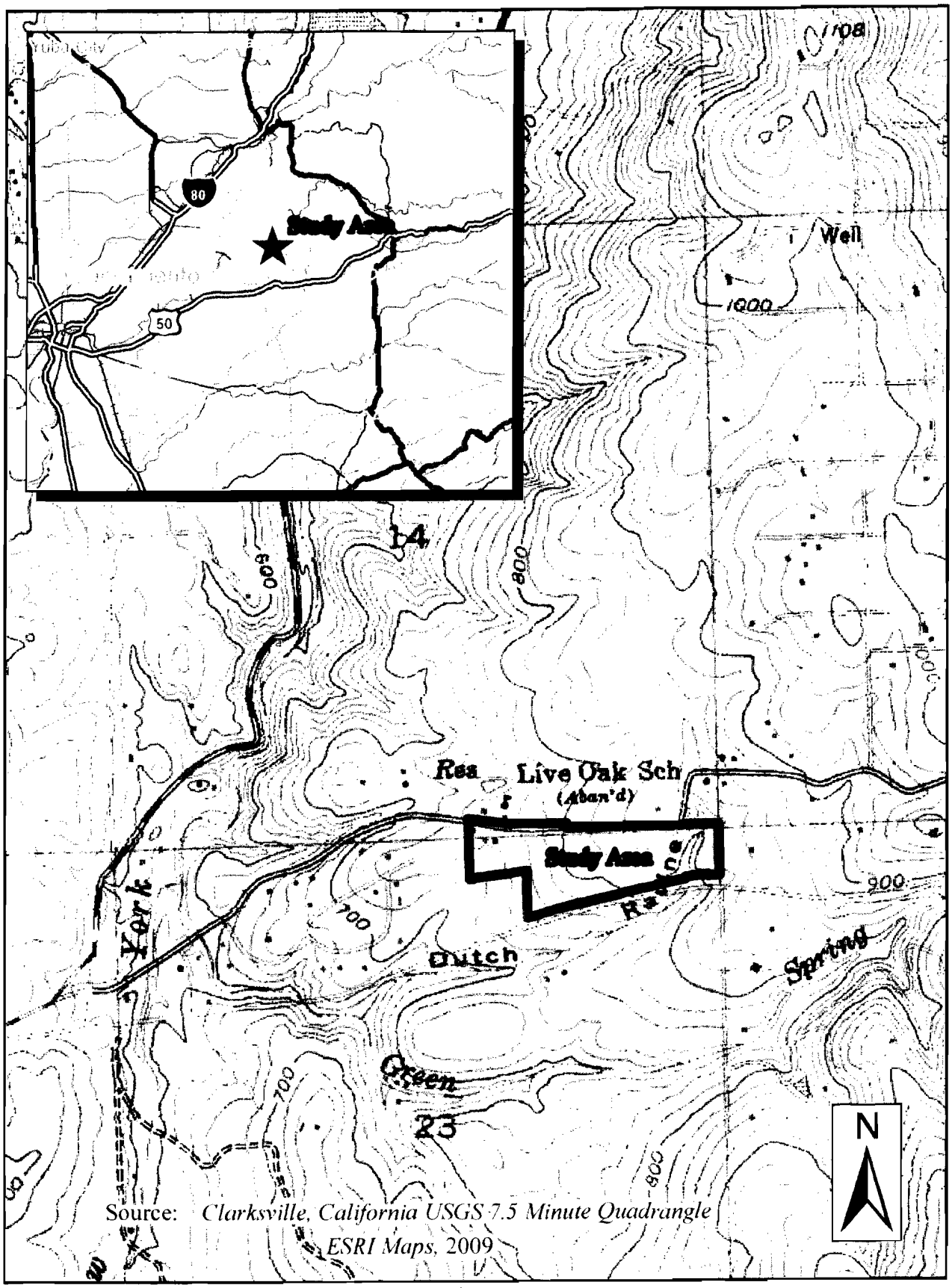
Soils

According to the April 1974, "**Soil Survey for El Dorado Area, California**" one soil map unit occurs within the study area. Auburn very rocky silt loam, 2 to 30% slopes (AxD), which is a well-drained, shallow ruptic-lithic xerochrept composed of 5 to 25% rock outcrops. The water holding capacity is 2 to 4 inches, and the depth to bedrock (and effective plant rooting range) varies between 20 to 26 inches. Contained within this unit are inclusions of Argonaut very rocky loam, Boomer very rocky loam, and Sobrante very rocky silt loam. Figure 3 is a soils map.

METHODOLOGY

Initially, a record search of the California Natural Diversity Database (CNDDB) was conducted for the Rocklin, Pilot Hill, Coloma, Folsom, Clarksville, Shingle Springs, Buffalo Creek, Folsom SE, and Latrobe, California 7.5-Minute USGS quadrangles to identify all documented sightings of special-status plant species in the vicinity of the study area. Special-status plant species include those officially listed by California or the federal government as endangered, threatened, or rare, as well as those proposed for formal state or federal listing as candidate species for listing as endangered, threatened, or rare. We also included those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS); this includes species on Lists 1, 2 3, and 4 of the CNPS Ranking System:

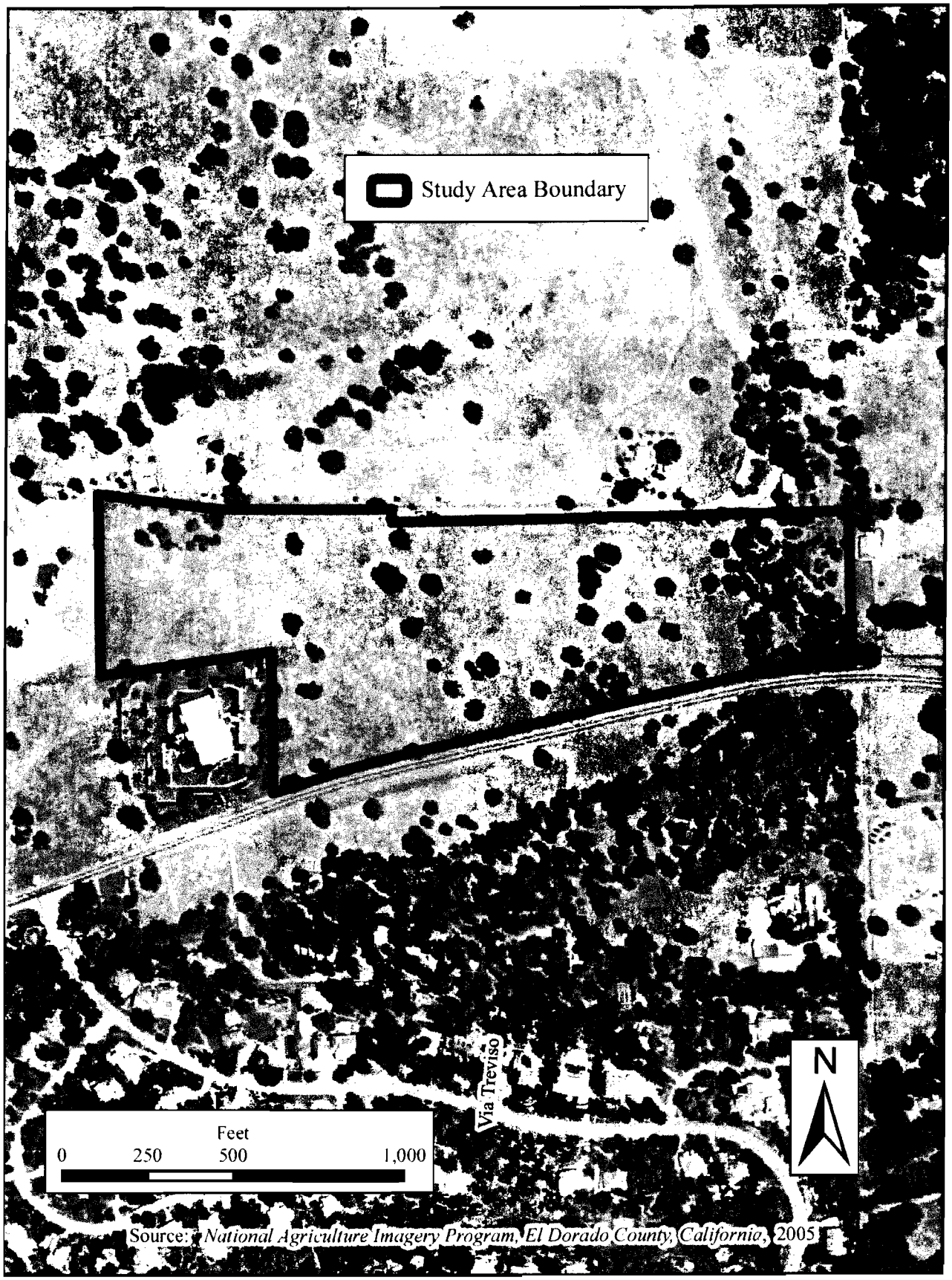
- List 1 A: Plants presumed extinct in California.
- List 1 B: Plants rare, threatened, or endangered in California and elsewhere.



Source: *Clarksville, California USGS 7.5 Minute Quadrangle*
ESRI Maps, 2009

Wilson Estates
Special Status Plant Surveys
August 2011

Figure 1
Vicinity Map



Wilson Estates
Special Status Plant Surveys
August 2011

Figure 2
Study Area

Wilson Estates
Special Status Plant Surveys
August 2011

Figure 3
Soils Map

- List 2: Plants rare, threatened, or endangered in California, but more common elsewhere.
- List 3: Plants about which the CNPS needs more information – a review list.
- List 4: Plants of limited distribution – a watch list.

The CNPS Threat Rank is an extension that is added onto the CNPS List. It ranges from .1 to.3 and indicates the level of endangerment to the species with .1 representing the most endangered and .3 being the least endangered.

Also included are taxa meeting the criteria for listing under Section 15380 of the California Environmental Quality Act (CEQA) Guidelines. (Note that all CNPS List 1 and 2 and some List 3 species may fall under Section 15380 of CEQA.) Appendix A contains a map displaying CNDDB elemental occurrences recorded in the vicinity of the study area. Table 1 provides a list of special-status plant species listed as occurring in the above target quadrangles that were evaluated including their listing status.

Multiple site visits were conducted to coincide with the blooming periods of special-status plant species listed by the CNDDB as occurring within the target quadrangles. Field surveys were performed by Matt Hirkala on June 27 and August 2, 2011. Several visits were made to known reference populations throughout the growing season to assess the local phenology of target species. It should be noted that the unusually late rains appear to have interrupted the phenology of many local species by delaying respective blooming periods. Meandering transects were performed throughout the study area parcel. Appendix B contains a list of plants observed within the study area.

RESULTS AND DISCUSSION

The CNDDB search recorded nineteen special-status plant species as occurring within the vicinity of the study area: Jepson's onion (*Allium jepsonii*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Stebbin's morning glory (*Calystegia stebbinsii*), Pine Hill ceanothus (*Ceanothus roderickii*), Red Hills soaproot (*Chlorogalum gradiflorum*), Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*), Tuolumne button-celery (*Eryngium pinnatisectum*), Pine Hill flannelbush (*Fremontodenderon decumbens*), El Dorado bedstraw (*Galium californicum* ssp. *sierrae*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), Bisbee Peak rush-rose (*Helianthemum suffrutescens*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), legenere (*Legenere limosa*), pin cushion navarretia (*Navarretia myersii* ssp. *myersii*), slender

orcutt grass (*Orcuttia tenuis*), Sacramento orcutt grass (*Orcuttia viscida*), Layne's ragwort (*Packera layneae*), Sanford's arrowhead (*Sagittaria sanfordii*), and El Dorado mule ears (*Wyethia reticulata*). Based on a recorded sighting within the Clarksville quadrangle provided by the California Native Plant Society's database, we also included Hartweg's golden sunburst (*Pseudobahia bahiifolia*) in our list of special status plants even though the CNDDB search did not record any occurrences within the target quadrangles.

Brandegee's Clarkia

Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*) is not listed under the federal or California Endangered Species Act; however, it is designated as a CNPS List 1B.2 plant. It favors chaparral and cismontane woodland and is often associated with roadcuts. Brandegee's clarkia is an annual herbaceous species, and it blooms from May to July.

Though the study area encompasses the appropriate habitat to support Brandegee's clarkia, no specimens were observed during the field surveys which were conducted during its blooming period.

Tuolumne Button-Celery

Tuolumne button-celery (*Eryngium pinnatisectum*) is a CNPS List 1B.2 species. It is a biennial or perennial herb, and it favors vernal pools or other wet depressions located in cismontane woodlands and lower montane coniferous forests. Tuolumne button-celery blooms from June to August and is found between approximately 230 to 3,000 feet.

The study area does not contain the necessary wetland habitat to support Tuolumne button-celery.

Bogg's Lake Hedge-Hyssop

Bogg's Lake hedge-hyssop (*Gratiola heterosepala*) is a California endangered species and a CNPS List 1B.2 plant. Though Bogg's Lake hedge-hyssop grows in vernal pools, it can also occur around the perimeter of lakes and ponds. It is found between 30 and 7,800 feet, favors clay soils, and blooms from April to August.

The study area does not contain the necessary wet habitat to support this species.

Table 1: Special-Status Species Plants and Habitat Associations

	Federal Status	State Status	CNPS Listing	Habitat Association	Blooming Period
Allium jepsonii (Jepson's onion)	None	None	CNPS-1B.2	Cismontane woodland or lower montane coniferous forests with serpentine soils or volcanic slopes.	May to August
Balsamorhiza macrolepis var. macrolepis (big-scale balsamroot)	None	None	CNPS-1B.2	Chaparral, cismontane woodland, and valley and foothill grasslands -- sometimes found on serpentine soils.	March to June
Calystegia stebbinsii (Stebbin's morning glory)	Endangered	Endangered	CNPS-1B.1	Open areas in foothill chaparral and cismontane woodland with serpentine or Gabbro soils.	April to July
Ceanothus roderickii (Pine Hill ceanothus)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland with serpentine or Gabbro soils.	May to June
Chlorogalum grandiflorum (Red Hills soaproot)	None	None	CNPS-1B.2	Foothill chaparral, cismontane woodland, and lower montane coniferous forest. Sometimes found on serpentine or Gabbro soils.	May to June
Clarkia biloba ssp. brandegeeae (Brandegee's clarkia)	None	None	CNPS-1B.2	Generally associated with chaparral and cismontane woodland, but may occur in foothill oak woodland and grassland.	May to July
Eryngium pinnatisectum (Tuolumne button-celery)	None	None	CNPS-1B.2	Vernal pools and wet depressions or areas with mesic soils within cismontane woodlands and lower montane coniferous forests.	June to August
Fremontodenderon decumbens (Pine Hill flannelbush)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland with rocky serpentine or Gabbro soils.	April to July
Galium californicum ssp. sierrae (El Dorado bedstraw)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland with Gabbro soils.	May to June
Gratiola heterosepala (Bogg's Lake hedge-hyssop)	None	Endangered	CNPS-1B.2	Vernal pools, seasonal wetlands, and margins of lakes/ponds.	April to August
Helianthemum suffrutescens (Bisbee Peak rush rose)	None	None	CNPS-3.2	Open areas within chaparral -- sometimes found in serpentine, Ione, or Gabbro soils.	April to June

Table 1: Special-Status Species Plants and Habitat Associations

Juncus leiospermus var. ahartii (Ahart's dwarf rush)	None	None	CNPS-1B.2	Edges of vernal pools and other seasonally flooded features.	March to May
Legenere limosa (legenere)	None	None	CNPS-1B.1	Vernal pools and seasonal wetlands.	April to June
Navarretia myersii ssp. myersii (Pin cushion navarretia)	None	None	CNPS-1B.1	Vernal pools and seasonal wetlands.	May
Orcuttia tenuis (slender orcutt grass)	Threatened	Endangered	CNPS-1B.1	Vernal pools and seasonal wetlands.	May to October
Orcuttia viscida (Sacramento orcutt grass)	Endangered	Endangered	CNPS-1B.1	Vernal pools and seasonal wetlands.	April to July
Packera layneae (Layne's ragwort)	Threatened	Rare	CNPS-1B.2	Chaparral and cismontane woodland with serpentine or Gabbro soils.	April to July
Pseudobahia bahiifolia (Hartweg's golden sunburst)	Endangered	Endangered	CNPS-1B.1	Cismontane woodland, valley and foothill grassland with clay soils.	March to April
Sagittaria sanfordii (Sanford's arrowhead)	None	None	CNPS-1B.2	Freshwater emergent marsh habitat -- also associated with drainages, canals, or irrigation ditches.	May to October
Wyethia reticulata (El Dorado Co. mule ears)	None	None	CNPS-1B.2	Foothill chaparral, cismontane woodland, and lower montane coniferous forest with Gabbro soils.	May to July

Ahart's Dwarf Rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is a CNPS list 1B.2 species. It is an annual herb found between elevations of approximately 110 feet and 3,400 feet. It blooms from March to May and grows along the edges of seasonal wet habitats such as vernal pools and swales.

The study area does not contain the necessary wetland habitat to support this Ahart's dwarf rush.

Legenere

Legenere (*Legenere limosa*) is a CNPS list 1B.1 that is primarily associated with the bottoms of vernal pools between 0 to 2,900 feet. It is an annual herb and it blooms from April to June. Threatened by grazing and developments, many historic populations of legenere are believed to have been extirpated.

The study area does not contain the necessary wetland habitat to support this species.

Pin Cushion Navarretia

Pin cushion navarretia (*Navarretia myersii* ssp. *myersii*) is a CNPS list 1B.1 plant. It is an annual herb that prefers vernal pools and other seasonal wetlands between approximately 100 and 1,100 feet. Pin cushion navarretia typically blooms in May and is currently threatened by development.

The study area does not contain the necessary wetland habitat to support pin cushion navarretia.

Slender Orcutt Grass

Slender orcutt grass (*Orcuttia tenuis*) is a federally threatened and California endangered species as well as a CNPS list 1B.1 plant. It favors vernal pools and other seasonal wetland habitats between 115 and 5,800 feet. Slender orcutt grass is an annual herbaceous species, and its bloom period extends from May to October.

The study area does not contain the necessary wetland habitat to support this species.

Sacramento Orcutt Grass

Sacramento orcutt grass (*Orcuttia viscida*) is a federally endangered and California endangered species as well as a CNPS list 1B.1 plant. Like slender orcutt grass, this herbaceous annual also favors vernal pools and other seasonal wetland habitats, though it is typically found between 100 and 330 feet elevation. (The average elevation of the study area is approximately 800 feet.) Sacramento orcutt grass blooms from April to July and faces serious threats from agriculture, urbanization, and non-native species.

The study area lacks the necessary wetland habitat to support this species; the study area elevation is above the known range of Sacramento orcutt grass.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is listed as a 1B.2 plant by the CNPS. It generally occurs in shallow freshwater habitats associated with drainages, canals, and larger ditches that sustain inundation and/or slow moving water into early summer. It is a perennial rhizomatous emergent species, and it blooms from May to October.

The study area does not contain the necessary aquatic habitat to support Sanford's arrowhead.

Hartweg's Golden Sunburst

Hartweg's golden sunburst (*Pseudobahia bahiifolia*) is a federal and California endangered species and a CNPS list 1B.1 plant. It is an annual herbaceous species that is associated with grasslands and/or open woodlands and favors clay soils. Hartweg's golden sunburst is known to grow at elevations ranging from approximately 100 to 1,000 feet, and it typically blooms in March and April.

The study area does not contain the clay soils necessary to support Hartweg's golden sunburst.

Special Status Plants Requiring Gabbro and/or Serpentine Soils

The ten special-status species of plants listed below are associated with Gabbro and/or serpentine soils and are identified by the CNDDB as occurring within the target quadrangles. The mildly acidic Gabbro soils are derived from igneous rock and possess peculiar characteristics such as high concentrations of magnesium, iron, nickel, chromium, and cobalt and low amounts of calcium and plant nutrients such as phosphorus. Serpentine soils are also known for having

atypical characteristics such as a lack of the essential nutrients nitrogen, potassium, and phosphorus, a low calcium-magnesium ratio, and high concentrations of the heavy metals. The unusual soil chemistry has resulted in the evolution of a unique community of plants, many of which are only found in El Dorado County. Most of these plants have only been documented in chaparral or cismontane woodland associated with the Gabbro soils region around Pine Hill.

According to the **"Soil Survey of El Dorado Area, California"** no serpentine, gabbros, or clay soils are present within the study area. The majority of CNDDB occurrences for these species are located in western El Dorado County around the Pine Hill Preserve. The CNDDB occurrence map in Appendix A displays the location of the Gabbro soils (also known as the Rescue Series) and serpentine soils in relation to the study area.

Stebbin's Morning Glory

Stebbin's morning glory (*Calystegia stebbinsii*) is a federally endangered and California endangered species as well as a CNPS list 1B.1 plant. It is a perennial herb associated with open areas in foothill chaparral and cismontane woodland with Gabbro or serpentine soils. Stebbin's morning glory blooms from April to July and is found at elevations of approximately 600 to 2,400 feet.

The study area does not contain the necessary Gabbro or serpentine soils to support this species.

Pine Hill Ceanothus

Pine Hill ceanothus (*Ceanothus roderickii*) is listed as a federally endangered and California rare species; it is also a CNPS list 1B.2 plant. This low growing shrub prefers foothill chaparral and cismontane woodland with serpentine or Gabbro soils at elevations between approximately 850 to 2,100 feet.

The study area does not contain the necessary Gabbro or serpentine soils to support this species.

Pine Hill Flannelbush

Pine Hill flannelbush (*Fremontodon decumbens*) is listed as a federally endangered and California rare species; it is also a CNPS list 1B.2 plant. Pine Hill flannelbush is a sprawling, low-growing shrub endemic to Pine Hill and the immediate vicinity. The species favors foothill chaparral and cismontane woodland with rocky Gabbro or serpentine soils. It blooms from April to July.

The study area does not contain the necessary Gabbro or serpentine soils to support this species.

El Dorado Bedstraw

El Dorado bedstraw (*Galium californicum* ssp. *sierrae*) is listed as a federally endangered and California rare species; it is also a CNPS list 1B.2 plant. This low-growing perennial herb prefers foothill chaparral and cismontane woodland with Gabbro soils. El Dorado bedstraw blooms from May to June and is known only grow in the Gabbro region of western El Dorado County.

The study area does not contain the necessary Gabbro or serpentine soils to support this species.

Layne's Ragwort

Layne's ragwort (*Packera layneae*), which is also known as Layne's butterweed (*Senecio layneae*), is listed as a federally endangered and California rare species; it is also a CNPS list 1B.2 plant. Layne's ragwort is a non-woody perennial associated with open areas in chaparral and cismontane woodland. This member of the sunflower family blooms from April to July and grows on rocky Gabbro or serpentine soils. It can also be found in the Red Hills in Tuolumne County and near Brownsville in Yuba County.

The study area does not contain the necessary Gabbro or serpentine soils to support this species.

El Dorado Mule Ears

El Dorado mule ears (*Wyethia reticulata*) is listed as a 1B.2 plant by the CNPS. This perennial sunflower typically favors foothill chaparral, cismontane woodland, and lower montane coniferous forest with Gabbro or serpentine soils; however, it is known to grow clay soils as well.

The study area does not contain the necessary Gabbro, serpentine, or clay soils to support this species.

Red Hills Soaproot

Red Hills soaproot (*Chlorogalum gradiflorum*) is listed as a 1B.2 plant by the CNPS. Red Hills soaproot typically favors foothill chaparral, cismontane woodland, and lower montane coniferous

forest with Gabbro or serpentine soils; however, it is known to grow on other soil types as well. This perennial blooms from May to June and is found from approximately 800 to 3,300 feet.

Though the study area encompasses the appropriate habitat to support this species, no specimens were observed during the field surveys which were conducted during its blooming period.

Bisbee Peak Rush-Rose

Bisbee Peak rush-rose (*Helianthemum suffrutescens*) is listed as a 3.2 plant by the CNPS. This evergreen shrub grows in open areas within chaparral. Though Bisbee Peak rush-rose grows on the Gabbro and serpentine soils of the Pine Hill region, it is also found on other soils as well.

The study area does not contain the necessary chaparral habitat needed to support this species.

Jepson's Onion

Jepson's onion (*Allium jepsonii*) is classified as a List 1B.2 plant by the CNPS. It is a bulbiferous perennial herb that is usually associated with open areas within cismontane woodland or lower montane coniferous forest between 985 and 3,800 feet. Jepson's onion is typically found on serpentine soils of the Sierra Nevada, but it has been documented growing on the volcanic soils at Table Mountain as well. It blooms between May and August.

The study area does not contain the necessary soils required to support Jepson's onion.

Big-Scale Balsamroot

Big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*) is classified as a List 1B.2 plant by the CNPS. It is a perennial herbaceous species that favors chaparral, cismontane woodland and valley and foothill grasslands between 295 and 4,600 feet. Big-scale balsamroot blooms from March through June and may be found on serpentine soils, though it is known to grow on other soil types as well.

Though the study area encompasses the appropriate habitat to support big-scale balsamroot, no specimens were observed during the field surveys which were conducted during its blooming period.

CONCLUSIONS

Field surveys were performed on June 27 and August 2, 2011; no special-status species plants were observed within the study area.

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JURISDICTIONAL DELINEATION AND SPECIAL STATUS SPECIES EVALUATION

WILSON ESTATES

Exhibit U–Attachment 9

GIBSON & SKORDAL, LLC
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2277 Fair Oaks Blvd., Suite 105
Sacramento, California 95825

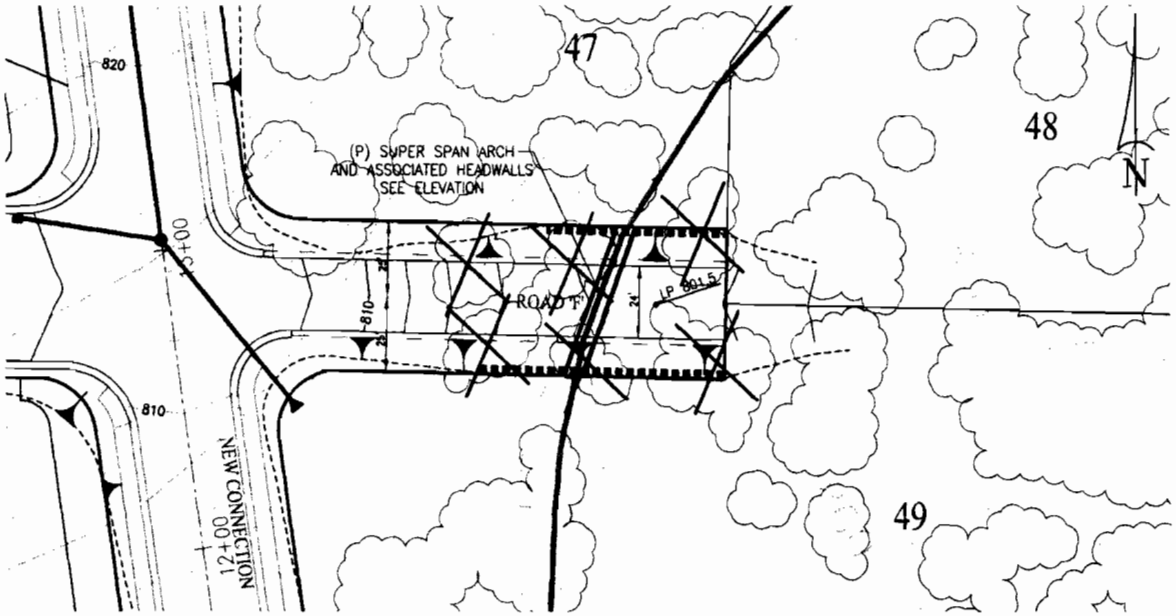
WILSON ESTATES

ROAD 'F' DRAIN CROSSING

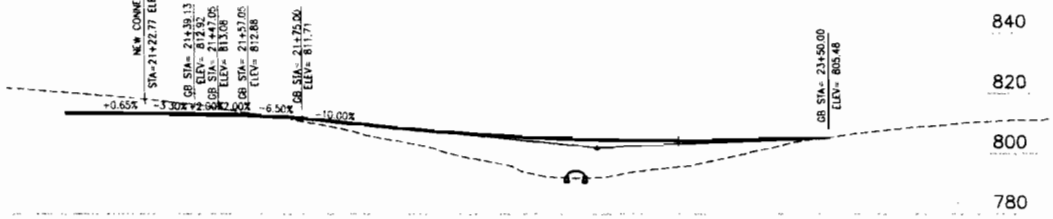
(P) TOTAL AVOIDANCE OF US WATERS

EL DORADO HILLS, CALIFORNIA

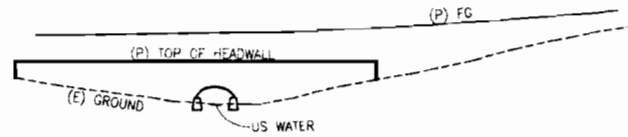
MAY, 2012



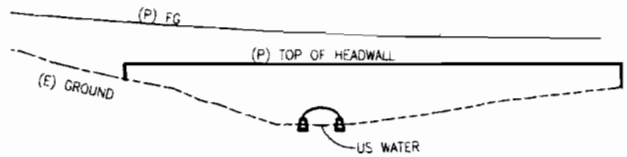
PLAN VIEW
SCALE: 1"=40'



ROAD 'F' PROFILE
SCALE: 1"=40'



UP STREAM
LOOKING DOWN STREAM



DOWN STREAM
LOOKING UPSTREAM

ELEVATION
SCALE: 1"=20'

NOTES:
1. APPROXIMATE 6'x1'-9.5" STRUCTURAL PLATE ARCH OR EQUIVALENT
2. HEADWALLS APPROXIMATE AS SHOWN; POSSIBLE ANGLES IF TREES ARE AVOIDED.
3. NO IMPACT TO US WATER.
4. COE PERMIT (NOT REQUIRED)
5. 401 WATER QUALITY CERT. (NOT REQUIRED)
6. FISH AND GAME 1602 (MAY BE REQUIRED)

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M:\06-047-002\PLANNING\EXHIBITS\Roadway to lots 47-48-49.dwg, Layout1, 5/22/2012 4:05:04 PM, rfursov

JURISDICTIONAL DELINEATION AND SPECIAL STATUS SPECIES EVALUATION

WILSON ESTATES

EL DORADO COUNTY, CALIFORNIA

January 2009

Prepared For:

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INTRODUCTION

This report presents the results of a special status species assessment and a delineation of waters of the United States, including wetlands, which may be regulated by the U. S. Army Corps of Engineers under the authority of Section 404 of the Federal Clean Water Act. The special status species assessment and delineation of waters of the United States were conducted within the study area for the below described Wilson Estates property.

LOCATION

The 28-acre study area is located in Sections 14 and 23, Township 10 North, Range 8 East, MDB&M, El Dorado County, California. The parcel can be found at UTM 668,627.94 M N; 4,286,600.86 M E, Zone 10 North and is portrayed on the Clarksville 7.5 Minute Series Quadrangle. Figure 1 is a locator map, and Figure 2 is a vicinity map.

To access the site from Sacramento, drive east on Highway 50 into El Dorado county and exit at El Dorado Hills Boulevard. Travel north on El Dorado Hills Boulevard until it intersects with Green Valley Road. Turn right onto Green Valley Road and travel for approximately 0.75 mile. The study area is situated on the north side of Green Valley Road.

METHODOLOGY

This delineation was performed in accordance with the 1987 **"Corps of Engineers Wetlands Delineation Manual,"**[1] the **"Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0),"**[2] and Sacramento District's **"Minimum Standards for Acceptance of Preliminary Wetlands Delineations"** dated November 30, 2001. Corps' regulations (33 CFR 328) were used to determine the presence of waters of the United States other than wetlands. The **"U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, May 30, 2007"**[3] was consulted in evaluating the jurisdictional status of the various waterbodies existing within the study area.

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[1] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station. Vicksburg, Miss.

[2] Wetlands Regulatory Assistance Program. September 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, Miss.

[3] U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. May 30, 2007. U.S. Army Corps of Engineers & U.S. Environmental Protection Agency.

The **"National List of Plant Species That Occur in Wetlands: California (Region 0)"**[4] was used to determine the wetland indicator status of plants observed in the study area.

Field surveys were conducted on August 1, 2008, and January 14, 2009, within the study area to delineate water features, including wetlands that are potentially regulated under Section 404 of the Federal Clean Water Act. Data point locations were surveyed utilizing a Trimble ProXR GPS unit equipped with sub-meter accuracy. Due to poor satellite reception caused by tree canopy and hilly terrain, Dutch Ravine was mapped by surveying GPS points within the channel and digitizing these reaches with the assistance of a topographic overlay and aerial photography. The delineation map was prepared by digitizing and layering the GPS survey data over USGS aerial photography flown in 2002. Detailed data on vegetation, soils, and hydrology were taken in the field. Data sheets documenting the basis for determining which areas are wetland or upland are provided in Appendix A. Appendix B contains a delineation map of the study area.

The study area was assessed for the potential presence of special status species. Initially, a record search of the California Natural Diversity Database (CNDDB) was conducted for the Coloma, Shingle Springs, Clarksville, Pilot Hill, Latrobe, Folsom SE, Folsom, Buffalo Creek, and Rocklin 7.5 Minute USGS quadrangles to identify all documented sightings of special status species in the vicinity of the site. In addition to species identified in the CNDDB search, we included other special status species that may be present based on historic or predicted range data.

GENERAL SITE CONDITIONS AND HABITAT

Existing Field Conditions

The study area is located in the foothills on moderately hilly terrain at a median elevation of approximately 800 feet. Malcolm Dixon Road and Green Valley Road mark the northern and southern boundaries, respectively, and residential development is located to the west. An LDS church abuts the site to the southwest while ranchettes occupy lands to the north and east. The study area is undeveloped and lacks any permanent habitable structures. A reach of Dutch Ravine traverses the east end of the parcel from north to south. The site was not graded, grazed, or disked at the time of field surveys.

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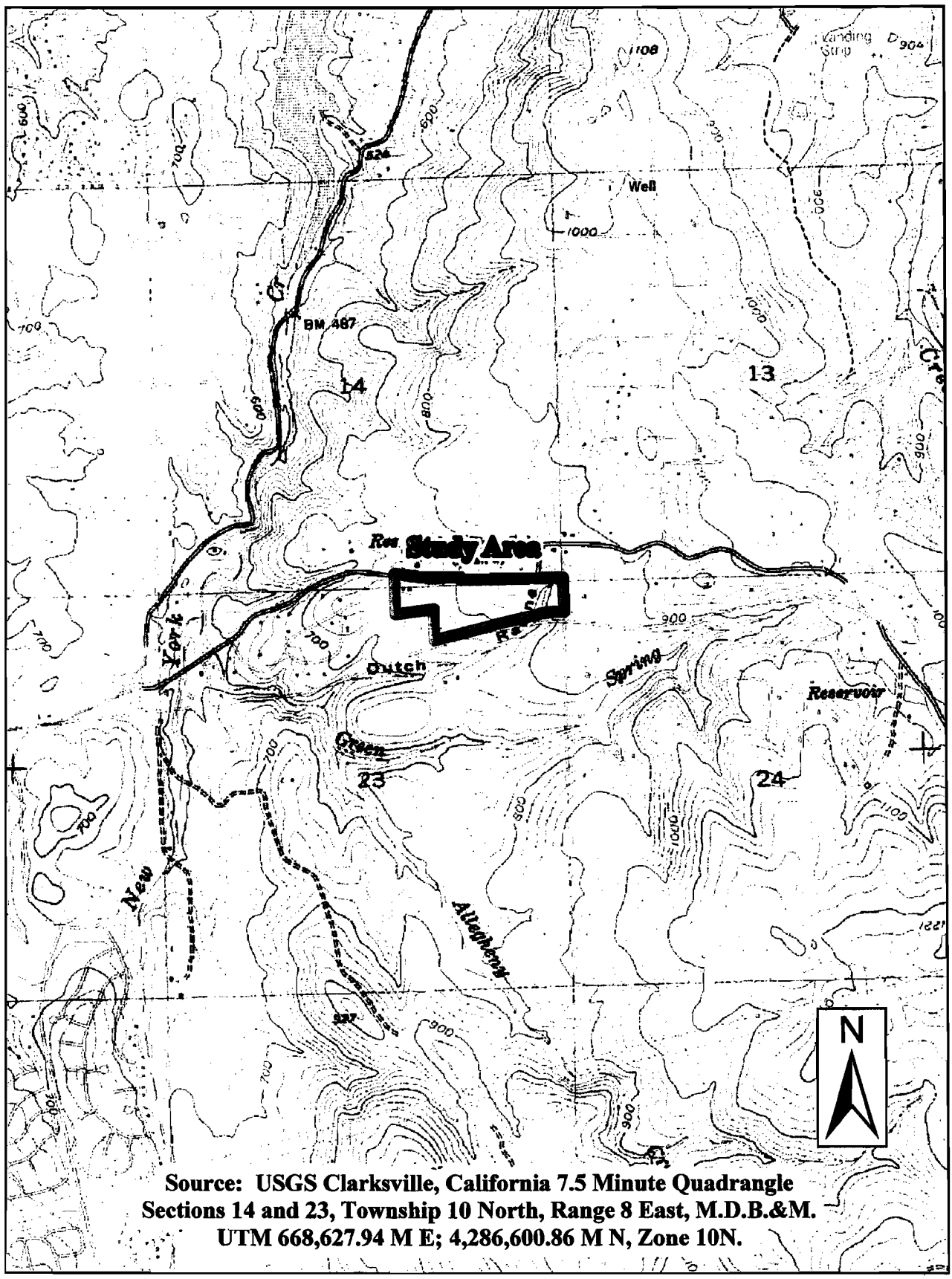
[4] Reed, P.B. 1988. National List of Plant Species That Occur In Wetlands: California (Region 0). Biological Report 88(26.10). May 1988. National Ecology Center, National Wetlands Inventory, U.S. Fish & Wildlife Service, St. Petersburg, Florida.

Source: USGS Sacramento, California 1:250,000 Quadrangle
Sections 14 and 23, Township 10 North, Range 8 East, M.D.B.&M.
UTM 668,627.94 M E; 4,286,600.86 M N, Zone 10N.

Wilson Estates
Jurisdictional Delineation & Special Status Species Assessment
January 2009

Figure 1
Locator Map



Source: USGS Clarksville, California 7.5 Minute Quadrangle
Sections 14 and 23, Township 10 North, Range 8 East, M.D.B.&M.
UTM 668,627.94 M E; 4,286,600.86 M N, Zone 10N.

Figure 2
Vicinity Map

Plant Communities

The site contains foothill non-native annual grasslands and foothill woodlands. The grassland component is dominated by wild oats (*Avena fatua*), rip-gut brome (*Bromus rigidus*), and soft chess (*Bromus mollis*). Other species include yellow star thistle (*Centaurea solstitialis*), filaree (*Erodium botrys*), rose clover (*Trifolium hirtum*), and goat grass (*Aegilops triuncialis*). Blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizenii*), and foothill pine (*Pinus sabiniana*) are scattered throughout the majority of the site. The heaviest concentration of these species forms the foothill woodlands along the east side bordering Dutch Ravine.

Hydrology

The only mapped water feature within the study area is an intermittent reach of Dutch Ravine. Located on the east side of the study area, Dutch Ravine flows off-site to the south before turning west to merge with Green Spring Creek. Green Spring Creek is tributary to the navigable American River by way of New York Creek, the South Fork of the American River, and Folsom Reservoir, respectively.

Soils

According to the April 1974, "**Soil Survey for El Dorado Area, California**" one soil map unit occurs within the study area. Auburn very rocky silt loam, 2 to 30% slopes (AxD), which is a well-drained, shallow ruptic-lithic xerochrept composed of 5 to 25% rock outcrops. The water holding capacity is 2 to 4 inches, and the depth to bedrock (and effective plant rooting range) varies between 20 to 26 inches. Contained within this unit are inclusions of Argonaut very rocky loam, Boomer very rocky loam, and Sobrante very rocky silt loam.

The above soil map unit is not listed in the June 1991, "**Hydric Soils of the United States.**" Figure 3 is a soils map and Table 1 lists the map units present within the study area.

FINDINGS

Potential Wetlands and Waters of the United States

Approximately 0.0748 acre of Dutch Ravine was mapped within the study area. Appendix B provides a delineation map which displays the study area boundary, water features, and data

points, and Appendix C includes a list of plant species observed in the study area including their status as wetland indicator species.

Dutch Ravine

Approximately 0.0748 acre of Dutch Ravine was delineated within the study area. Dutch Ravine possesses an ordinary high water mark, a distinct bed and bank, and supports a riparian woodland corridor composed of Himalayan blackberry (*Rubus procerus*), willow (*Salix* sp.), California buckeye (*Aesculus californica*), blue oak, live oak, and foothill pine. Herbaceous species include ripgut brome, wild oats, and curly dock (*Rumex crispus*). No water was observed in Dutch Ravine during either field visit.

JURISDICTIONAL FINDINGS

The delineated areas shown on Appendix B represent those aquatic features that exhibit the requisite physical and/or biological characteristics to be considered wetlands or other potential waters of the United States (e.g. ponds, creeks, canals, etc.) subject to the Corps' jurisdiction pursuant to Section 404 of the Clean Water Act. Whether they are, in fact, jurisdictional depends on their relationship to traditional navigable waters. The Corps of Engineers jurisdiction under Section 404 of the Clean Water Act is defined in 33 CFR 328 and is further defined in "U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook" and its various appendices (the "Guidance"). Under the Guidance, waters of the United States that are potentially regulated pursuant to Section 404 of the Clean Water Act fall into one of the following categories.

I – Jurisdictional

A. Traditional navigable waters ("TNWs") and their adjacent (abutting and non-abutting) wetlands;

B. Non-navigable tributaries to TNWs that are relatively permanent waters (RPWs) and wetlands that directly abut such tributaries.

II – Potentially jurisdictional depending on whether there is a significant nexus to TNWs

A. Non-navigable tributaries to TNWs that are not relatively permanent waters (Non-RPWs) and their adjacent wetlands (abutting and non-abutting)

Wilson Estates
Jurisdictional Delineation & Special Status Species Assessment
January 2009

Figure 3
Soils Map

Table 1: Study Area Soil Map Units

Map Symbol	Mapping Unit	Drainage Class
AxD	Auburn very rocky silt loam, 2-30% slopes	Well drained

B. Wetlands adjacent to, but not abutting, RPWs

III – Potentially jurisdictional depending on whether there is a commerce clause nexus

A. Interstate and intrastate waterbodies and their adjacent wetlands that are not direct or indirect tributaries to TNWs (isolated waterbodies)

B. Interstate and intrastate wetlands that are not adjacent to TNWs or tributaries to TNWs (isolated wetlands)

Appendix D contains two exhibits prepared by Gibson & Skordal, LLC to help visualize these categories of potential jurisdiction with respect to the jurisdictional standard for each category. The first exhibit is a color-coded map showing the various categories discussed above, and the second is a chart showing the sequential questions that must be addressed to determine the jurisdictional status of specific wetlands. Appendix E includes a map displaying the connection between study area water features and the navigable American River. Site photos are contained in Appendix F.

The only water feature within the study area is a reach of Dutch Ravine, which flows westward into Green Spring Creek, New York Creek, the South Fork of the American River, Folsom Reservoir, and the navigable American River, respectively. The American River has been determined to be a TNW by the Corps of Engineers from its mouth to Bradshaw Road (approximately river mile 12). It is also likely that the American River above that point including Folsom Reservoir may be considered navigable-in-fact and thus would be considered to be a TNW by the Corps. Dutch Ravine is intermittent and is a non-RPW. As such, it requires a significant nexus determination to be classified as jurisdictional.

Dutch Ravine is capable of filtering and conveying sediment derived from the surrounding uplands, and it also contributes base flow to Green Spring Creek, New York Creek, the South Fork of the American River, and downstream TNW(s) during periods of flow. It appears to support the food chain through the transfer of organic carbon and nutrients, and it may provide limited food sources for aquatic species in downstream drainages. Appendix E lists the distances in river miles and air miles between the American River and the reach of Dutch Ravine within the study area. Absent any metrics for determining significance, we are unable to make a judgment whether Dutch Ravine would have a significant nexus to either the American River or Folsom Reservoir.

CONCLUSIONS

Based on the above, we make the following conclusions:

- Dutch Ravine is a non-RPW and requires a significant nexus determination to ascertain its status as a jurisdictional water of the United States.

These conclusions represent the professional opinion of Gibson & Skordal, LLC. Ultimately, the Corps of Engineers and the Environmental Protection Agency are responsible for determining the extent and jurisdictional status of aquatic habitats within the study area.

SPECIAL STATUS SPECIES EVALUATION

This report summarizes our evaluation of the potential presence of special status species within the study area. The special status species evaluation considers those species identified as having relative scarcity and/or declining populations by the United States Fish & Wildlife Service (FWS) or California Department of Fish & Game (CDFG). Special status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern by CDFG. We also included those species considered to be "special animals" or "fully protected" by the CDFG and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS).

A record search of the CNDDB was conducted to identify all documented sightings of special status species in the vicinity of the study area. In addition to species identified in the CNDDB search, we included other special status species that may occur in the study area based on historical range data. Appendix G contains a CNDDB elemental occurrence map.

Table 2 provides a list of special status species that were evaluated including their listing status, habitat associations, and whether potential habitats occur in the study area. The following is a detailed summary of special status species and their habitats as they relate to the study area.

American Badger

American badger (*Taxidea taxus*) is a listed CDFG species of special concern. This burrowing carnivorous mammal is solitary and very territorial preferring to feed on small mammals, lizards, snakes, insects, and carrion. It has no known natural enemies and inhabits dry, open fields, grasslands, and pastures.

The appropriate habitat is present to support this species.

Pallid Bat

Pallid bat (*Antrozous pallidus*) is a listed CDFG species of special concern. It favors roosting sites in crevices in rock outcrops, caves, abandoned mines, and human-made structures such as barns, attics, hollow trees, and sheds. Though pallid bats are gregarious, they tend to group in smaller colonies of 10 to 100 individuals. It is a nocturnal hunter and captures prey in flight, but unlike most American bats, the species has been observed foraging for flightless insects, which it

seizes after landing. The sole occurrence within the target quadrangles is based upon a specimen collected two miles northwest of Folsom in 1942.

The lack of recent sightings makes it unlikely that pallid bats occupy the study area.

Silver-Haired Bat

Silver-haired bat (*Lasionycteris noctivagans*) is a listed CDFG special animal. Primarily considered a coastal and montane forest species; the silver-haired bat roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. This insectivore's favored foraging sites include open wooded areas near water features.

The site contains the appropriate roosting and foraging habitat for this species.

Cooper's Hawk

Cooper's hawk (*Accipiter cooperi*), which is also known as the blue darter or chicken hawk, is listed by CDFG as a species of special concern. This raptor is an ambush predator that prefers to forage in or near wooded locations for birds, domestic poultry, and small mammals. Unlike falcons which use their beaks, Cooper's hawks subdue prey by continuously squeezing with talon-equipped feet. It has been observed on occasion drowning captured prey in water. This species prefers tree nesting in wooded areas typically 10 to 60 feet above ground level.

The study area contains suitable foraging and nesting habitat for this species.

Tricolored Blackbird

Tricolored blackbirds (*Agelaius tricolor*) are listed by CDFG as a species of special concern due to declining populations in the region. They are colonial nesters preferring to nest in dense stands of cattails and/or bulrush, but they also commonly nest in blackberry thickets associated with drainages, ditches, and canals. The nearest recorded nesting colony location is approximately 3.2 miles to the southwest near Mormon Island Dam.

The study area contains suitable foraging and nesting habitat.

TABLE 2:
EVALUATION OF SPECIAL STATUS SPECIES HABITATS

	Federal Status	State Status	CNPS Listing	Habitat Association	Potential Habitat In Study Area
Antrozous pallidus (pallid bat)	None	Species of Special Concern		Roosts in rock outcrops, hollow trees, abandoned mines, barns, and attics.	The lack of recent sightings make it unlikely to occur in the study area.
Lasionycteris noctivagans (silver-haired bat)	None	CDFG-Special Animals		Roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. It forages in open wooded areas near water features.	Roosting and foraging habitat is present.
Taxidea taxus (American badger)	None	Species of Special Concern		This species prefers dry open fields, grasslands, and pastures.	Foraging and burrowing habitat is present.
Accipiter cooperi (Cooper's hawk)	None	CDFG-Special Animals		Inhabits forested habitats, forest edge, and riparian habitat, may forage in adjacent grassland and fields.	Foraging and nesting habitat present.
Agelaius tricolor (tricolored blackbird)	None	Species of Special Concern		Colonial nester in cattails, bulrush, or blackberries associated with marsh habitats.	Nesting and foraging habitat is present.
Ammodramus savannarum (grasshopper sparrow)	None	Species of Special Concern		Favors native grasslands. Feeds on insects, particularly grasshoppers, which it forages from open ground.	Foraging and nesting habitat present.
Ardea alba (great egret)	None	CDFG-Special Animals		Rivers, streams, lakes, marsh and other aquatic habitats.	No
Ardea herodias (great blue heron)	None	CDFG-Special Animals		Rivers, streams, lakes, marsh and other aquatic habitats.	No
Athene cunicularia (burrowing owl)	None	Species of Special Concern		Nests in abandoned ground squirrel burrows associated with open grassland habitats.	No
Buteo Swainsoni (Swainson's hawk)	None	Threatened		Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland near large riparian corridors.	Marginal nesting and foraging habitat present; species unlikely present.
Elanus leucurus (white-tailed kite)	None	Fully Protected		Nests in riparian corridors along streams and rivers, and forages in nearby grasslands and fields.	Marginal nesting and foraging habitat present; species unlikely present.

TABLE 2:
EVALUATION OF SPECIAL STATUS SPECIES HABITATS

Haliaeetus leucocephalus (bald eagle)	Delisted	Endangered		Documented as wintering & nesting in El Dorado Co., they typically nest in oak woodland within 1 mile of lakes, rivers, or larger streams.	Foraging habitat present.
Laterallus jamaicensis coturniculus (California black rail)	None	Threatened		Nests and forages in salt, brackish, and fresh marshes with abundant vegetative cover.	No
Phalacrocorax auritus (double-crested cormorant)	None	CDFG-Special Animals		Nests in colonies on rocks, cliff, or in trees. It prefers open water habitats such as coastlines, ponds, rivers, lakes, estuaries, or lagoons.	No
Progne subis (purple martin)	None	Species of Special Concern		Prefers open areas near bodies of water or wetlands. It is a colonial nester which utilizes cavities in trees, cliff faces, buildings.	Foraging habitat present.
Actinemys marmorata marmorata (northwestern pond turtle)	None	Species of Special Concern		Ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	No
Phrynosoma coronatum (frontale population) (California horned lizard)	None	Species of Special Concern		Diverse habitat associations, but normally a low land species associated with sandy scrub habitat.	No
Rana draytonii (California red-legged frog)	Threatened	Species of Special Concern		Breeds in permanent to semi-permanent aquatic habitats including lakes, ponds, marshes, creeks, and other drainages.	No
Rana boyii (foothill yellow-legged frog)	None	Species of Special Concern		Prefers gravelly or sandy streams with open banks near woodlands.	No
Spea (=Scaphiopus) hammondii (western spadefoot toad)	None	Species of Special Concern		Breeds in vernal pools, seasonal wetlands and associated swales. Forages and hibernates in adjacent grasslands.	No
Andrena blennospermatis (solitary or ground nesting bee)	None	None		Forages in vernal pools for pollen from blennosperma (*Blennosperma nanum*), and nests in nearby uplands.	No
Banksula californica (Alabaster Cave harvestman)	None	None		Only known from Alabaster Cave in which has since been partially destroyed by historic mining. Presently, it is sealed with cement.	No
Branchinecta conservatio (Conservancy fairy shrimp)	Endangered	None		Vernal pools or other seasonal wetlands.	No

TABLE 2:
EVALUATION OF SPECIAL STATUS SPECIES HABITATS

Branchinecta lynchi (vernal pool fairy shrimp)	Threatened	None		Vernal pools or other seasonal wetlands.	No
Branchinecta mesovallensis (midvalley fairy shrimp)	None	None		Vernal pools or other seasonal wetlands.	No
Desmocerus californicus dimorphus (valley elderberry longhorn beetle)	Threatened	None		Dependent upon elderberry plant (Sambucus mexicana) as primary host species	No, elderberries were not observed.
Hydrochara rickseckeri (Ricksecker's water scavenger beetle)	None	None		Ponds, lakes, streams, rivers, vernal pools, and other freshwater features.	No
Lepidurus packardi (vernal pool tadpole shrimp)	Endangered	None		Vernal pools or other seasonal wetlands.	No
Linderiella occidentalis (California linderiella)	None	None		Vernal pools or other seasonal wetlands.	No
Allium jepsonii (Jepson's onion)	None	None	CNPS-1B.2	Prefers cismontane woodland or lower montane coniferous forests associated with serpentine soils or volcanic slopes.	No
Balsamorhiza macrolepis var. *macrolepis* (big-scale balsamroot)	None	None	CNPS-1B.2	Prefers chaparral, cismontane woodland, and valley and foothill grasslands.	Yes
Calystegia stebbinsii (Stebbin's morning glory)	Endangered	Endangered	CNPS-1B.1	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No
Ceanothus roderickii (Pine Hill ceanothus)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No
Chlorogalum grandiflorum (Red Hills soaproot)	None	None	CNPS-1B.2	Foothill chaparral, cismontane woodland, and lower montane coniferous forest. Usually found in Gabbro soils, but is known to grow on other soil types as well.	Yes
Clarkia biloba ssp. *brandegeeae* (Brandegee's clarkia)	None	None	CNPS-1B.2	Generally associated with chaparral and cismontane woodland, but may occur in foothill oak woodland and grassland.	Yes

TABLE 2:
EVALUATION OF SPECIAL STATUS SPECIES HABITATS

Fremontodenderon decumbens (Pine Hill flannelbush)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No
Galium californicum ssp. *sierrae* (El Dorado bedstraw)	Endangered	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No
Gratiola heterosepala (Bogg's Lake hedge-hyssop)	None	Endangered	CNPS-1B.2	Vernal pools and margins of lakes/ponds.	No
Helianthemum suffrutescens (Bisbee Peak rush rose)	None	None	CNPS-3.2	Open areas within chaparral. Can grow on Gabbro soils as well as other soil types.	No
Legenere limosa (legenere)	None	None	CNPS-1B.1	Vernal pools or other seasonal wetlands.	No
Packera layneae (Layne's ragwort)	Threatened	Rare	CNPS-1B.2	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No
Eryngium pinnatisectum (Tuolumne button-celery)	None	None	CNPS-1B.2	Cismontane woodlands, lower montane coniferous forests, and vernal pools.	No
Juncus leiospermus var. *ahartii* (Ahart's dwarf rush)	None	None	CNPS-1B.2	Margins of vernal pools.	No
Navarretia myersii ssp. *myersii* (Pin cushion navarretia)	None	None	CNPS-1B.1	Vernal pools and other seasonally flooded features.	No
Orcuttia tenuis (slender orcutt grass)	Threatened	Endangered	CNPS-1B.1	Vernal pools and other seasonally flooded features.	No
Orcuttia viscida (Sacramento orcutt grass)	Endangered	Endangered	CNPS-1B.1	Vernal pools and other seasonally flooded features.	No
Pseudobahia bahiifolia (Hartweg's golden sunburst)	Endangered	Endangered	CNPS-1B.1	Prefers grassland or open woodland with clay soils.	No
Sagittaria sanfordii (Sanford's arrowhead)	None	None	CNPS-1B.2	Emergent marsh habitat, typically associated with drainages, canals, or irrigation ditches.	No
Wyethia reticulata (El Dorado Co. mule ears)	None	None	CNPS-1B.2	Foothill chaparral and cismontane woodland associated with Gabbro soils.	No

Grasshopper Sparrow

The grasshopper sparrow (*Ammodramus savannarum*) is listed by CDFG as a species of special concern. This relatively small song bird favors open grasslands and feeds primarily on insects, particularly grasshoppers, which it forages from the ground. It builds on the ground well concealed cup-like nests composed of grass blades. It is also known to form loose breeding colonies.

The required nesting and foraging habitats are present within the study area.

Great Egret

The great egret (*Ardea alba*) is listed by CDFG as a special animal. This bird usually forages alone in shallow open water and wetlands for fish, amphibians, and aquatic invertebrates. The species has recovered from historic persecution by plume hunters, but destruction of wetlands, especially in the West where colonies are few and widely scattered, poses a current threat. Great egrets prefer breeding habitat in or near open waters and wetlands.

The required nesting and foraging habitat is not present.

Great Blue Heron

The great blue heron (*Ardea herodias*) is listed by CDFG as a special animal. This wading bird forages in wetlands and shallow open waters for fish, aquatic invertebrates, small mammals, and amphibians. It usually nests in rookeries that are situated in wetlands or near open waters.

The study area does not support the required nesting and foraging habitat for this species.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a ground nesting raptor species that is afforded protection by CDFG as a species of special concern due to declining populations in the Great Central Valley of California. They typically inhabit open grasslands and nest in abandoned ground squirrel burrows, cavities associated with raised mounds, levees, or soft berm features. The closest recorded occurrence is approximately 4.8 miles south of the study area near the El Dorado-Sacramento County line.

The study area does not contain the necessary foraging and nesting habitat for burrowing owl.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a raptor species currently listed as threatened in California by the CDFG. Breeding pairs typically nest in tall cottonwoods, valley oaks, or willows associated with riparian corridors, grassland, irrigated pasture, and cropland with a high density of rodents. The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter. The closest recorded occurrence is approximately 6.5 miles southwest of the study area north of Highway 16.

Marginal nesting and foraging habitats are present within the study area; however, it is unlikely that Swainson's hawks frequent the study area.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*), also known as black-shouldered kite, is a CDFG fully protected species. This non-migrating bird typically attains a wingspan of approximately 40 inches and feeds primarily on insects, small mammals, reptiles, and amphibians, which it forages from open grasslands. It builds a platform-like nest of sticks in trees or shrubs and lays 3 to 5 eggs, but may brood a second clutch if prey is abundant. The kite's distinct style of hunting includes hovering before diving onto its target.

Marginal nesting and foraging habitats are present within the study area; however, it is unlikely that white-tailed kites frequent the study area.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is a state endangered raptor that typically nests within one mile of large bodies of water including lakes, streams, or rivers. They prey on fish, waterfowl, squirrels, rabbits, and muskrats, though bald eagles have been observed feeding on carrion. They are solitary nesters and may be monogamous. The closest recorded occurrence is approximately 2.7 miles to the south at Bass Lake.

The site contains the appropriate foraging habitat for this species.

California Black Rail

The California black rail (*Laterallus jamaicensis coturniculus*) is listed as threatened in California by the CDFG. It favors salt, brackish, and fresh marshes at low elevations where it forages for seeds, insects, and isopods. It is a solitary nester favoring the edges of wetlands with tall grass and open space. Its range is poorly understood due mainly to its secretive nature. The data search revealed a single occurrence within the Rocklin quadrangle on Clover Creek about two miles northwest of Loomis or approximately 12 miles northwest of the study area.

The site does not support the required nesting and foraging habitat to support this species.

Purple Martin

The purple martin (*Progne subis*) is a California species of special concern. This bird winters in South American and migrates to Mexico, the United States, and southern Canada to breed. It is a colonial nester and utilizes natural cavities such as hollow trees, cliffs, and abandon woodpecker dens. Purple martins also take advantage of created nesting sites such as bird houses or gourds. It feeds on winged insects which it catches on the fly, and it prefers open areas near lakes, ponds, marshes or other water features.

The site appears to provide foraging habitat for purple martins.

Double-Crested Cormorant

The double-crested cormorant (*Phalacrocorax auritus*) is listed by CDFG as a species of special concern. This diving aquatic bird is the most widespread cormorant in North America. It prefers open water habitats such as ponds, rivers, estuaries, lagoons, and open coastlines where is forages for fish, amphibians, and crustaceans. It constructs nests near water in colonies on cliffs, rocks, or in trees.

Based on the lack of suitable habitat, double-crested cormorants are not likely to occur within the project area.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata marmorata*) is a California species of special concern. Its favored habitats include streams, large rivers and canals with slow-moving

water, aquatic vegetation, and open basking sites. Although the turtles must live near water, they can tolerate drought by burrowing into the muddy beds of dried drainages. This species feeds mainly on invertebrates such as insects and worms, but will also consume small fish, frogs, mammals and some plants. Northwestern pond turtle predators include raccoons, coyotes, raptors, weasels, large fish, and bullfrogs. This species breeds from mid to late spring in adjacent open grasslands or sandy banks.

The necessary habitat is not present for northwestern pond turtle.

California Red-Legged Frog

The California red-legged frog (*Rana draytonii*) is a federally threatened and a CDFG species of special concern. This species is the largest indigenous frog west of the Continental divide. Once harvested for food with an annual take of approximately 80,000 animals per year in the late 1800s and early 1900s, the red-legged frog began to decline. To bolster diminishing populations, the larger and much more aggressive bull frog (*Rana catesbiana*) was introduced from the eastern United States in 1886. Bull frogs, which are voracious feeders, extirpated the native frogs from much of its historic range. Habitat destruction associated with placer mining, drought, ranching, farming, and urbanization further reduced populations, and in June 1996, the frog was officially assigned protection under the Endangered Species Act. Presently, red-legged frogs are believed to occupy only about 10% of its original range. This species requires deeper (2' to 3') slow moving or still aquatic habitats with abundant emergent vegetation, but it is known also to forage and disperse in nearby uplands. The closest CNDDB occurrence is less than 2 miles northwest of the study area; a specimen was observed during surveys in 2005 in an unnamed drainage near Fitch Way on the east side of Folsom Reservoir.

The study area does not contain the appropriate habitat for this species.

Foothill Yellow-Legged Frog

The foothill yellow-legged frog (*Rana boyii*), which is found from the Umpqua Basin in Oregon to the Coastal Range and Sierra foothills of California, is a state species of special concern. It requires slow moving, gravelly or sandy bottomed streams with open, sunny banks for breeding and foraging. It has also been observed hunting for invertebrates in adjacent woodlands. The nearest occurrence is recorded approximately 11.5 miles to the northeast within a perennial reach of Indian Creek.

The study area does not contain the necessary habitat to support this species.

California Horned Lizard

The California horned lizard (*Phrynosoma coronatum*) is a California species of special concern. Several factors including commercial pet collecting (which was banned in 1981) and habitat destruction have resulted in the decline of the species. This lizard's ability to change color to match its background, and its low, flattened profile make it difficult to detect. When threatened, the horned lizard can shoot streams of blood from its eyes up to a distance of four feet. Ants compose about 50% of their diet, but it will consume other insects as well. Mature females produce clutches of 6 to 21 eggs from May to June, which hatch in August and September. It lives in several diverse habitats, but the California horned lizard typically prefers lowland sandy scrub habitats.

The study area does not contain the preferred scrub habitat most commonly associated with this species.

Western Spadefoot Toad

The western spadefoot toad (*Spea hamondii)* is a California species of special concern. It is a nocturnally active animal, and prefers to forage in grassland, scrub, and chaparral for a variety of insects, worms, and other invertebrates. This species breeds from January to May in vernal pools, pools in ephemeral stream courses, and other fish-free water features. Females commonly lay more than 500 eggs in one season. The tadpoles develop in 3 to 11 weeks, and must complete their metamorphosis before the temporary pools dry.

The required habitat is not present to support western spadefoot toads.

Solitary or Ground-Nesting Bee

The solitary bee (*Andrena blennospermatis*) is not a state or federal listed species; however, it has been assigned a State Ranking code of S2 meaning that 6 to 20 elemental occurrences or 1,000 to 3,000 individuals have been identified within the state. This ground nesting species collects pollen from the vernal pool flower, blennosperma (*Blennosperma nanum*), which it caches in several individual underground brood chambers. In each chamber the female deposits a solitary egg that will hatch and feed on the specially treated pollen ball. These bees forage in vernal pool habitat supporting blennosperma and burrow and nest in adjacent uplands.

The site's lack of vernal pools would greatly reduce the likelihood that this ground-nesting bee regularly occupies the parcel.

Alabaster Cave Harvestman

The Alabaster Cave harvestman (*Banksula californica*) was recorded by CNDDB as occurring within the vicinity of the study area. Though it maintains no special state or federal status, it has been assigned a State Ranking of SH meaning that all elemental occurrences are historical. *Banksula californica* is poorly understood and known only from specimens collected from Alabaster Cave around 1900. The Alabaster Cave in El Dorado County has since been partially destroyed by historic mining, and it is presently sealed with cement.

The site lacks the caves necessary to support these species.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is a federal threatened species that is dependent upon the elderberry plant (*Sambucus sp.*) as a primary host species. Elderberry shrubs are a common component of riparian areas throughout the Sacramento Valley region, and numerous occurrences of valley elderberry longhorn beetle have been recorded east of the study area with the closest located approximately 8 miles away.

No elderberry shrubs were observed during our site visits.

Ricksecker's Water Scavenger Beetle

This aquatic beetle (*Hydrochara rickseckeri*) is not a state or federal listed species; however, it has been assigned a State Ranking code of S1S2 meaning that <6 to 20 elemental occurrences or <1,000 to 3,000 individuals have been identified within the state. The habits of this poorly understood species have not been thoroughly documented. They are believed to be scavengers and metamorphose from a predacious larval stage. This species favors shallow, weedy freshwater habitats such as vernal pools, lakes, ponds, and slow moving streams. It is capable of flight, but its dispersal capabilities are not well understood.

The study area does not provide the required habitat to support this species.

Vernal Pool Branchiopods

The federally threatened vernal pool fairy shrimp *(Branchinecta lynchi)* and the federally endangered vernal pool tadpole shrimp (*Lepidurus packardi*) as well as the non-listed California linderiella (*Linderiella occidentalis*) and midvalley fairy shrimp (*Branchinecta mesovallensis*) has been documented by the CNDDB as occurring within the proximity of the study area. Due to the dearth of available distribution information, we also included the federally endangered Conservancy fairy shrimp (*Branchinecta conservatio*) in our special status species habitat assessment even though none are listed as occurring in any of the target quadrangles. These species exclusively inhabit vernal pools or other seasonally ponded wetlands that sustain inundation during the winter before drying in the late spring.

The site lacks the necessary habitat to support these species.

Special Status Plants Requiring Gabbro Soils

Several special status species plants associated with the mildly acidic Gabbro soils are identified on the CNDDB as occurring within the target quadrangles and include Stebbin's morning glory (*Calystegia stebbinsii*), Pine Hill flannelbush (*Fremontodon decumbens*), Pine Hill ceanothus (*Ceanothus roderickii*), El Dorado bedstraw (*Galium californicum sierrae*), Layne's ragwort (*Packera layneae*), and El Dorado mule ears (*Wyethia reticulata*). Gabbro soils are derived from igneous rock and possess peculiar characteristics such as high concentrations of magnesium, iron, nickel, chromium, and cobalt and low amounts of calcium and plant nutrients such as phosphorus. This unusual soil has resulted in the evolution of a unique community of plants, many of which are only found in El Dorado County.

Most of the above plants have only been documented in chaparral or cismontane woodland associated with the Gabbro soils region around Pine Hill. Though all have been observed within five miles of the study area, the appropriate soils (also known as the Rescue Series) are not present within the study area according to the April 1974, "**Soil Survey for El Dorado Area, California.**" It is unlikely any of the above species occur within the study area.

The CNDDB also lists the presence of two additional sensitive plant species associated with Gabbro soils. Bisbee Peak rush-rose (*Helianthemum suffrutescens*), and Red Hills soaproot (*Chlorogalum gradiflorum*) have been documented in the Gabbro region, but are known to grow on other soil types as well. Both occur in chaparral, but Red Hills soaproot is also found in

cismontane woodlands, and lower montane coniferous forest. Both species are documented by the CNDDB as occurring within 1.5 miles of the study area.

The appropriate habitat for Red Hills soaproot is present within the study area.

Plants Associated with Vernal Pools and Other Wet Habitats

Special status plant species identified by CNDDB as occurring in the general vicinity of the study area include dwarf pin cushion navarretia (*Navarretia myersii* ssp. *myersii*), legenere (*Legenere limosa*), slender orcutt grass (*Orcuttia tenuis*), Sacramento orcutt grass (*Orcuttia viscida*), Tuolumne button-celery (*Eryngium pinnatisectum*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), and Sanford's arrowhead (*Sagittaria sanfordii*). Pincushion navarretia, Ahart's dwarf rush, slender orcutt grass, Sacramento orcutt grass, and legenere are strongly associated with vernal pools or other seasonal wetlands. Bogg's Lake hedge-hyssop is found in vernal pools, but it also favors other shallow water habitats such as lake margins and marshes. Tuolumne button-celery occurs in vernal pools, but it is also found in other habitats such as cismontane woodland and lower coniferous montane forests. Sanford's arrowhead generally occurs in or near standing or slow-moving drainages, canals, ditches, or ponds.

The appropriate habitat types for these species are not present within the study area.

Other Special Status Plant Species

Several other special status species plants, such as Jepson's onion (*Allium jepsonii*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Hartweg's golden sunburst (*Pseudobahia bahiifolia*), and Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*) have been recorded as occurring within the target quadrangles. Jepson's onion grows in cismontane woodland and lower cismontane coniferous forests associated with serpentine soils or volcanic slopes. Big-scale balsamroot is found in valley or foothill grasslands or cismontane woodland habitats; it sometimes is found on serpentine soils. Hartweg's golden sunburst is a federal and California endangered species associated with grasslands and/or open forests with clay soils. Brandegee's clarkia is generally associated with chaparral and cismontane woodland, but is also documented in foothill oak woodland and grassland.

Habitat is present within the study area for all of the above species except Hartweg's golden sunburst and Jepson's onion.

SUMMARY OF SPECIAL STATUS SPECIES HABITAT ASSESSMENT

Based on the presence of suitable habitat the following species may occur within the study area: silver-haired bat, American badger, Cooper's hawk, tricolored blackbird, grasshopper sparrow, bald eagle, purple martin, big-scaled balsamroot, Red Hills soaproot, and Brandegee's clarkia.

If future development of the study area will occur during the raptor nesting season, which extends from February to September, we recommend that a pre-construction nesting survey be completed within two weeks of the start of work.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

August 23, 2011

SEP 6 2011

RECEIVED
PLANNING DEPARTMENT
11 SEP 15 AM 8:14

Regulatory Division SPK-2011-00646

Ms. Ann Wilson
4101 Greenview Drive
El Dorado Hills, California 95762

Dear Ms. Wilson:

We are responding to your June 24, 2011, request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Wilson Estates site. The approximately 28-acre site is located on or near Section 14, Township 10 North, Range 8 East, Mount Diablo Meridian Survey, Latitude 38.7138281150738°, Longitude -121.06310440849°, El Dorado Hills, El Dorado County, California.

Based on available information, **we concur with the estimate of potential waters of the United States, as depicted on the January 2009, Jurisdictional Delineation, Wilson Estates Property drawing prepared by Gibson & Skordal, LLC** (enclosure 1). The approximately 0.0748 acre of wetlands or other water bodies present within the survey area may be jurisdictional waters of the United States. These waters may be regulated under Section 404 of the Clean Water Act.

A copy of our RGL 08-02 Preliminary Jurisdictional Determination Form for this site is enclosed (enclosure 2). Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal (RFA) form is enclosed to notify you of your options with this determination (enclosure 3). This determination may not be valid for the wetland conservation provisions of the Food Security Act

of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey.*

Please refer to identification number SPK-2011-00646 in any correspondence concerning this project. If you have any questions, please contact Mr. Peck Ha at our California North Branch Office, Regulatory Division, Sacramento District, U.S. Army Corps of Engineers, 650 Capitol Mall, Suite 5-200, Sacramento, California 95814-4708, email *Peck.Ha@usace.army.mil*, or telephone 916-557-6617. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html.*

Sincerely,

Nancy Arcady Haley

Nancy Arcady Haley
Chief, California North Branch

Enclosures

Copy Furnished without enclosures:
Mr. James Gibson, Gibson & Skordal, LLC, 2277 Fair Oaks Blvd, Suite 105, Sacramento, California 95825

Copies Furnished with enclosure 1:
Mr. Dan Radulescu, Storm Water and Water Quality Certification Unit, California Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Mr. Kent Smith, California Department of Fish and Game, Region 2, 1701 Nimbus Drive, Rancho Cordova, California 95670-4599
Ms. Kim Squires, Forest Foothill Branch, U.S. Fish and Wildlife Service, Endangered Species Division, 2800 Cottage Way, Suite W2605, Sacramento, California 95825-3901
Mr. Jason Brush, Environmental Protection Agency, WRT-8, 75 Hawthorne Street, San Francisco, California 94105

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
Sacramento District

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: **California North** File/ORM #: **SPK-2011-00646** PJD Date: **August 23, 2011**

State: **CA** City/County: **, El Dorado County**
Nearest Waterbody:

Location (Lat/Long): **38.7138281150738°, -121.06310440849°**

Size of Review Area: **28** acres

Name/Address Of Property Owner/ Potential Applicant: **Ann Wilson**
4101 Greenview Drive
El Dorado Hills, California 95762

Identify (Estimate) Amount of Waters in the Review Area
Non-Wetland Waters:
linear feet ft wide acre(s)
Stream Flow: **N/A**

Wetlands: **0.0748** acre(s) Cowardin Class: **N/A**

Name of any Water Bodies on the site identified as Section 10 Waters: Tidal: Non-Tidal:

☒ Office (Desk) Determination
☐ Field Determination:
Date(s) of Site Visit(s):

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **January 2009, Jurisdictional Delineation, Wilson Estates Property drawing prepared by Gibson & Skordal, LLC**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Data sheets prepared by the Corps.
☐ Corps navigable waters' study.
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLARKSVILLE**
☐ USDA Natural Resources Conservation Service Soil Survey.
☐ National wetlands inventory map(s).
☐ State/Local wetland inventory map(s).
☐ FEMA/FIRM maps.
☐ 100-year Floodplain Elevation (if known):
☒ Photographs: ☒ Aerial
  ☒ Other
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:
1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Ann Wilson,	File No.: SPK-2011-00646	Date: August 23, 2011

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/inet/functions/cw/cecwo/reg* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION III: REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Peck Ha Regulatory Project Manager U.S. Army Corps of Engineers 1325 J Street, Room 1480 Sacramento, California 95814-2922 Phone: 916-557-6617, FAX 916-557-6877 Email: Peck.Ha@usace.army.mil (Use this address for submittals to the **district** engineer)	If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh Administrative Appeal Review Officer U.S. Army Corps of Engineers 1455 Market Street San Francisco, California 94103-1399 Phone: 415-503-6574, FAX 415-503-6646) Email: Thomas.J.Cavanaugh@usace.army.mil (Use this address for submittals to the **division** engineer)

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Gibson & Skordal, LLC
WETLAND CONSULTANTS

June 1, 2012

Mr. Dave Crosariol
CTA Engineering and Surveying
3233 Monier Circle
Rancho Cordova, California 95742

Subject: **Biological Information for Road Crossing – Wilson Estates, El Dorado County, California**

Dear Mr. Crosariol:

This letter responds to the request by El Dorado County Development Services Department to provide an updated biological report addressing the road crossing of Dutch Ravine. Their request is included in their letter to you dated May 18, 2012.

Gibson & Skordal, LLC prepared a Jurisdictional Delineation and Special Status Species Evaluation for the Wilson Estates property in January 2009, and Special Status Plant Survey in August 2011.

The proposed crossing of Dutch Ravine will be constructed such that no work will be conducted within the jurisdictional channel, however, it will be covered by the crossing. As such, a Corps of Engineers' authorization under Section 404 of the Clean Water Act will not be required, although a Streambed Alteration Agreement from California Department of Fish and Game (CDFG) will be required. Since this authorization requires a CEQA document for the application to be complete, it is not possible to identify mitigation measures specified by CDFG until the CEQA document has been completed. Any conditions required by CDFG will be incorporated in the design and construction of the crossing.

The effects of the road crossing on jurisdictional waters is minimal since the road crossing is only 50 feet wide, and the channel bed and bank will not be disturbed since the channel is being spanned. The channel does not provide habitat for any special status species nor will its flow be impeded by the crossing. The channel will be indirectly impacted however, as a result of it being covered. It is my opinion that purchase of 300 square feet channel credits at a mitigation bank (6 feet wide and 50 feet in length), and implementation of best management practices should adequately offset impacts associated with the road crossing.

If you have questions or need additional information, feel free to contact me at (916) 822-3230.

Sincerely,

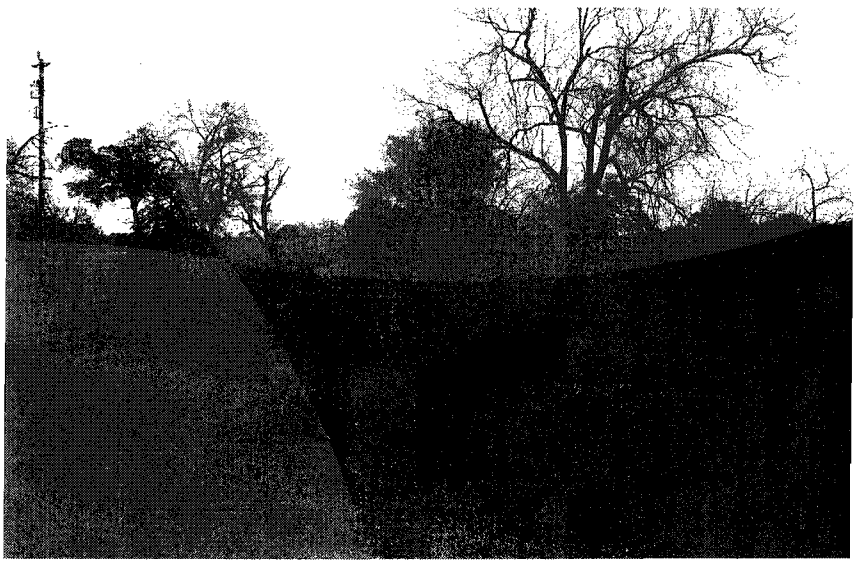
James C. Gibson
Principal

Exhibit U–Attachment 11

2617 K Street, Suite 175, Sacramento, California 95816
phone: 916.822.3230 • fax: 916.822.3231

PHASE I ARCHAEOLOGICAL STUDY
OF THE WILSON ESTATES PROJECT,
ASSESSORS PARCEL NO. 126:070:22, 23 AND 30,
BORDERING MALCOLM DIXON ROAD,
EL DORADO HILLS, EL DORADO COUNTY, CALIFORNIA 95762

JANUARY 2011



Prepared For:

Brian Veit

One Maritime Plaza, Suite 1103

San Francisco, CA 94111

CTA Engineering and Surveying

3233 Monier Circle,

Rancho Cordova, CA 95742

Prepared By:

Historic Resource Associates

2001 Sheffield Drive

El Dorado Hills, CA 95762

Exhibit U–Attachment 12

Malcolm Dixon Road from the farm of Charles Dixon, and Dixon family members taught for many years at the school, until it finally closed its doors around 1950. The school, however, is not part of the current project.

X. RECOMMENDATIONS

During the course of grading activities within the perimeter of the Charles Dixon Farm Site, as defined by Figure 1, archaeological monitoring should occur. If previously unidentified or subsurface archaeological sites or features are discovered, work should stop at that location and the discovery should be examined for its potential significance and removed if deemed of scientific value, after which work can proceed once again.

In addition, an interpretive sign should be designed in consultation with the El Dorado County Historical Museum to commemorate the location of the Charles Dixon Farm and the Live Oak School. The sign should be mounted in an appropriate location near the site and along Malcolm Dixon Road.

XI. PROFESSIONAL QUALIFICATIONS

Dana E. Supernowicz, principal of Historic Resource Associates, earned his M.A. degree in History at California State University, Sacramento in 1983, with an emphasis in California and Western United States history. Supernowicz has over 30 years of experience working in the field of cultural resources management for federal and state agencies, as well as 25 years in private consulting. He had also served as president of the El Dorado County Historical Society, and is a member of the Society for California Archaeology, Oregon-California Trails Association, and the National Trust for Historic Preservation.

XII. REFERENCES

Secondary Sources

Ayers, James and Gregory Seymour. *Life on a 1930s Homestead: Historical Archaeological Investigations of the Brown Homestead on the Middle Agua Fria River, Yavapai County, Arizona*. SWCA Anthropological Research Paper Number 2, Tucson, AZ. 1993.

Revised

Received
July 12 2012

DRAINAGE REPORT

WILSON ESTATES

July 2012

~~Prepared: June 2011~~

cta Engineering & Surveying

Civil Engineering ▪ Land Surveying ▪ Land Planning

Exhibit U–Attachment 13

Z 11-0007

PD 11-0004/TM11-1504

WILSON ESTATES DRAINAGE STUDY SHED PARAMETERS – Tc's.

SHED ID	SHEET FLOW TRAVEL TIME					SHALLOW CONCENTRATED FLOW				CHANNEL FLOW TIME						SUM Tc (min)	Shed Area (mi^2)	Ia	CN	Lag (min)	Shed Area (ac)	SHED ID
	L1 (ft)	n	P (in)	S1	Tc1 (min)	Unpaved Length (ft)	S2	V2 (ft/sec)	Tc2 (min)	Channel Length (ft)	S2	V2 (ft/sec)	Altitude Index H (0.001ft)	Peak discharge Q (cfs)	Tc3 (min)							
PRE-DEVELOPMENT																						
A	180	0.24	2.52	0.110	13.01	6550	0.030	2.79	39.06	1050	0.044	3.7	0.84	19.0	4.73	64.53	0.3531	0.36	84.65	38.7	226.0	A
	120	0.24	2.52	0.180	7.73																	
B*	300	0.16	2.52	0.060	16.99	300	0.116	5.50	0.91							16.99	0.0084	0.36	84.8	10.2	5.4	B
C	300	0.24	2.52	0.080	22.24	950	0.085	4.70	3.37							25.61	0.0099	0.35	85.2	15.4	6.4	C
D	300	0.24	2.52	0.065	24.17	1260	0.086	4.73	4.44							28.61	0.0181	0.38	84.0	17.2	11.6	D
POST-DEVELOPMENT																						
A1	180	0.24	2.52	0.110	13.01	6550	0.030	2.79	39.06	1050	0.044	3.7	0.84	18.8	4.73	64.53	0.35000	0.36	84.68	38.7	224.0	A1
	120	0.24	2.52	0.180	7.73																	
A2					10.00	100	0.07	5.38	0.31	120		10.0			0.20	11.3	0.00578	0.33	85.86	6.79	3.70	A2
						245	0.097	5.03	0.81													
B	210	0.24	2.52	0.084	16.40	355	0.030	3.52	1.68	322		10.0			0.54	18.6	0.00922	0.34	85.59	11.17	5.90	B
C	180	0.24	2.52	0.080	15.43	320	0.07	4.27	1.25							18.4	0.00813	0.34	85.65	11.07	5.20	C
						480	0.050	4.55	1.76													
D	260	0.24	2.52	0.086	19.27	120	0.07	4.24	0.47							22.4	0.01234	0.32	86.30	13.45	7.90	D
						345	0.04	4.07	1.41	100		10.0			0.17							
						260	0.06	3.95	1.10													

LEGEND

SHEET	PIPE
PAVED	CHANNEL
UNPAVED	HOUSE

NOTES:

* n value for shed B is adjusted to reflect road/gravel (0.011) and dense grass (0.24) combination for the roughness coefficient

WILSON ESTATES LAND USE SHED CHARACTERISTICS

PRE-CONSTRUCTION

SHED A	ac	CN	CNcomp
Woods/Grass fair	98	82	35.6
Range D fair	103.5	84	38.5
Impervious	24.5	98	10.6
	226		**84.65**
SHED B	**ac**	**CN**	**CNcomp**
Pasture D fair	5.1	84	79.3
Road	0.3	98	5.4
	5.40		**84.8**
SHED C	**ac**	**CN**	**CNcomp**
Pasture D fair	5.5	84	77.0
Road	0.5	98	8.2
	6.00		**85.2**
SHED D	**ac**	**CN**	**CNcomp**
Pasture D fair	11.6	84	**84.0**

POST-CONSTRUCTION

SHED A	ac	CN	CNcomp
Woods/Grass fair	98	82	35.9
Range D fair	97.7	84	36.6
Impervious	24.5	98	10.7
lots	3.6	84.6	1.4
GV Connector	0.200	98	0.1
0.35000	**224**		**84.68**
SHED A2	**ac**	**CN**	**CNcomp**
Open space good	0.62	80	13.4
Residential 1	2.52	84.6	57.6
GV Connector	0.56	98	14.8
0.00578	**3.7**		**85.86**
SHED B	**ac**	**CN**	**CNcomp**
Open Space good	0.66	80	9.0
Residential 1	4.55	84.6	65.6
Road	0.66	98	11.0
0.00917	**5.87**		**85.59**
SHED C	**ac**	**CN**	**CNcomp**
Open Space good	0.8	80	12.4
Residential 1	3.7	84.6	60.4
Road	0.68	98	12.9
0.00809	**5.18**		**85.65**
SHED D	**ac**	**CN**	**CNcomp**
Residential 1	6.9	84.6	73.9
Road	1	98	12.4
0.01234	**7.9**		**86.3**

Project: Wilson Estates Simulation Run: Existing 10

Start of Run: 06Jun2011, 01:00 Basin Model: Existing
End of Run: 07Jun2011, 01:01 Meteorologic Model: SCS 1 10y
Compute Time: 10May2012, 10:43:45 Control Specifications: 24H

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.3531	152.1	06Jun2011, 11:33	2.14
B	0.0084	7.3	06Jun2011, 11:03	2.17
C	0.0099	7.3	06Jun2011, 11:08	2.20
D	0.0181	12.0	06Jun2011, 11:10	2.10
Sink-A	0.3531	152.1	06Jun2011, 11:33	2.14
Sink-C	0.0099	7.3	06Jun2011, 11:08	2.20

Project: Wilson Estates Simulation Run: Proposed 2012 10

Start of Run: 06Jun2011, 01:00 Basin Model: Poposed 2012
End of Run: 07Jun2011, 01:01 Meteorologic Model: SCS 1 10y
Compute Time: 10May2012, 10:33:17 Control Specifications: 24H

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A1	0.3500	151.0	06Jun2011, 11:33	2.14
A2	0.0057	6.0	06Jun2011, 11:00	2.27
B	0.0092	8.0	06Jun2011, 11:04	2.24
C	0.0081	7.1	06Jun2011, 11:04	2.24
D	0.0123	10.2	06Jun2011, 11:06	2.30
JA	0.3557	152.1	06Jun2011, 11:33	2.14
Sink-A	0.3557	152.1	06Jun2011, 11:33	2.14

Project: Wilson Estates Simulation Run: Existing 100

Start of Run: 06Jun2011, 01:00 Basin Model: Existing
End of Run: 07Jun2011, 01:01 Meteorologic Model: SCS 1 100y
Compute Time: 10May2012, 10:43:50 Control Specifications: 24H

Volume Units: IN

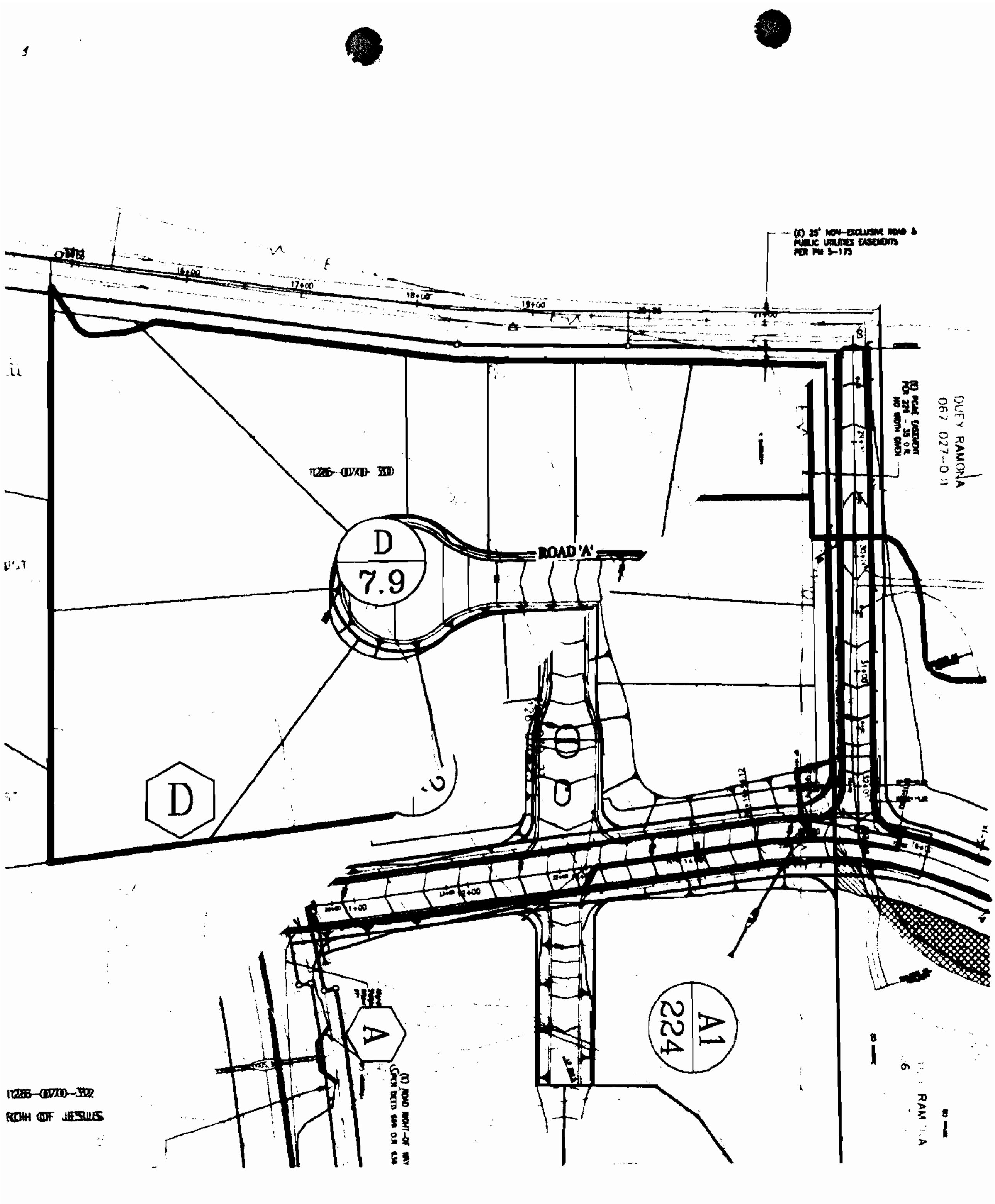
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A	0.3531	256.2	06Jun2011, 11:33	3.52
B	0.0084	12.3	06Jun2011, 11:03	3.58
C	0.0099	12.2	06Jun2011, 11:08	3.61
D	0.0181	20.4	06Jun2011, 11:10	3.49
Sink-A	0.3531	256.2	06Jun2011, 11:33	3.52
Sink-C	0.0099	12.2	06Jun2011, 11:08	3.61

Project: Wilson Estates Simulation Run: Proposed 2012 100

Start of Run: 06Jun2011, 01:00 Basin Model: Poposed 2012
End of Run: 07Jun2011, 01:01 Meteorologic Model: SCS 1 100y
Compute Time: 10May2012, 10:33:24 Control Specifications: 24H

Volume Units: IN

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A1	0.3500	254.1	06Jun2011, 11:33	3.52
A2	0.0057	9.8	06Jun2011, 11:00	3.69
B	0.0092	13.3	06Jun2011, 11:04	3.65
C	0.0081	11.7	06Jun2011, 11:04	3.66
D	0.0123	16.7	06Jun2011, 11:06	3.72
JA	0.3557	256.0	06Jun2011, 11:32	3.53
Sink-A	0.3557	256.0	06Jun2011, 11:32	3.53


(E) 25' NON-EXCLUSIVE ROAD & PUBLIC UTILITIES EASEMENTS PER PM 5-173
ROAD 'A'
D
7.9
D
A
A1
224
DUFY RAMONA

Environmental Noise Assessment

Wilson Estates

El Dorado Hills, California

BAC Job # 2011-043

Prepared For:

Ann Wilson

4101 Greenview Drive
El Dorado Hills, CA 96762

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

May 3, 2012

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Exhibit U–Attchment 14

Introduction

The proposed Wilson Estates (project) site is located within El Dorado County along Green Valley Road at the location shown on Figure 1. Due to the proximity of proposed residences to Green Valley Road, Bollard Acoustical Consultants, Inc. (BAC) was retained to prepare this noise study. Specifically, the purpose of this assessment is to quantify noise generated by Green Valley Road traffic as it affects the project site and to recommend appropriate noise mitigation measures where future traffic noise levels are predicted to exceed applicable El Dorado County Noise Element standards.

Noise Fundamentals and Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and thus are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Table 1 shows common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

Figure 1

Wilson Estates - El Dorado County, California

Proposed Site Plan & Traffic Noise Calibration Locations

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Scale (feet)
0 150 300

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn}-based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

Table 1
Typical A-Weighted Sound Levels of Common Noise Sources

Loudness Ratio	dBA	Description
128	130	Threshold of pain
64	120	Jet aircraft take-off at 100 feet
32	110	Riveting machine at operators position
16	100	Shotgun at 200 feet
8	90	Bulldozer at 50 feet
4	80	Diesel locomotive at 300 feet
2	70	Commercial jet aircraft interior during flight
1	60	Normal conversation speech at 5-10 feet
1/2	50	Open office background level
1/4	40	Background level within a residence
1/8	30	Soft whisper at 2 feet
1/16	20	Interior of recording studio

Criteria for Acceptable Noise Exposure

The Noise Element of the El Dorado County General Plan contains policies to ensure that County residents are not subjected to noise beyond acceptable levels. The current General Plan was adopted on July 19, 2004.

Policy 6.5.1.1 of the County Noise Element requires an acoustical analysis for new residential developments located in potentially noise-impacted areas.

Policy 6.5.1.8 of the County Noise Element establishes 45 and 60 dB L_{dn} as being acceptable interior and exterior noise levels, respectively, for new residential uses affected by transportation (traffic, railroad) noise sources. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with the 45 dB L_{dn} standard.

Future Traffic Noise Environment

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the CALVENO vehicle noise emission curves was used to predict traffic noise levels at the project site. The FHWA Model is the traffic noise prediction model preferred by the Federal Highway Administration and the State of California Department of Transportation (Caltrans) for use in traffic noise assessment.

Traffic noise level measurements were completed using Larson-Davis Laboratories, Inc. (LDL) Model 820 sound level meters equipped with a G.R.A.S. Model 40AQ ½" microphone. The measurement instrumentation was calibrated in the field before use with an LDL Model CAL200 acoustical calibrator. The measurement system meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound measurement systems.

On July 7, 2011, Bollard Acoustical Consultants, Inc. staff completed a project site inspection and traffic noise level measurements (Green Valley Road). Counts of Green Valley Road traffic were completed during the noise level measurements to be used toward calibration of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108). Measurements were completed at a height of 5 feet above the ground and approximately 10-15 feet above the existing roadway elevation. All three measurement sites were located approximately 100 feet from the centerline of Green Valley Road, in the vicinity of the closest proposed residential properties. The noise level measurement locations are illustrated on Figure 1.

The short-term traffic noise level measurements and traffic volume counts were used to calibrate the FHWA Model regarding the prediction of future traffic noise exposure on the project site. The noise level measurement results were compared to the FHWA Model results to determine any applicable noise modeling offsets/adjustments (calibration of the Model). For this project, the Model was found to over-predict traffic noise exposure on the project site due to acoustical shielding from the elevated site (topography) and above-average ground absorption (tall grasses). Under project conditions, acoustical shielding from project-area topography would remain, but ground absorption would be significantly reduced. To account for these conditions, a conservative Model adjustment of -2 dB was provided for the final traffic noise assessment. The complete calibration results are provided in the Appendix B.

With the applied FHWA Model offset, a future (2035) Green Valley Road traffic volume of 15,500 ADT (SACOG, October 2010), an assumed day/night traffic distribution of 83%/17%, an auto/medium truck/heavy truck traffic distribution of 98%/2%/0% (consistent with field observations), and an actual traffic speed of 50 MPH, future (2035) Green Valley Road traffic noise exposure at the project lots was calculated to be 60-63 dB L_{dn} depending on the lot. These are conservative estimates of future traffic noise exposure on the project site. The calculated traffic noise exceeds the applicable 60 dB L_{dn} exterior criterion. Table 2 provides Green Valley Road traffic noise contour distances and calculated future L_{dn} for various lots. The FHWA Model inputs and predicted future traffic noise levels at the project site are shown in

Appendix B and C, respectively. Recommended mitigation measures are discussed in the following section.

Table 2
Future Traffic Noise Levels and Contour Distances
Wilson Estates – El Dorado County

Lot Number	Distance (feet)[1]	L_{dn} (dB)
24	160	61
27	170	60
31	130	62
32	110	63
37	110	63
38	130	62

Notes: [1] Distance measured from centerline of roadway to approximate center of outdoor activity area (backyard).
Source: Bollard Acoustical Consultants, Inc.

It is estimated that future (2035) traffic noise exposure from Green Valley Road may be as high as 66 dB L_{dn} at second-floor building facades facing the roadway. These facades would not benefit from topographic shielding or significant ground absorption unlike ground-floor receivers, and would therefore experience incrementally higher noise exposure.

Assuming that standard residential construction would provide a minimum exterior-to-interior noise level reduction of 25 dB with windows and exterior doors closed, interior noise exposure from future (2035) Green Valley Road traffic may be as high as 38 dB L_{dn} and 41 dB L_{dn} within the closest first-floor and second-floor project rooms, respectively. Therefore, future traffic noise exposure within project dwellings would not be expected to exceed the applicable 45 dB L_{dn} limit. It is assumed that all project dwellings would be provided with appropriately designed mechanical systems so that windows and exterior doors may be closed when needed for noise insulation.

Traffic Noise Mitigation

Predicted future Green Valley Road traffic noise levels at the outdoor activity areas of the proposed project (63 dB L_{dn}) are expected to exceed the El Dorado County exterior traffic noise standard (60 dB L_{dn}). It is recommended that noise barriers measuring 6-feet in height relative to backyard elevations be constructed at the locations depicted in Figure 1. Based on the topography of the site plan, there is an elevation of 4 feet between the road and the house pad. At that height, such barriers would be expected to provide a 7 dB reduction in traffic noise levels. As a result, future traffic noise levels at the outdoor activity areas would be expected to comply with the El Dorado County exterior traffic noise standard. The barrier insertion loss calculations and graphs are shown in Appendix D and E, respectively.

At the southeastern-most lot in this development, the project engineer has stated that barrier construction would be problematic from a tree-preservation standpoint. As a result, alternative mitigation measures are recommended for this lot. The predicted future traffic noise level at this location is 61 dB Ldn, which only exceeds the County noise standard by 1 dB. Therefore, provided the primary outdoor activity area of this lot is positioned in an area which is either partially or completely shielded from view of Green Valley Road by the residence constructed on this property, by a wing-wall, or through the creation of a courtyard, the County's exterior noise standard will be satisfied.

Conclusions and Recommendations

Future Green Valley Road traffic noise levels at the outdoor activity areas (backyards) of the Wilson Estates project site are expected to exceed the exterior El Dorado County traffic noise level standard, although only by a small margin. As a means of achieving compliance with the exterior standard, a 6-foot high noise barrier is recommended at the location depicted in Figure 1. As a result, Green Valley Road traffic noise exposure at the outdoor activity areas (backyards) of the shielded lots would be expected to be less than 60 dB L_{dn}.

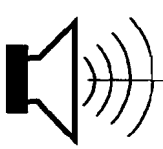
Barriers should be constructed of concrete or masonry block, or precast concrete. Wood is not recommended due to eventual warping and shrinking of materials which results in openings and cracks which compromise the barrier longevity. Other prefabricated barriers may be used. However, they should be reviewed by an acoustical consultant.

At the southeastern-most lot in this development, the project engineer has stated that barrier construction would be problematic from a tree-preservation standpoint. As a result, alternative mitigation measures are recommended for this lot. Provided the primary outdoor activity area of this lot is positioned in an area which is either partially or completely shielded from view of Green Valley Road by the residence constructed on this property, by a wing-wall, or through the creation of a courtyard, the County's exterior noise standard will be satisfied at this lot as well. This approach would result in compliance with the County's noise requirements without the need to potentially remove trees for the construction of a noise barrier at this lot.

These conclusions are based on the traffic data provided by Kimley-Horn and Associates, Inc. and noise reduction data for standard residential dwellings. Bollard Acoustical Consultants, Inc. is not responsible for degradation in acoustic performance of the residential construction due to poor construction practices, failure to comply with applicable building code requirements, or for failure to adhere to the minimum building practices cited in this report.

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



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Appendix B-1

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) Calibration Worksheet

Project Information:	Job Number:	2010-063
	Project Name:	Wilson Estates
	Roadway Tested:	Green Valley Road
	Test Location:	Site 1
	Test Date:	July 7, 2011
Weather Conditions:	Temperature (Fahrenheit):	91
	Relative Humidity:	23%
	Wind Speed and Direction:	Calm
	Cloud Cover:	Clear
Sound Level Meter:	Sound Level Meter:	LDL Model 820
	Calibrator:	LDL Model CAL200
	Meter Calibrated:	Immediately before
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On project site
	Distance to Centerline (feet):	100
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	10
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	2
	Posted Maximum Speed (mph):	55
Test Parameters:	Test Time:	1:48 PM
	Test Duration (minutes):	15
	Observed Number Automobiles:	164
	Observed Number Medium Trucks:	1
	Observed Number Heavy Trucks:	1
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	56.0
	Level Predicted by FHWA Model:	60.5
	Difference:	***4.5 dB***

Conclusions:

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Appendix B-2

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) Calibration Worksheet

Project Information:	Job Number:	2010-063
	Project Name:	Wilson Estates
	Roadway Tested:	Green Valley Road
	Test Location:	Site 2
	Test Date:	July 7, 2011
Weather Conditions:	Temperature (Fahrenheit):	91
	Relative Humidity:	23%
	Wind Speed and Direction:	Calm
	Cloud Cover:	Clear
Sound Level Meter:	Sound Level Meter:	LDL Model 820
	Calibrator:	LDL Model CAL200
	Meter Calibrated:	Immediately before
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On project site
	Distance to Centerline (feet):	100
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	15
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	2
	Posted Maximum Speed (mph):	55
Test Parameters:	Test Time:	1:48 PM
	Test Duration (minutes):	15
	Observed Number Automobiles:	164
	Observed Number Medium Trucks:	1
	Observed Number Heavy Trucks:	1
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	57.6
	Level Predicted by FHWA Model:	60.5
	Difference:	***2.9 dB***

Conclusions:

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Appendix B-3

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) Calibration Worksheet

Project Information:	Job Number:	2010-063
	Project Name:	Wilson Estates
	Roadway Tested:	Green Valley Road
	Test Location:	Site 3
	Test Date:	July 7, 2011
Weather Conditions:	Temperature (Fahrenheit):	91
	Relative Humidity:	23%
	Wind Speed and Direction:	Calm
	Cloud Cover:	Clear
Sound Level Meter:	Sound Level Meter:	LDL Model 820
	Calibrator:	LDL Model CAL200
	Meter Calibrated:	Immediately before
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On project site
	Distance to Centerline (feet):	100
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	15
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	2
	Posted Maximum Speed (mph):	55
Test Parameters:	Test Time:	2:25 PM
	Test Duration (minutes):	15
	Observed Number Automobiles:	186
	Observed Number Medium Trucks:	5
	Observed Number Heavy Trucks:	4
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	60.7
	Level Predicted by FHWA Model:	62.4
	Difference:	***1.7 dB***

Conclusions:

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road

Traffic Data:

Year:	2035
Average Daily Traffic Volume:	15,500
Percent Daytime Traffic:	83
Percent Nighttime Traffic:	17
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	0.1
Assumed Vehicle Speed (mph):	50
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				L_{dn}, dB			
Location:	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
1	Lot 24 Backyard	160	-2	60	51	42	61
2	Lot 27 Backyard	170	-2	60	50	42	60
3	Lot 31 Backyard	130	-2	61	52	43	62
4	Lot 32 Backyard	110	-2	62	53	44	63
5	Lot 37 Backyard	110	-2	62	53	44	63
6	Lot 38 Backyard	130	-2	61	52	43	62

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	24
70	51
65	110
60	237

Notes: A conservative offset of -2 dB offset was applied based on the calibration results in Appendix B.

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Appendix D-1

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 24 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 51
Heavy Truck L_{dn}, dB: 42

Site Geometry:

Receiver Description: Lot 24 Backyard
Centerline to Barrier Distance (C_1): 130
Barrier to Receiver Distance (C_2): 30
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
16	6	53	44	36	**53**	Yes	Yes	Yes
17	7	52	43	35	**52**	Yes	Yes	Yes
18	8	51	42	34	**51**	Yes	Yes	Yes
19	9	50	41	33	**51**	Yes	Yes	Yes
20	10	49	40	32	**50**	Yes	Yes	Yes
21	11	49	40	32	**49**	Yes	Yes	Yes
22	12	48	39	31	**49**	Yes	Yes	Yes
23	13	47	38	30	**48**	Yes	Yes	Yes
24	14	47	38	29	**47**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix D-2

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 27 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 60
Medium Truck L_{dn}, dB: 50
Heavy Truck L_{dn}, dB: 42

Site Geometry:

Receiver Description: Lot 27 Backyard
Centerline to Barrier Distance (C_1): 120
Barrier to Receiver Distance (C_2): 50
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
16	6	52	43	35	**52**	Yes	Yes	Yes
17	7	51	42	35	**51**	Yes	Yes	Yes
18	8	50	41	34	**51**	Yes	Yes	Yes
19	9	49	41	33	**50**	Yes	Yes	Yes
20	10	49	40	32	**50**	Yes	Yes	Yes
21	11	49	39	32	**49**	Yes	Yes	Yes
22	12	48	39	31	**48**	Yes	Yes	Yes
23	13	47	38	31	**48**	Yes	Yes	Yes
24	14	47	38	30	**47**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix D-3

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 31 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 52
Heavy Truck L_{dn}, dB: 43

Site Geometry:

Receiver Description: Lot 31 Backyard
Centerline to Barrier Distance (C_1): 90
Barrier to Receiver Distance (C_2): 40
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
16	6	53	44	37	**53**	Yes	Yes	Yes
17	7	52	43	36	**52**	Yes	Yes	Yes
18	8	51	42	35	**52**	Yes	Yes	Yes
19	9	51	42	34	**51**	Yes	Yes	Yes
20	10	50	41	33	**50**	Yes	Yes	Yes
21	11	49	40	33	**50**	Yes	Yes	Yes
22	12	49	40	32	**49**	Yes	Yes	Yes
23	13	48	39	31	**49**	Yes	Yes	Yes
24	14	48	39	31	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix D-4

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 32 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 44

Site Geometry:

Receiver Description: Lot 32 Backyard
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 40
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
16	6	53	44	37	**54**	Yes	Yes	Yes
17	7	52	43	36	**53**	Yes	Yes	Yes
18	8	52	43	35	**52**	Yes	Yes	Yes
19	9	51	42	35	**52**	Yes	Yes	Yes
20	10	50	41	34	**51**	Yes	Yes	Yes
21	11	50	41	33	**50**	Yes	Yes	Yes
22	12	49	40	33	**50**	Yes	Yes	Yes
23	13	49	40	32	**49**	Yes	Yes	Yes
24	14	48	39	31	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix D-5

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 37 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 62
Medium Truck L_{dn}, dB: 53
Heavy Truck L_{dn}, dB: 44

Site Geometry:

Receiver Description: Lot 37 Backyard
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 40
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
16	6	53	44	37	**54**	Yes	Yes	Yes
17	7	52	43	36	**53**	Yes	Yes	Yes
18	8	52	43	35	**52**	Yes	Yes	Yes
19	9	51	42	35	**52**	Yes	Yes	Yes
20	10	50	41	34	**51**	Yes	Yes	Yes
21	11	50	41	33	**50**	Yes	Yes	Yes
22	12	49	40	33	**50**	Yes	Yes	Yes
23	13	49	40	32	**49**	Yes	Yes	Yes
24	14	48	39	31	**49**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix D-6

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 38 Backyard

Noise Level Data:

Year: 2035
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 52
Heavy Truck L_{dn}, dB: 43

Site Geometry:

Receiver Description: Lot 38 Backyard
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 60
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 10
Receiver Elevation[1]: 15
Base of Barrier Elevation: 10
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to... Autos?	Medium Trucks?	Heavy Trucks?
16	6	51	43	36	**52**	Yes	Yes	Yes
17	7	51	42	35	**51**	Yes	Yes	Yes
18	8	50	41	34	**51**	Yes	Yes	Yes
19	9	50	41	34	**50**	Yes	Yes	Yes
20	10	49	40	33	**50**	Yes	Yes	Yes
21	11	48	40	33	**49**	Yes	Yes	Yes
22	12	48	39	32	**49**	Yes	Yes	Yes
23	13	48	39	31	**48**	Yes	Yes	Yes
24	14	47	38	31	**48**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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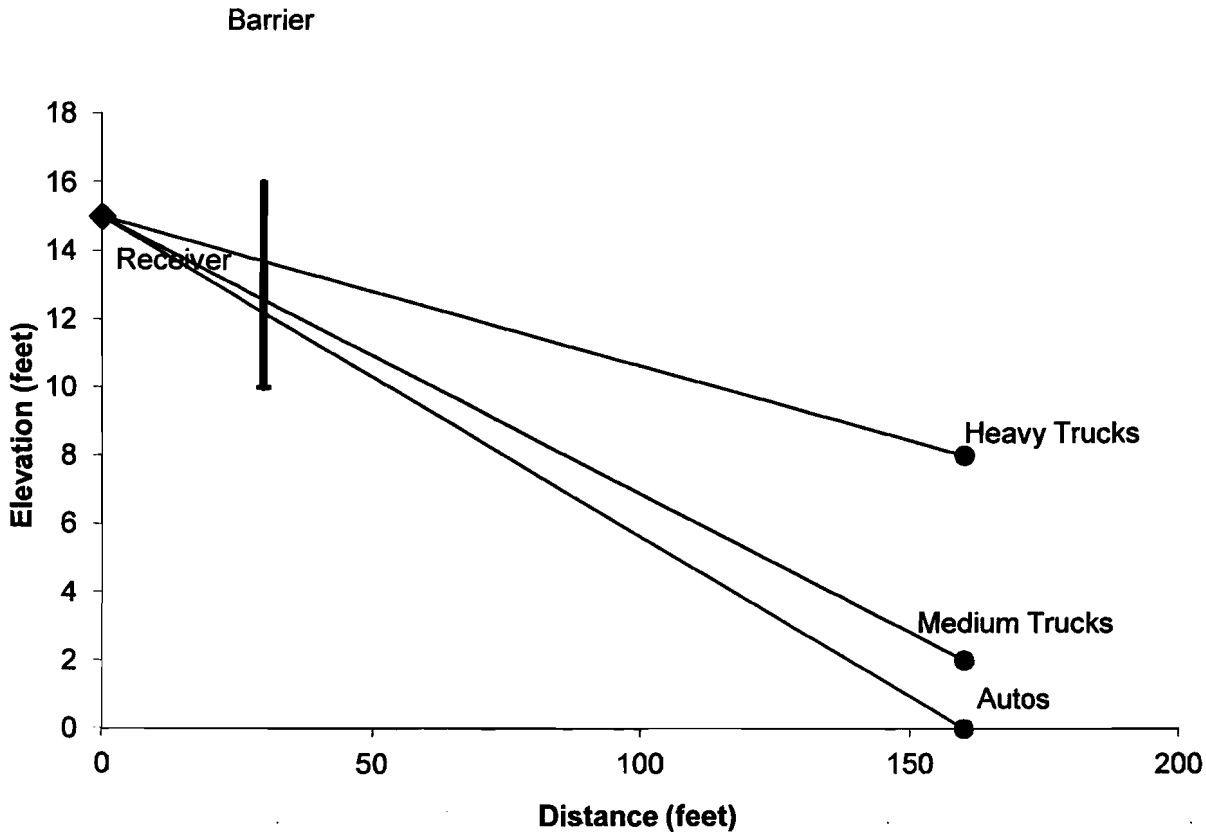
Appendix E-1

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 24 Backyard



Centerline to Barrier Distance (C_1):	130
Barrier to Receiver Distance (C_2):	30
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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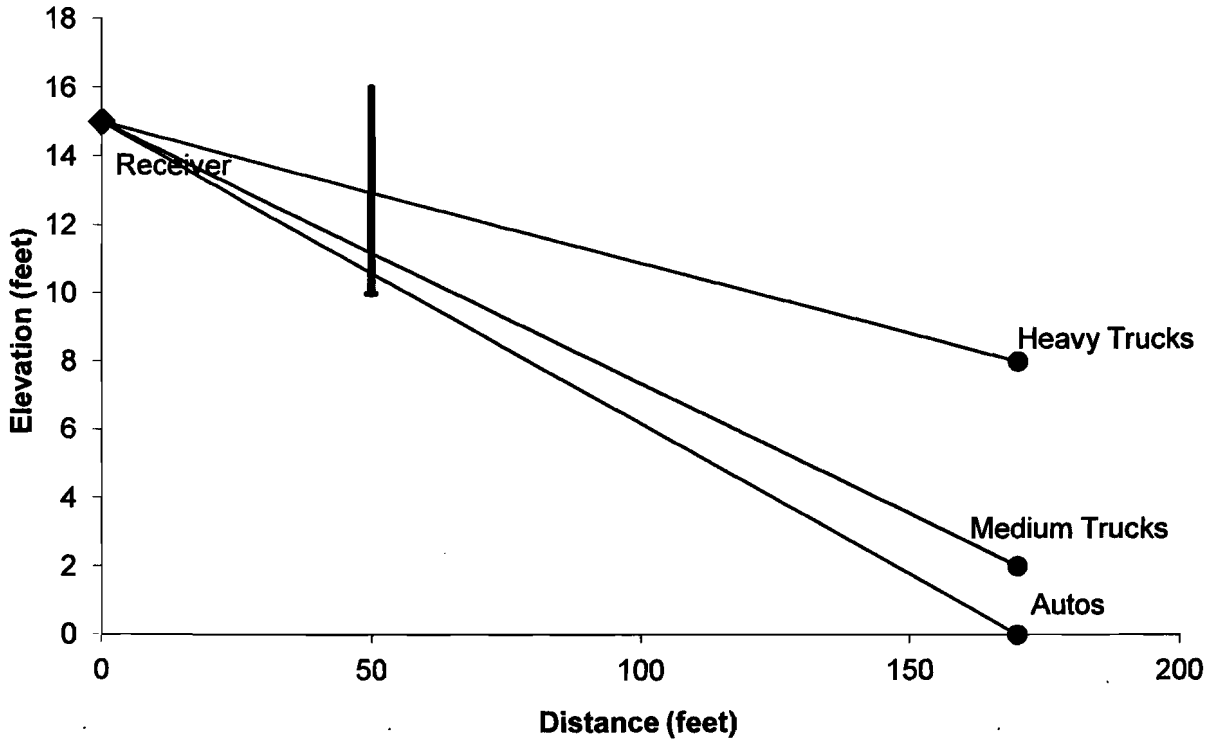
Appendix E-2

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 27 Backyard

Barrier



Centerline to Barrier Distance (C_1):	120
Barrier to Receiver Distance (C_2):	50
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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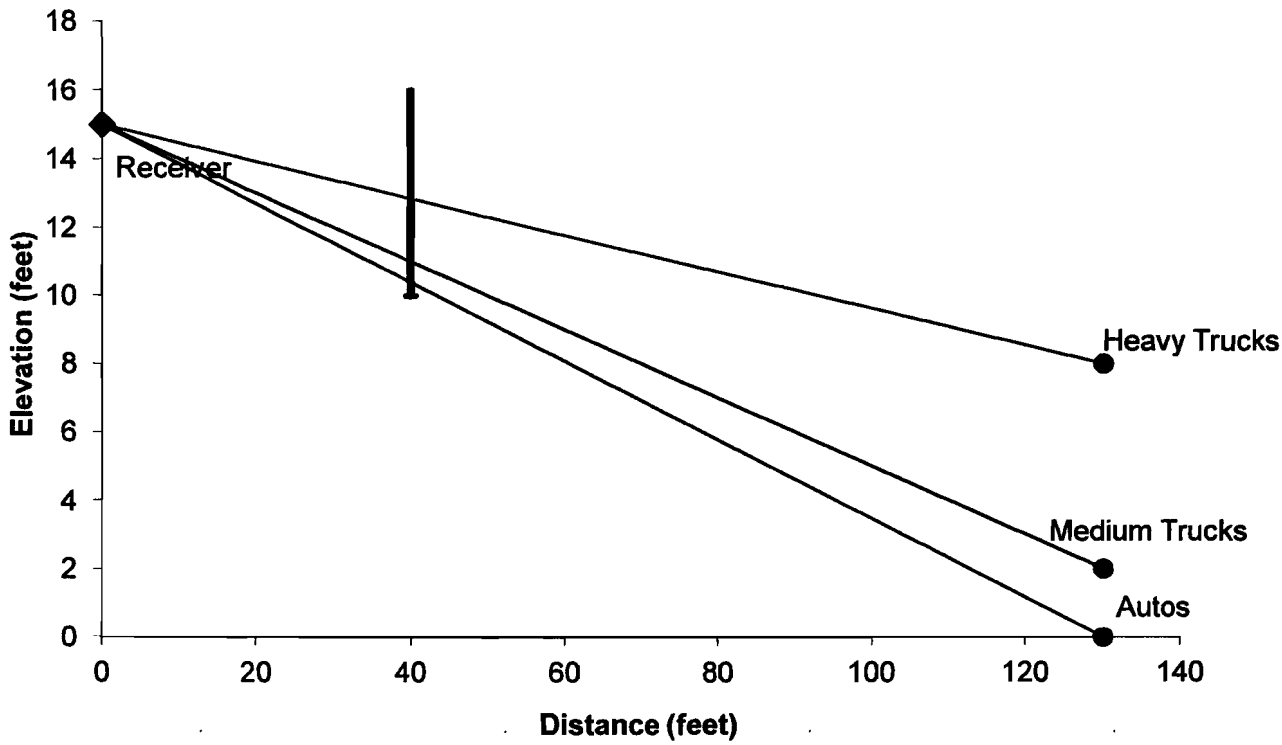
Appendix E-3

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 31 Backyard



Centerline to Barrier Distance (C_1):	90
Barrier to Receiver Distance (C_2):	40
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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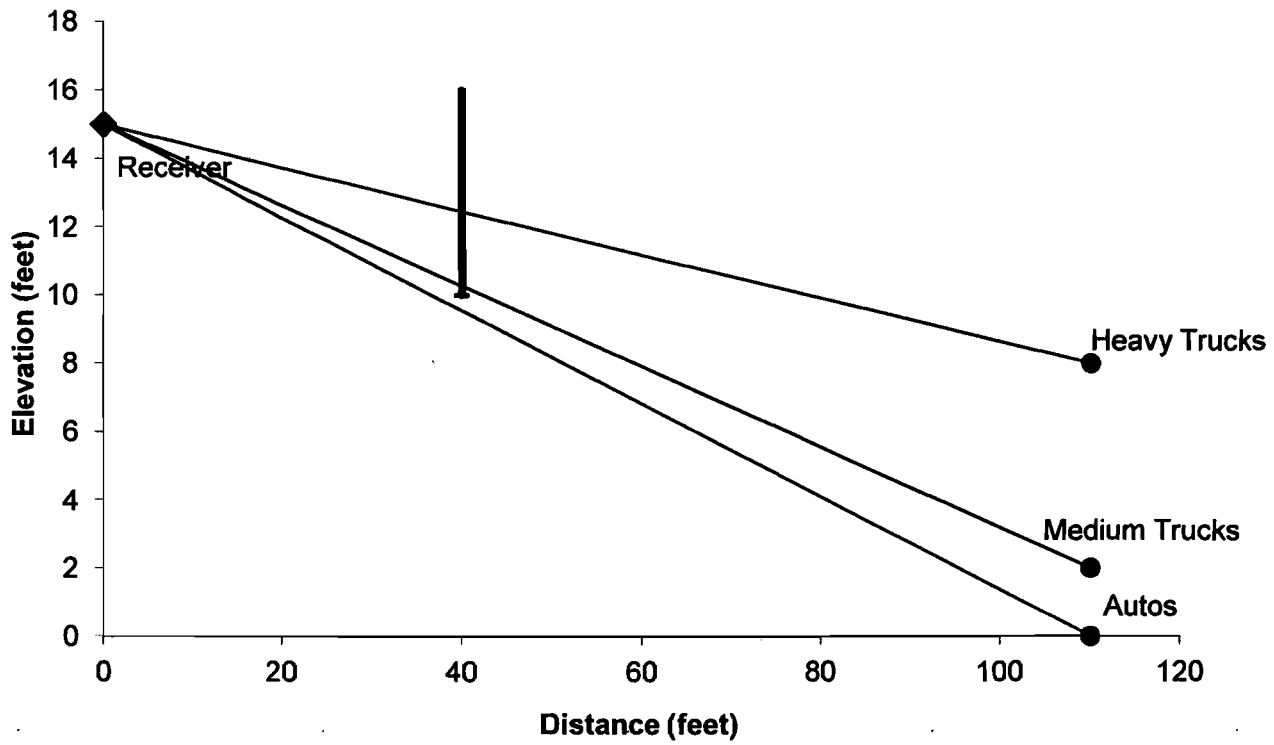
Appendix E-4

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 32 Backyard



Centerline to Barrier Distance (C_1):	70
Barrier to Receiver Distance (C_2):	40
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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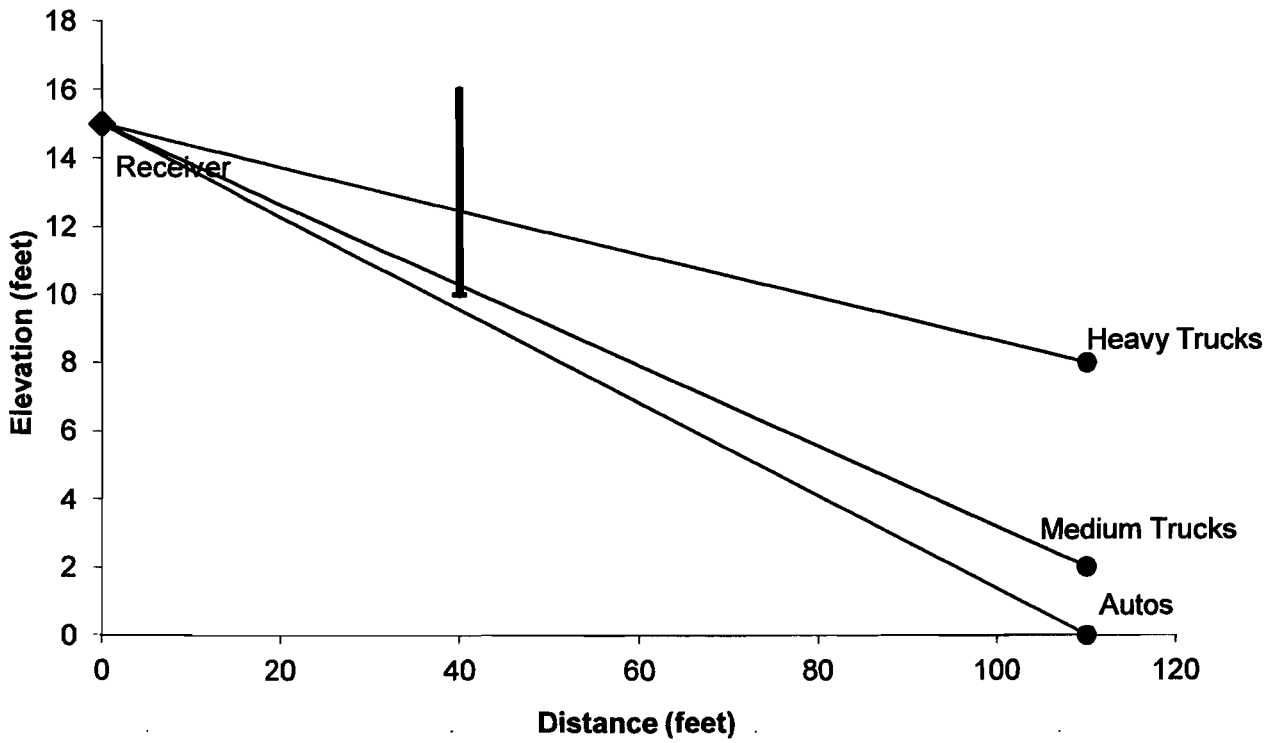
Appendix E-5

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 37 Backyard



Centerline to Barrier Distance (C_1):	70
Barrier to Receiver Distance (C_2):	40
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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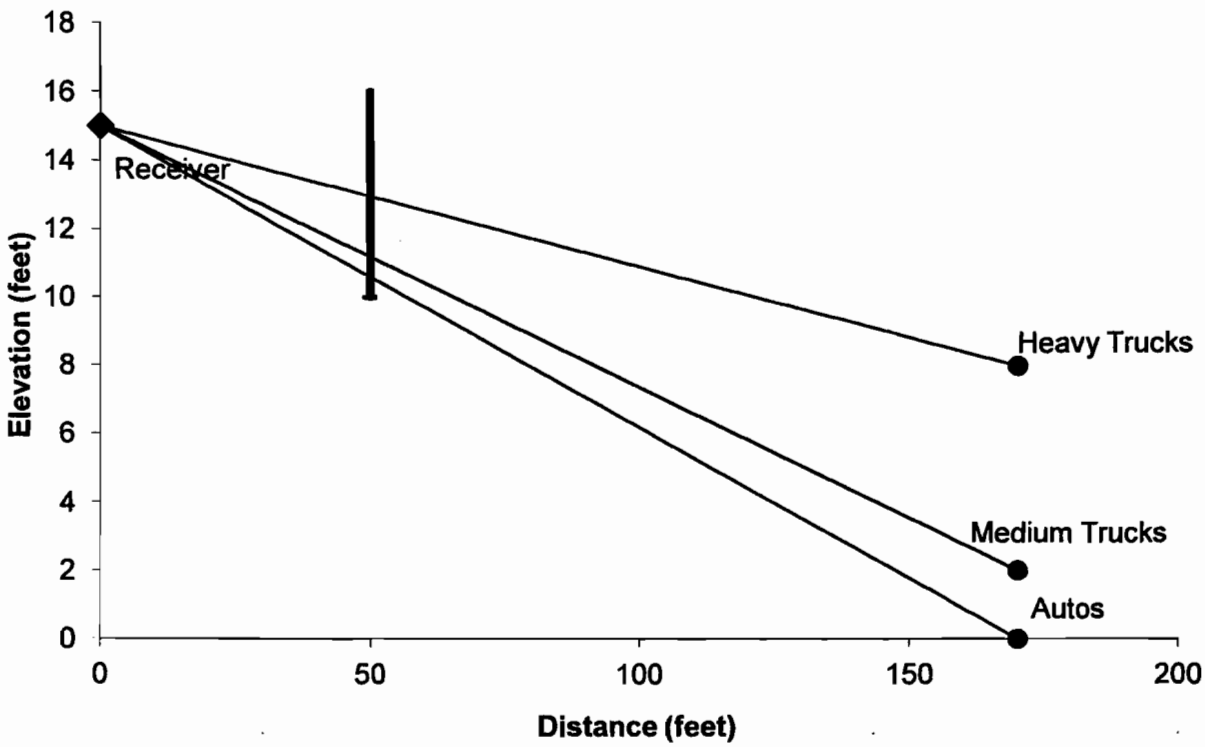
Appendix E-6

Barrier Insertion Graphic

Job Number: 2011-043
Project Name: Wilson Estates
Roadway Name: Green Valley Road
Location(s): Lot 27 Backyard

Barrier



Centerline to Barrier Distance (C_1):	120
Barrier to Receiver Distance (C_2):	50
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	10
Receiver Elevation[1]:	15
Base of Barrier Elevation:	10
Barrier Height[2]:	6

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Wilson Estates

Wildland Fire Safe Plan

Prepared for:

Ann Wilson

Prepared by:

CDS Fire Prevention Planning
William F. Draper
Registered Professional Forester
#898
4645 Meadowlark Way
Placerville, CA 95667

September 2, 2011

Approved by:

Brad Ballenger — 9/27/11

Brad Ballenger
Fire Marshal
El Dorado Hills Fire Department

Date

9/20/11

Chris Anthony, Battalion Chief
Fire Prevention
California Department of
Forestry and Fire Protection

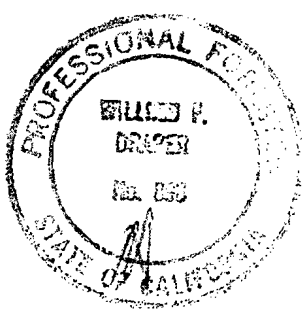
Date

Prepared by:

William F. Draper — 9/27/11

William F. Draper
RPF 898

Date



CONTENTS

I. PURPOSE AND SCOPE

Communities are increasingly concerned about wildfire safety. Drought years coupled with flammable vegetation and annual periods of severe fire weather insure the potential for periodic wildfires.

The purpose of this plan is to assess the wildfire hazards and risks of the Wilson Estates subdivision, to identify measures to reduce these hazards and risks and protect the native vegetation. There are light fuel hazards and gentle topography associated with this proposed project both on and adjacent to the project.

The possibility of large fires occurring when the subdivision is complete will be greatly reduced. However, small wildfires in the open space areas and on the lots may occur due to the increase in public uses.

Incorporation of the fire hazard reduction measures into the design and maintenance of the future parcels will reduce the size and intensity of wildfires and help prevent catastrophic fire losses. State and County regulations provide the basic guidelines and requirements for fire safe mitigation measures and defensible space around dwellings. This plan builds on these basic rules and provides additional fire hazard reduction measures customized to the topography and vegetation of the development with special emphases on the interface of homes and wildland fuels.

The scope of the Wilson Estates Wildland Fire Safe Plan recognizes the extraordinary natural features of the area and designs wildfire safety measures which are meant to compliment and become part of the community design. The Plan contains measures for providing and maintaining defensible space around future homes and open space areas. Plan implementation measures must be maintained in order to assure adequate wildfire protection.

Homeowners who live in and adjacent to the wildfire environment must take primary responsibility along with the fire services for ensuring their homes have sufficient low ignitability and surrounding fuel reduction treatment. The fire services should become a community partner providing homeowners with technical assistance as well as fire response. For this to succeed it must be shared and implemented equally by homeowners and the fire services.

II. FIRE PLAN LIMITATIONS

The Wildland Fire Safe Plan for the Wilson Estates subdivision does not guarantee that wildfire will not threaten, damage or destroy natural resources, homes or endanger residents. However, the full implementation of the mitigation measures will greatly reduce the exposure of homes to potential loss from wildfire and provide defensible space for firefighters and residents as well as protect the native vegetation. Specific items are listed for homeowner's attention to aid in home wildfire safety.

III. WILSON ESTATES WILDLAND FIRE SAFE PLAN

1. PROJECT DESCRIPTION

The Wilson Estates subdivision is located along the south side of Malcolm Dixon Road in the El Dorado Hills area. The subdivision is approximately midway between Salmon Falls Road and Green Valley Road off of Malcolm Dixon Road. New roads will be built to serve this new development. These roads running through the subdivision are proposed to be 24' wide of travel surface. A new roadway will be constructed to connect Green Valley Road and Malcolm Dixon Road. This new connector road will be a part of the realignment of Malcolm Dixon Road. Lot F represents this new road. All roads will be constructed to El Dorado County Department of Transportation (DOT) standards or as approved on the tentative map. All new lots shall be served by El Dorado Irrigation District (EID) for domestic water supply, fire sprinklers and fire hydrants. This project consisting of 28.18 acres is planning to split parcels APN: 126-070-22, 23 and 30 into 58 residential lots. Each lot will be a minimum of 8,611 square feet in size. Lots 57 and 58 at the east end of the development will share a 20' driveway and be approximately 24,800 square feet each. Residential fire sprinklers shall be required by the California Residential Building Code unless otherwise amended. Fire hydrant location shall be determined after consultation with the Fire Department and meeting the standard established. The proposed fire hydrant locations are at the intersections of each cul-de-sac and at the driveway for lots 57 and 58.

Lots A, B and C consists of approximately 7.58 acres and is open space. The open space buffers this development from adjacent properties and Green Valley Road. A masonry sound wall is being proposed for all the lots on the south side of the subdivision. This would include lots 24, 25, 31, 32, 42-48, 50-56, and 58. Non-combustible fencing may be incorporated into the masonry wall at the cul-de-sacs and the ends. A minimal fuel hazard reduction zone along the non-combustible fencing will be required. A 10' zone will be needed in lots A, B and C where they border adjacent properties or roadways if not landscaped. Annual maintenance is essential for keeping fire safe conditions viable. A Community Service District (CSD), Lighting and Landscaping District (LLD) or Zone of Benefit/Home Owners Association shall be established and be responsible for the maintenance of this zone.

The El Dorado Hills Fire Protection Department provides all fire and emergency medical services to this project. The California Department of Forestry and Fire Protection (CAL FIRE) has wildland fire responsibility in this state responsibility area (SRA).

2. PROJECT VEGETATION (FUELS)

For wildfire planning purposes the vegetation is classified as follows:

(a) ground fuels- annual grasses and downed limbs (Brush)
(b) overstory- scattered blue oaks.

The property has terrain with gentle south facing slopes. Slopes are up to 10%. The tree canopy is open grown oaks. These trees typically have limbs and canopy reaching the ground creating ladder fuels. Ladder fuels will need to be eliminated. Limbing of trees is important to reduce their susceptibility from a ground fire. Tree spacing is a critical component to attaining the required fire safe clearances. A separation of the brush fuels and trees are essential for creating the defensible space around the residence. Specific guidelines for fuel hazard reduction are addressed in the mitigation measures.

3. PROBLEM STATEMENTS

A. The brush fuels on the slopes will ignite and have a rapid rate of spread.

Fire in the grass fuels on the slopes is the most serious wildfire problem for this project.

B. Risk of fire starts will increase with development.

The greatest risk from fire ignition will be along roads and on open space lots as human use on these areas increases.

C. Provisions must be made to maintain all fuel treatments.

The wildfire protection values of fuel reduction are rapidly lost if not maintained. Continued review of potential ladder fuels to maintain a fire safe environment is very important. Annual maintenance by June 1 of each year is necessary.

D. Typical home design and siting often does not recognize adequate wildfire mitigation measures.

A review of many wildfires has conclusively shown that most home losses occur when: (1) there is inadequate clearing of flammable vegetation around a house, (2) roofs are not fire resistant, (3) homes are sited in hazardous locations, (4) firebrand ignition points and heat traps are not adequately protected and (5) there is a lack of water for suppression.

4. GOALS

A. Modify the continuity of high hazard vegetation fuels.
B. Reduce the size and intensity of wildfires.
C. Ensure defensible space is provided around all structures.
D. Design fuel treatments to minimize tree removal.
E. Ensure fuel treatment measures are maintained.
F. Identify fire safe structural features.
G. Help homeowners protect their homes from wildfire.

5. WILDFIRE MITIGATION MEASURES

Wildfire mitigation measures are designed to accomplish the Goals by providing and maintaining defensible space and treating high hazard fuel areas. Fire hazard severity is reduced through these mitigation measures. The Wildland Fire Safe Plan places emphasis on defensible space around structures.

The residential construction materials, fire hydrant location and fuel treatments will be extremely important in the development of these new lots. Residential lots will have a 10' setback from the rear property line and only a 5' setback on the sides. Open space fuel treatment zones shall be at least 10' from all rear property lines of this development along the masonry and non-combustible fencing.

All residences shall be required to have NFPA 13D fire sprinkler systems unless the law is amended.

This subdivision is in a Moderate Fire Hazard Severity Zone. Wildland-Urban Interface Fire Areas Building Standards will be required in new construction. These standards address roofing, venting, eave enclosure, windows, exterior doors, siding, and decking.

Clearance along the road and around structures is very important and necessary. Branches on remaining trees shall be pruned up 10 feet as measured on the uphill side of the tree. Brush shall be removed. Grasses shall be kept mowed to a 4 inch stubble annually by June 1. Any tree crown canopy over the driveways shall be pruned at least 15 feet up from the driveway surface.

The fuel treatment zone in the open space areas shall continue along the perimeter and be at least 10 feet wide or to the property line. This zone is in addition to the clearances required by state law. The State required Fire Safe clearances (PRC 4291) shall be implemented around all structures. Clearances may be required at the time of construction.

More restrictive standards may be applied by approving El Dorado County Authorities. Approval of this plan does not by itself guarantee approval of this project. All provisions in this plan are subject to change and additional review until the project is filed and accepted by El Dorado County, Development Services.

Mitigation Measures:

- **Driveways shall be 12 feet wide. Driveways shall comply with the DOT weight standards.**
  - **a. Responsibility- homeowner**
- **All private driveway gates shall be inset on the driveway at least 30 feet from the road. Gate opening shall be 2 feet wider than the driveway unless exceptions are granted by the local Fire Department.**
  - **a. Responsibility- homeowner**
- **All homes shall have Class A listed roof covering.**
  - **a. Responsibility- homeowner**
- **Decks that are cantilevered over the natural slope shall be enclosed unless fire resistant.**
  - **a. Responsibility- homeowner (See Appendix C for guidelines)**
- **The houses shall be constructed with exterior wall sheathing that shall be rated noncombustible.**
  - **a. Responsibility-developer**
- **Windows and glass doors on the sides of the structure shall have tempered glass and fire resistant frames.**
  - **a. Responsibility-builder**
- **Rafter tails shall be enclosed with noncombustible material on the sides of the structure.**
  - **a. Responsibility-builder**
- **Gutters and downspouts shall be noncombustible.**
  - **a. Responsibility-builder**
- **Attic and floor vents shall be covered with ¼ inch, or less, noncombustible mesh and horizontal to the ground.**
  - **a. Responsibility-builder**

- **All lots shall have a 10 foot setback from the rear property line for buildings and accessory buildings and a 30 foot setback from the center of the road or as determined by Development Services.**
  a. Responsibility- builder

6. **OTHER FIRE SAFE REQUIREMENTS**

A. New roadway turn-around shall be constructed after consulting with El Dorado Hills Fire Department and DOT for specifications.

B. If applicable, each new builder or property owner prior to construction shall be required to contact El Dorado County Planning Services/Building Department to have the residential fire sprinklers plans approved. All fire sprinkler systems shall be designed and installed by a licensed contractor.

C. All road improvements shall be built to DOT standards or as approved with the Tentative Map.

D. 10' fuel treatment zone along the perimeter of this subdivision shall be installed and annually maintained by June 1 to the Fire Safe specifications. Sidewalks and landscaping is acceptable in this zone.

E. A Notice of Restriction shall be filed with the final parcel map which stipulates that a Wildland Fire Safe Plan has been prepared and wildfire mitigation measures must be implemented.

F. The project shall meet all the Public Resource Codes 4290 as amended (the 1991 SRA Fire Safe Regulations- Article 2 Access, Article 3 Signing, Article 4 Water, Article 5 Fuels), County and Fire Department ordinances.

G. The home/property owners are responsible for any future fire safe or building code changes adopted by the State or local authority.

H. Only wood, fire rated composite deck material or noncombustible decking shall be allowed.

I. All fencing adjacent to open space shall be noncombustible.

J. The developer shall establish a Community Service District (CSD), Lighting and Landscaping District (LLD) or Zone of Benefit/HOA responsible for maintaining the open space lot.

K. All vacant lots shall be treated to the standard established by the Weed Abatement Resolution of the Fire District.

L. The El Dorado Hills Fire Department shall review the Fire Safe Plan every 5 years to determine if additional Fire Safe measures need to be implemented.

7. **OPEN SPACE GUIDELINES**

A. Remove all dead trees within 100' of all property lines.

B. **Remove all dead limbs from live trees that are within 10' of the ground.**

C. **Limb all trees within the open space lots at least 10' above the ground as measured on the uphill side of the tree.**

D. **Remove all dead limbs and trees laying on the ground within the open space lots.**

E. **Annually by June 1 cut or remove all grass and brush to a 4" stubble within 10' along the property lines adjacent to the residential lots and along streets.**

F. **Mature or multi stemmed oaks can present a serious wildfire problem if untreated. Treat the oaks as to the following specifications: (a) remove all dead limbs and stems and (b) cut off green stems at 10 feet above the ground as measured on the uphill side that arch over and are growing down towards the ground.**

V. Appendix

APPENDIX A

WILSON ESTATES
FUEL TREATMENT SPECIFICATIONS
For
OAK WOODLAND
Within The Designated Fuel Treatment Areas

1. Leave all live trees where possible.

2. Remove all dead trees.

3. Remove all brush.

4. Prune all live trees of dead branches and green branches 10 feet from the ground as measured on the uphill side of the tree, except no more than 1/3 of the live crown is removed. All slash created by pruning must be disposed of by chipping or hauling off site.

5. Annually by June 1, reduce the grass or weeds to a 4 inch stubble in the open space by mowing, chemical treatment, disking or a combination of treatments.

6. Mature, multi stem Oak trees: remove all dead limbs and stems, cut off green stems at 10 feet above the ground as measured on the uphill side that arch over and are growing down towards the ground.

APPENDIX B

WILSON ESTATES
ENCLOSED DECK GUIDELINES

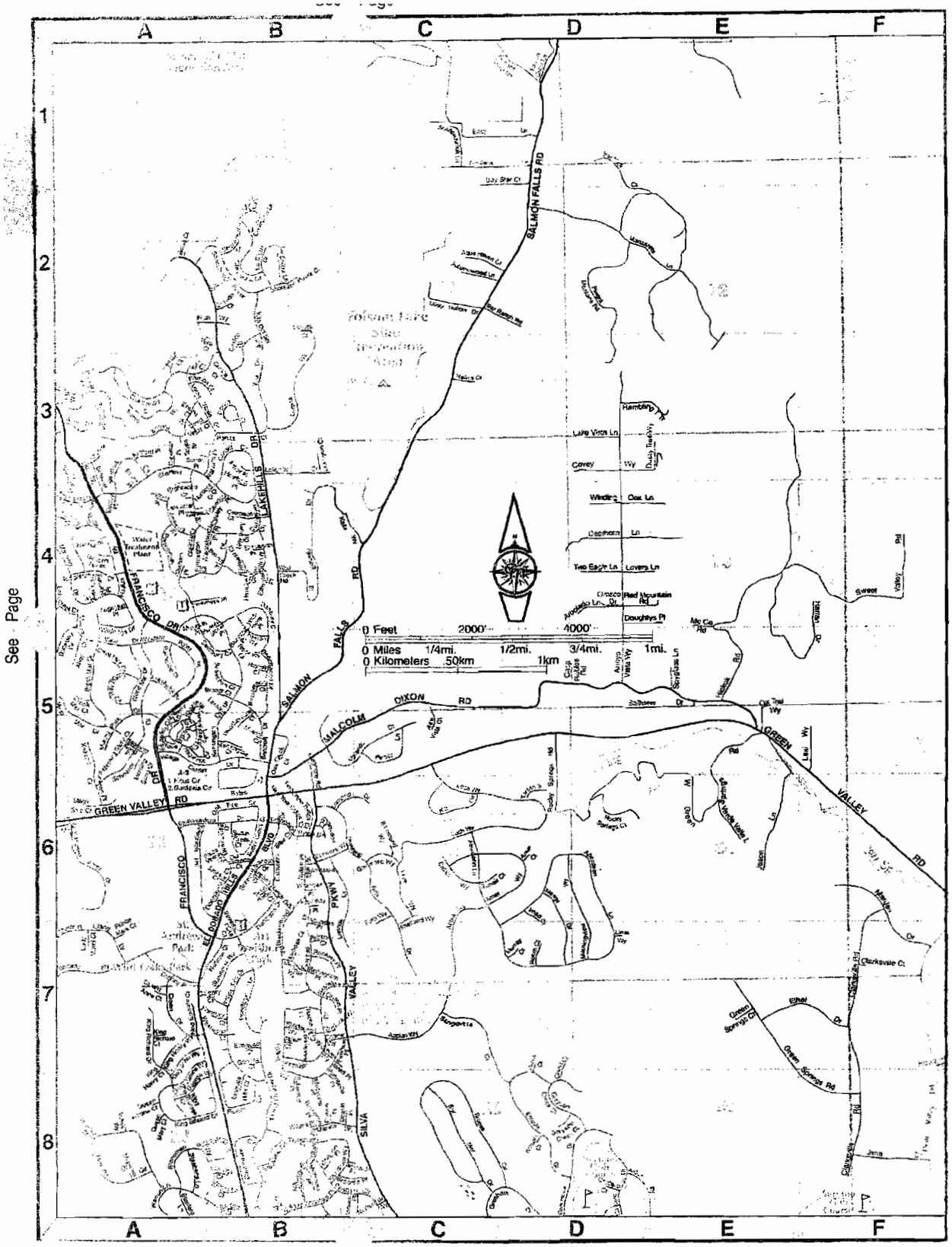
The purpose of enclosing the underside of decks that are cantilevered out over the natural slope is to help prevent heat traps and fire brands from a wildfire igniting the deck or fuels under the deck.

1. Does not apply to decks that are constructed using fire resistant materials such as concrete, steel, stucco etc.

2. Any deck shall not include combustible composite deck material.

3. This applies to decks one story or less above natural slopes.

4. Combustible material must not be stored under the deck.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
See Page
SALMON FALLS RD
LAKEHILLS DR
FRANCISCO DR
SALMON FALLS RD
MALCOLM DIXON RD
GREEN VALLEY RD
FRANCISCO BLVD
EL DORADO HILLS BLVD
PKWY
VALLEY RD
SILVA
GREEN VALLEY RD
0 Feet 2000' 4000'
0 Miles 1/4mi. 1/2mi. 3/4mi. 1mi.
0 Kilometers .50km 1km

APN 126-070- 30 & 22 & 23

Traffic Impact Analysis

Wilson Estates (WO#38)
El Dorado Hills, California

FINAL
March 3, 2011

Prepared for:

El Dorado County, California

Prepared by:

Kimley-Horn
and Associates, Inc.
11919 Foundation Place, Suite 200
Gold River, California 95670

Phone: (916) 858-5800
Fax: (916) 608-0885

Exhibit U–Attachment 16

EXECUTIVE SUMMARY

This report documents the results of a traffic impact analysis completed for Wilson Estates, a 28-acre, 60-unit single-family residential development project proposed to be located along the south side of Malcolm Dixon Road in El Dorado Hills, California (the "proposed project" or "project"). The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the El Dorado County Department of Transportation's *Traffic Impact Study Protocols and Procedures*, and the scope of work provided by a representative of the County.

The 28-acre project site is proposed to be developed with up to 60 single-family detached dwelling units. Primary access to the site will be provided via two (2) full access driveways along Malcolm Dixon Road. The proposed project is also assumed to include the construction of a new access road connecting Malcolm Dixon Road and Green Valley Road through the eastern portions of the site. The following intersections are included in this evaluation:

1. *Malcolm Dixon Road at Western Project Site Access Driveway (Project Only)*
2. *Malcolm Dixon Road at Eastern Project Site Access Driveway (Project Only)*
3. *Green Valley Road at Site Access Road (Project Only)*
4. Salmon Falls Road at Malcolm Dixon Road
5. Green Valley Road at Silva Valley Parkway/Allegheny Road
6. Green Valley Road at El Dorado Hills Boulevard/Salmon Falls Road
7. El Dorado Hills Boulevard at Francisco Drive
8. Green Valley Road at Francisco Drive
9. El Dorado Hills Boulevard at Serrano Parkway
10. El Dorado Hills Boulevard at US-50 Westbound Ramps
11. El Dorado Hills Boulevard at US-50 Eastbound Ramps

Based on the County's requirements, this LOS analysis was conducted for the above facilities for the following scenarios:

A. Existing (2010) Conditions
B. Existing (2010) plus Proposed Project Conditions
C. Existing plus Approved Projects (2015) Conditions
D. Existing plus Approved Projects (2015) plus Proposed Project Conditions

Significant findings of this study include:

- The proposed project is expected to generate 650 total daily trips, including 52 AM peak-hour trips and 66 PM peak-hour trips.
- The proposed project is consistent with the zoning density and the 2004 General Plan land use designation for the site. Furthermore, the proposed project trip generation is not projected to exceed 2025 thresholds assumed in the County's 2004 *General Plan* trip generation. Therefore, cumulative (year 2025) analyses are not required.
- As defined by the County, the addition of the proposed project to the Existing (2010) and Existing plus Approved Projects (2015) scenarios significantly worsens conditions at three (3) study intersections. However, these impacts can be mitigated to be ***less than significant***.
- The combination of the volume of eastbound left-turns onto the project site access roadway with the proportion of this movement to the approach volumes suggests the need to consider an exclusive eastbound left-turn lane along Green Valley Road. Considering the high speed, rural nature of Green Valley Road through the project area, an exclusive eastbound left-turn lane should be considered as a means by which to enhance safety at the project site access roadway intersection. Said left-turn lane should be designed with appropriate storage and deceleration distances consistent with the County's applicable design standards.

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INTRODUCTION

This report documents the results of a traffic impact analysis completed for Wilson Estates, a 28-acre, 60-unit single-family residential development project proposed to be located along the south side of Malcolm Dixon Road in El Dorado Hills, California (the "proposed project" or "project"). The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the El Dorado County Department of Transportation's *Traffic Impact Study Protocols and Procedures*, and the scope of work provided by a representative of the County[1].

The remaining sections of this report document the proposed project, analysis methodologies, impacts and mitigation, and general study conclusions.

PROJECT DESCRIPTION

The 28-acre project site is proposed to be developed with up to 60 single-family detached dwelling units. Primary access to the site will be provided via two (2) full access driveways along Malcolm Dixon Road. The proposed project is also assumed to include (either as part of the project or to have been previously constructed by others) the construction of a new access road connecting Malcolm Dixon Road and Green Valley Road through the eastern portions of the site.

The project location is shown in Figure 1, and the proposed project site plan is shown in Figure 2. The following intersections are included in this evaluation:

1. *Malcolm Dixon Road at Western Project Site Access Driveway (Project Only)*
2. *Malcolm Dixon Road at Eastern Project Site Access Driveway (Project Only)*
3. *Green Valley Road at Site Access Road (Project Only)*
4. Salmon Falls Road at Malcolm Dixon Road
5. Green Valley Road at Silva Valley Parkway/Allegheny Road
6. Green Valley Road at El Dorado Hills Boulevard/Salmon Falls Road
7. El Dorado Hills Boulevard at Francisco Drive
8. Green Valley Road at Francisco Drive
9. El Dorado Hills Boulevard at Serrano Parkway
10. El Dorado Hills Boulevard at US-50 Westbound Ramps
11. El Dorado Hills Boulevard at US-50 Eastbound Ramps

Figure 3 illustrates the study facilities, existing traffic control, and existing lane configurations.

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the project.

US Route 50 (US-50) is an east-west freeway located south of the project site. Generally, US-50 serves all of El Dorado County's major population centers and provides connections to Sacramento County to the west and the State of Nevada to the east. Primary access to the project site from US-50 is provided at the El Dorado Hills Boulevard/Latrobe Road interchange (supplemental access via Silva Valley Parkway interchange in 2015). Within the general project area, US-50 currently serves approximately 95,000 vehicles per day[2] (vpd) with three travel lanes in each direction, west of El Dorado Hills Boulevard/Latrobe Road.

[1] Memorandum from Abhi Parikh, Dowling Associates, Inc., to Eileen Crawford, El Dorado County DOT, November 9, 2010.
[2] Caltrans Traffic and Vehicle Data Systems Unit, http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2009all/2009TrafficVolumes.htm

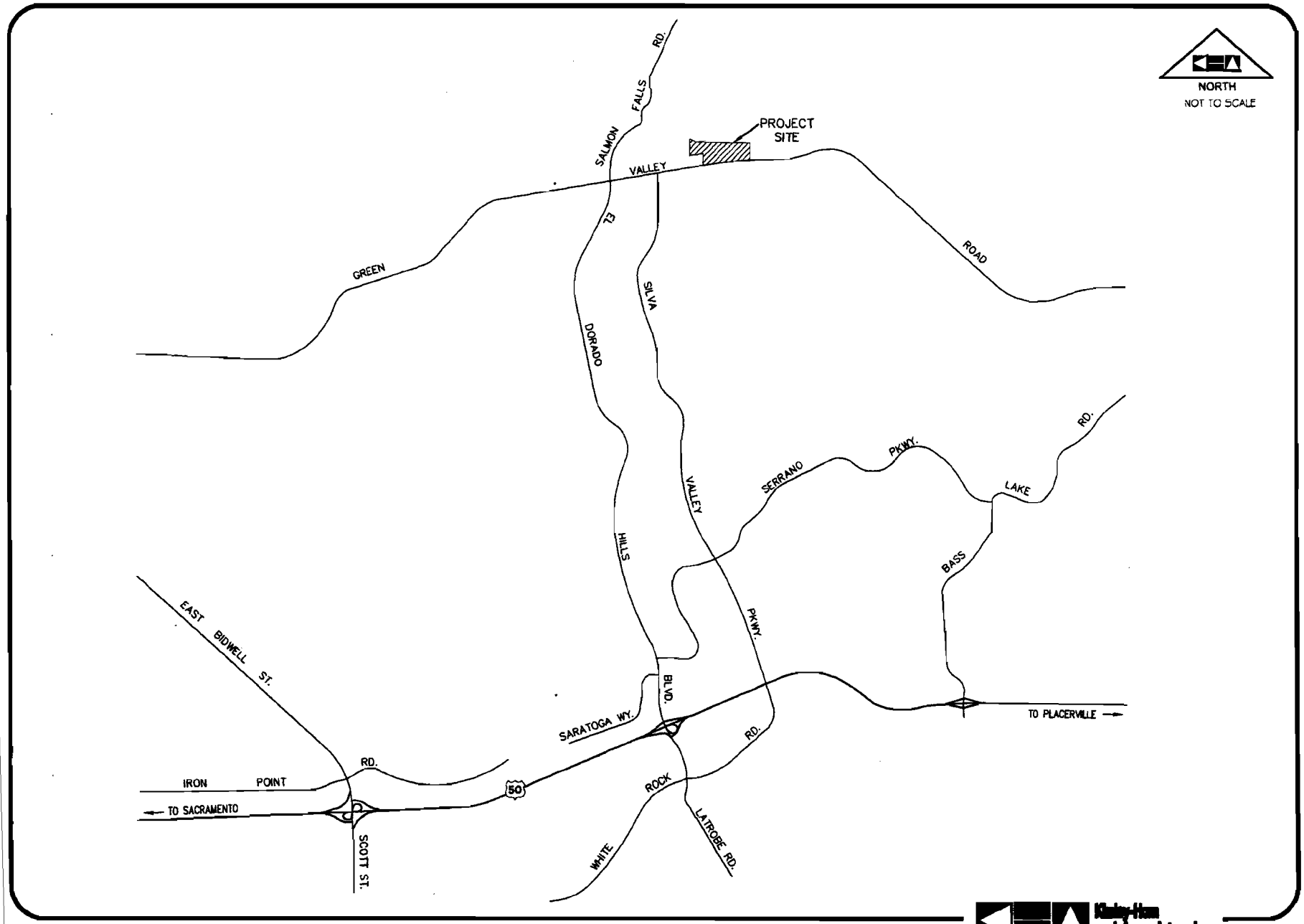
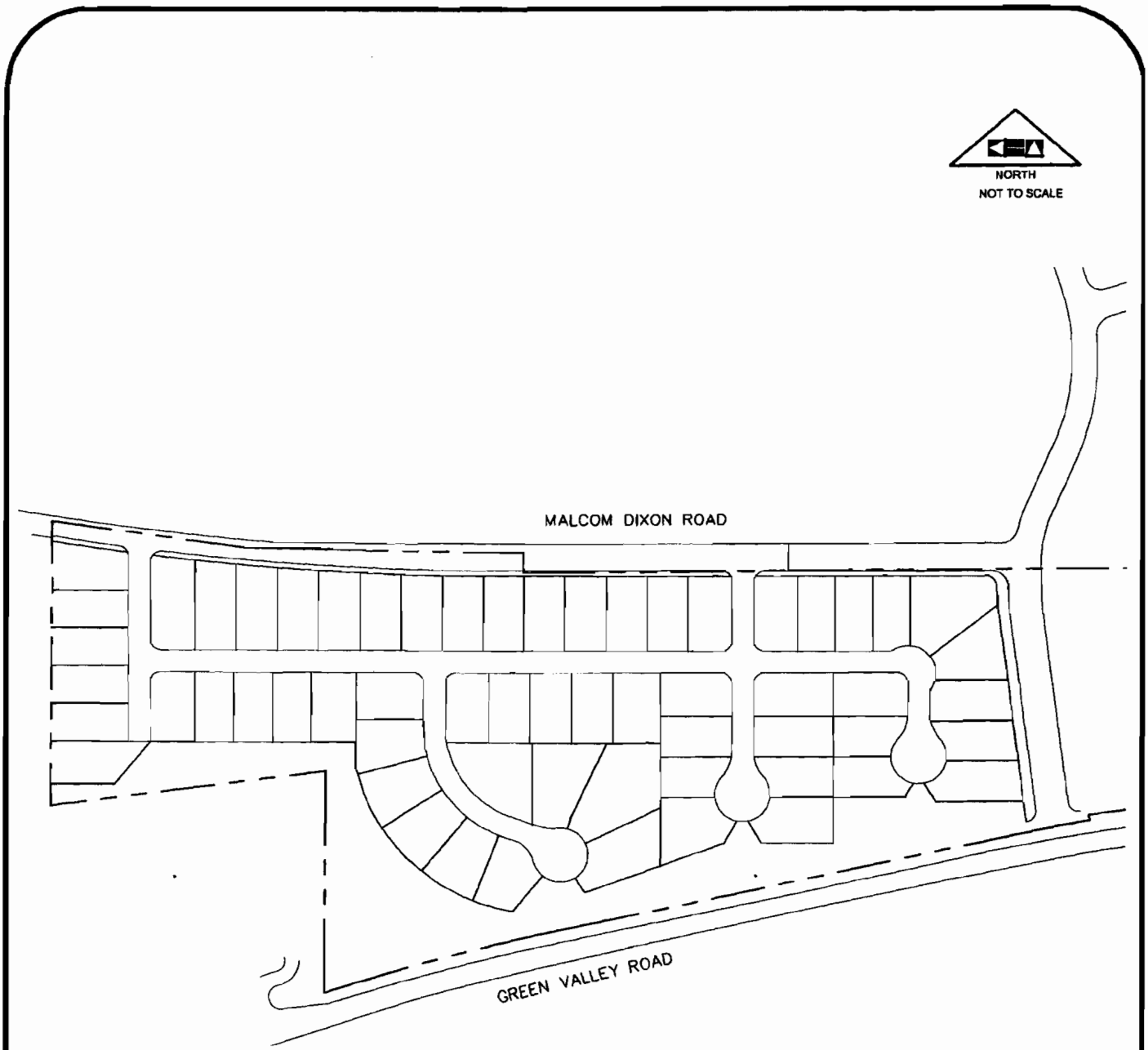


FIGURE 1

PROJECT VICINITY MAP

WILSON ESTATES
EL DORADO HILLS, CA



SOURCE: CTA ENGINEERING & SURVEYING, OCTOBER 2010

Kimley-Horn and Associates, Inc.

FIGURE 2

PROPOSED PROJECT SITE PLAN

WILSON ESTATES
EL DORADO HILLS, CA

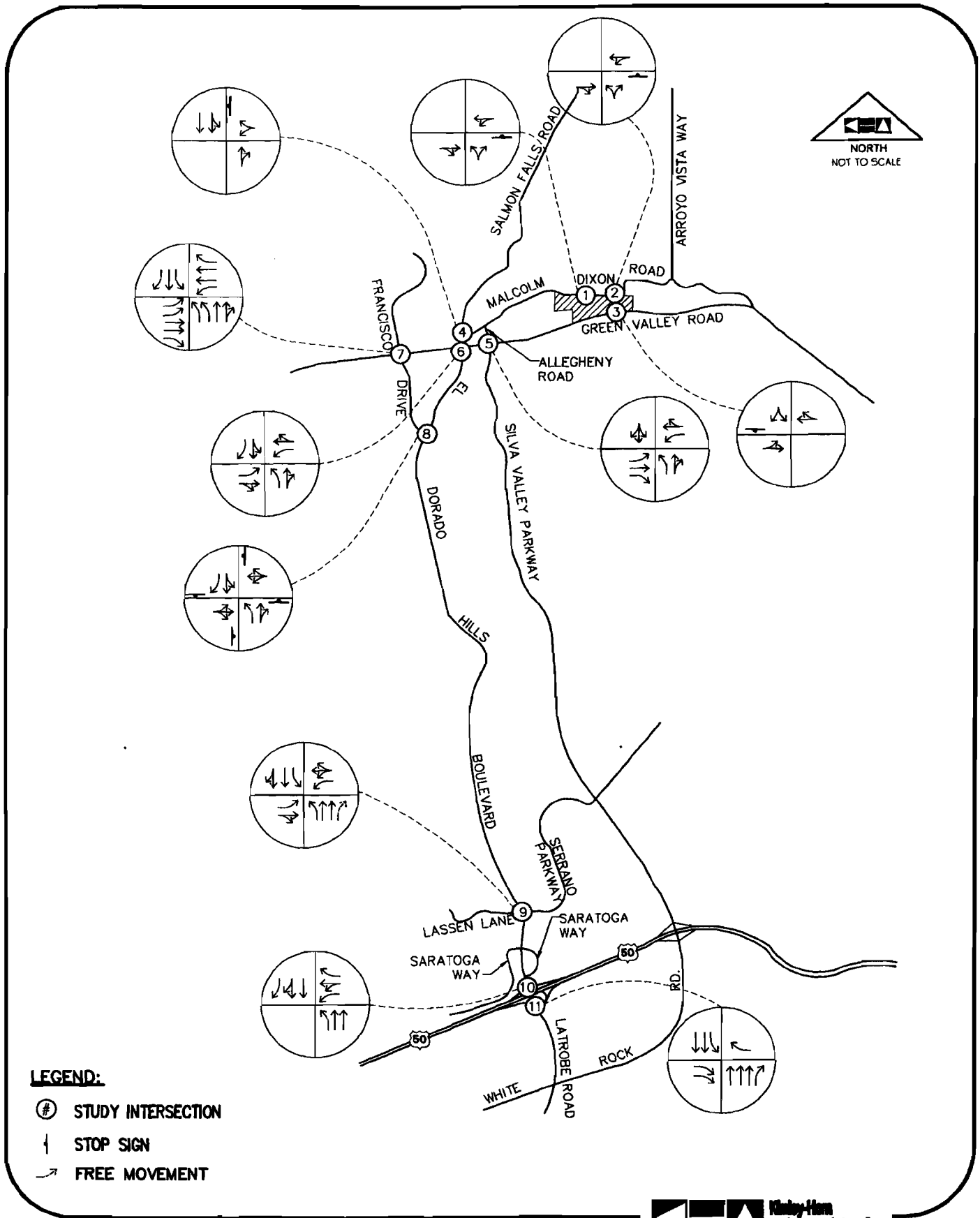


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FIGURE 3

STUDY INTERSECTIONS, TRAFFIC CONTROL AND LANE GEOMETRIES

WILSON ESTATES
EL DORADO HILLS, CA

Green Valley Road is an east-west arterial roadway that connects Placerville with western portions of El Dorado County and eastern Sacramento County, south of Folsom Lake. Through the project area, Green Valley Road provides one travel lane in each direction and serves approximately 13,000 vehicles per day[3].

Salmon Falls Road is a north-south arterial roadway that serves as a primary connection for areas located along the eastern border of Folsom Lake, and provides a connect to SR-49 to the north. Through the project area, this roadway serves approximately 7,300 vpd[3] with one travel lane in each direction. South of Green Valley Road, Salmon Falls Road becomes El Dorado Hills Boulevard. **El Dorado Hills Boulevard** provides a primary connection to US-50 for western El Dorado County. Just north of US-50 this roadway carries approximately 31,000 vpd[3] with two travel lanes in each direction.

Silva Valley Parkway is a north-south collector roadway that connects Green Valley Road with Serrano Parkway and eventually US-50. Silva Valley Parkway provides one travel lane in each direction and serves approximately 6,200 vpd[3] just south of Green Valley Road. A new US-50 interchange with Silva Valley parkway is assumed to be in place for Existing plus Approved Projects (2015) Conditions.

Malcolm Dixon Road is an east-west local roadway that connects Salmon Falls Road with Green Valley Road. Malcolm Dixon Road is a low-speed, two-lane roadway that primarily provides local residential access.

Allegheny Road is a north-south, minor roadway that provides a short, direct connection between Malcolm Dixon Road and Green Valley Road. Allegheny Road becomes Silva Valley Parkway south of Green Valley Road.

ASSESSMENT OF PROPOSED PROJECT

Proposed Project Trip Generation

The number of trips anticipated to be generated by the proposed project were derived using data included in *Trip Generation, 8th Edition,* published by the Institute of Transportation Engineers (ITE). The anticipated trip generation for this project, is shown in Table 1.

Table 1 – Proposed Project Trip Generation

Land Use (ITE Code)	Size (# units)	Daily Trips	AM Peak Hour					PM Peak Hour				
			Total Trips	IN %	IN Trips	OUT %	OUT Trips	Total Trips	IN %	IN Trips	OUT %	OUT Trips
Single-Family Detached Housing (210)	60	650	52	25%	13	75%	39	66	63%	42	37%	25
Net New External Trips		650	52		13		39	66		42		25

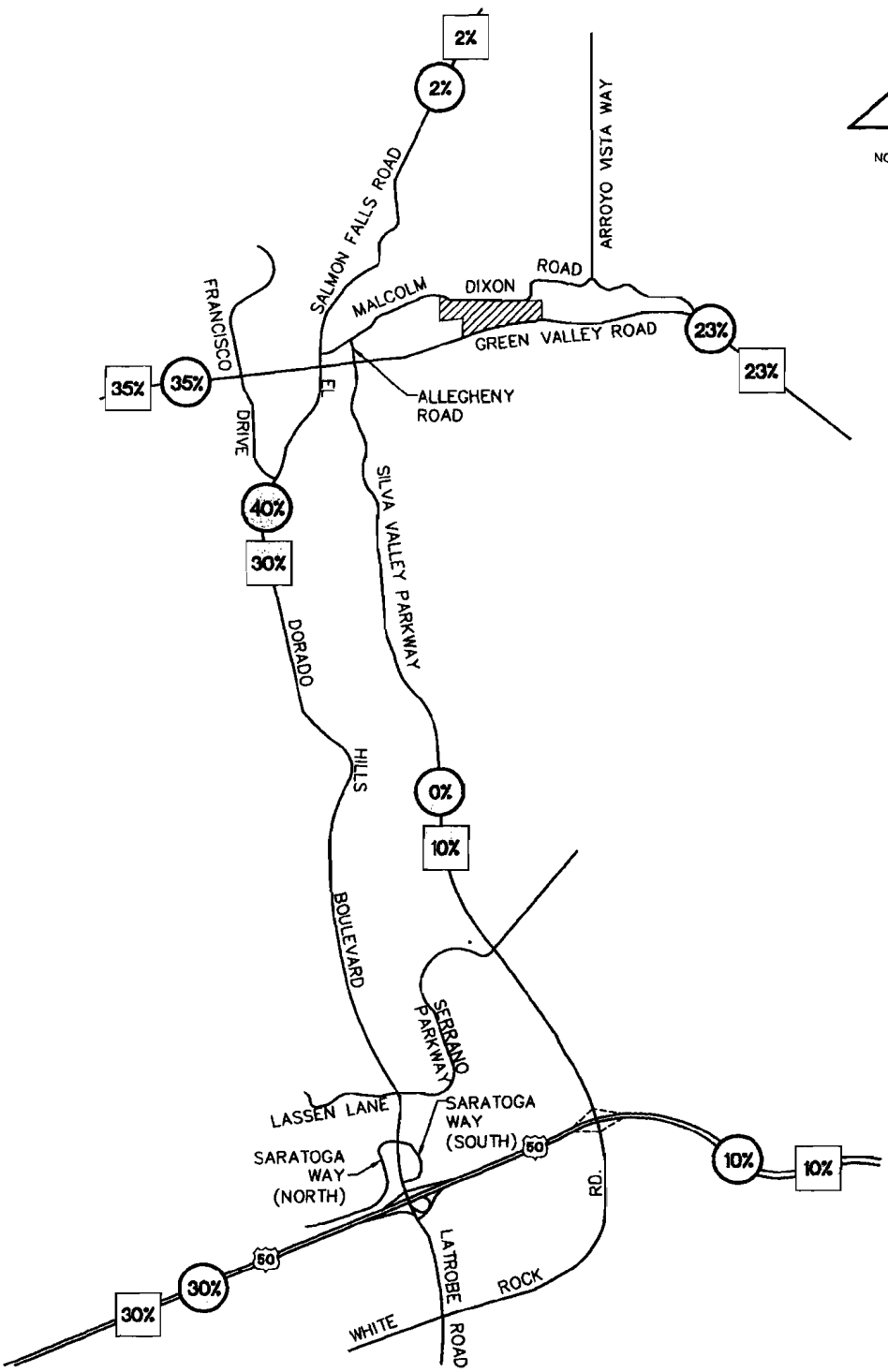
Source: *Trip Generation, 8th Edition*, ITE.

As shown in Table 1, the proposed project is estimated to generate 650 total new daily trips, with 52 new trips occurring during the AM peak-hour, and 66 new trips occurring during the PM peak-hour.

Proposed Project Trip Distribution

The distribution of project traffic was based on information approved and provided by a representative of the County[1]. The project trip distribution percentages are illustrated in Figure 4. The resulting AM and PM peak-hour traffic volumes attributed to the proposed project are illustrated in Figure 5 and Figure 6.

[3] El Dorado County Department of Transportation, 2009.



LEGEND:

XX% EXISTING (2010) DISTRIBUTION PERCENTAGE

XX% EXISTING PLUS APPROVED PROJECTS (2015) DISTRIBUTION PERCENTAGE

Kimley-Horn and Associates, Inc.

FIGURE 4

PROPOSED PROJECT TRIP DISTRIBUTION

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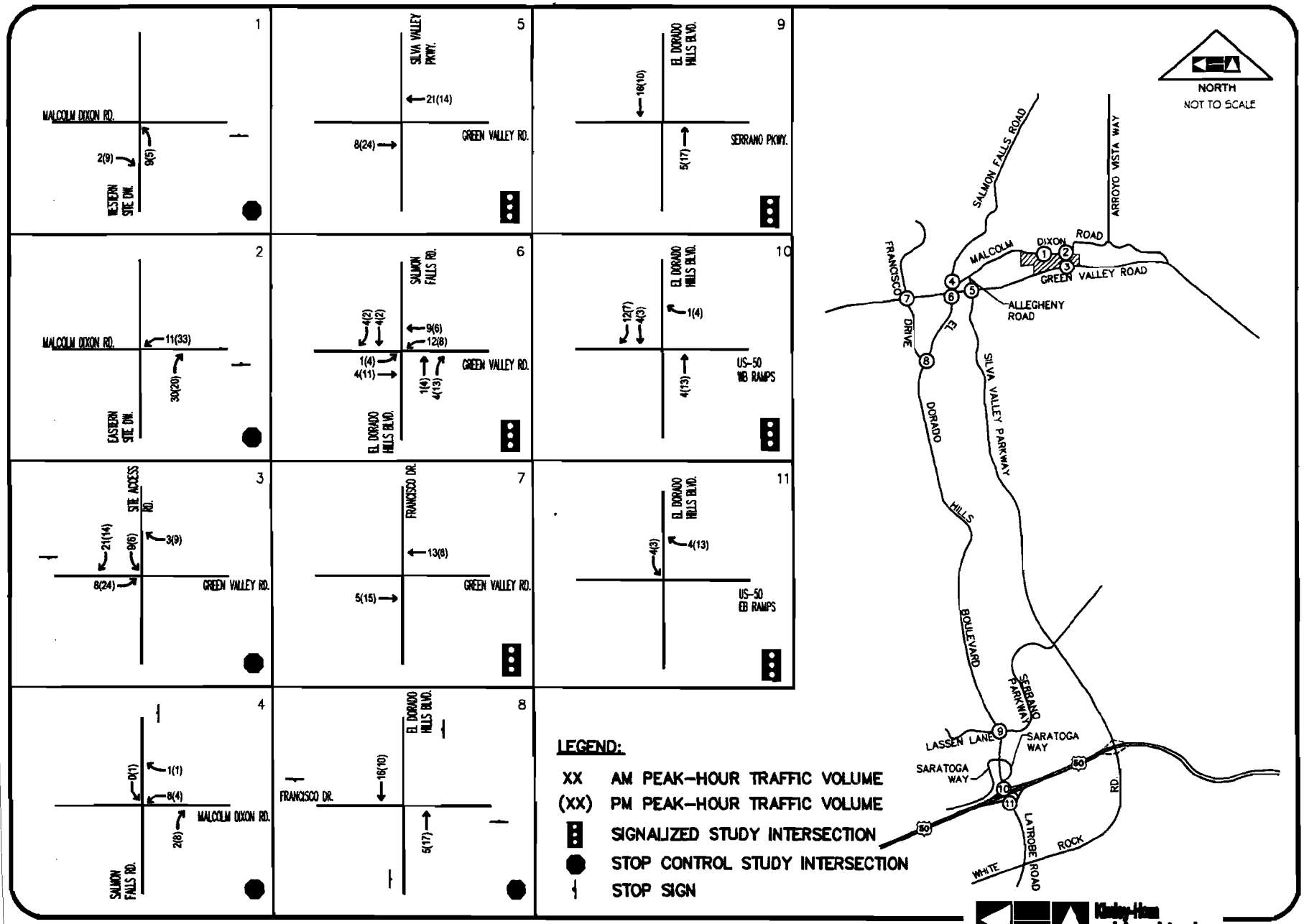


FIGURE 5

EXISTING (2010) PROPOSED PROJECT TRIP ASSIGNMENT

WILSON ESTATES
EL DORADO HILLS, CA

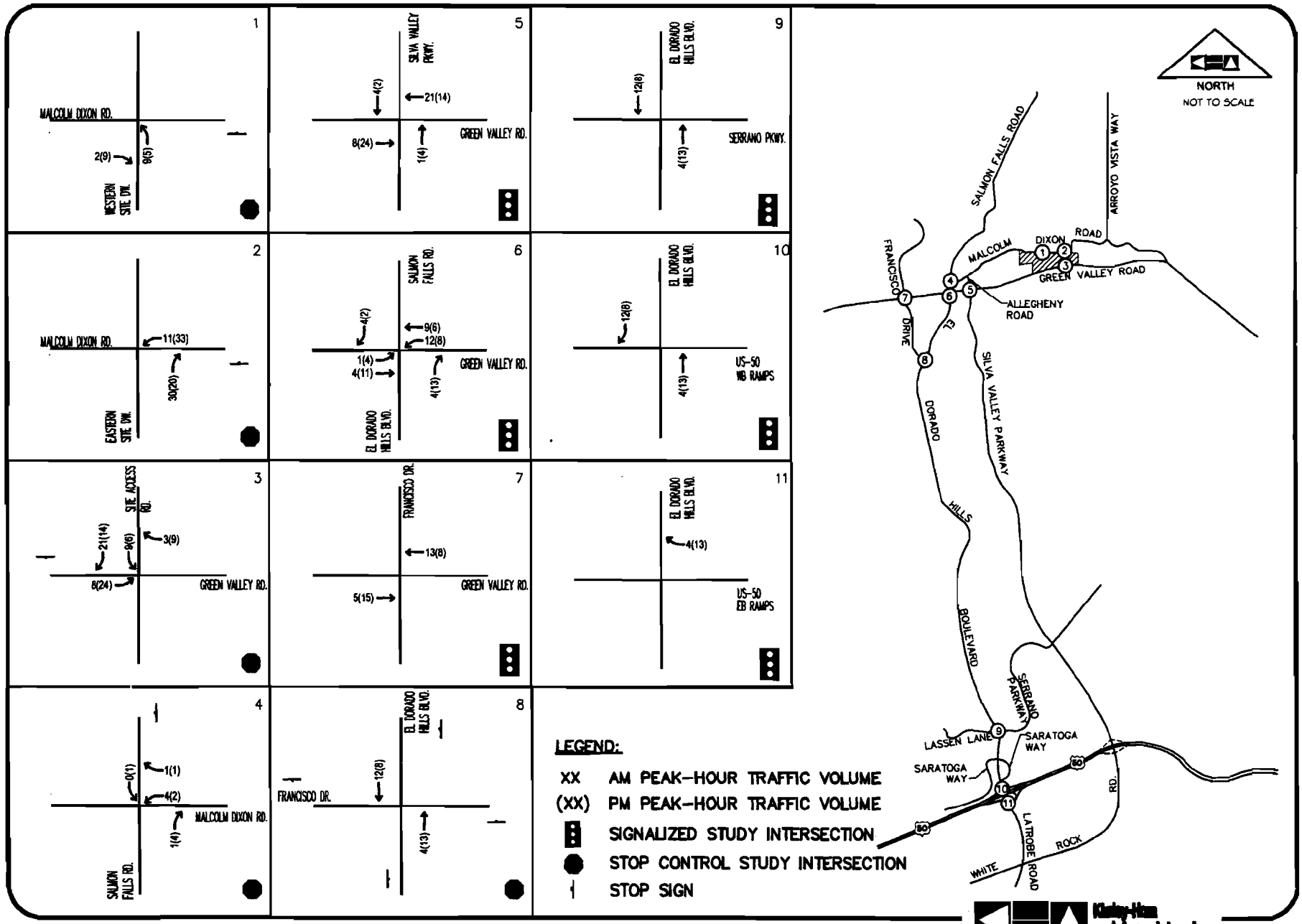


FIGURE 6

EXISTING PLUS APPROVED PROJECTS (2015) PROJECT TRIP ASSIGNMENT

WILSON ESTATES
EL DORADO HILLS, CA

TRAFFIC IMPACT ANALYSIS METHODOLOGY

Analysis of transportation facility significant environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual, 2000* (HCM) and appropriate traffic analysis software

The HCM includes procedures for analyzing two-way stop controlled (TWSC), all-way stop controlled (AWSC), and signalized intersections. The TWSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. Table 2 presents intersection LOS definitions as defined in the HCM.

Table 2 – Intersection Level of Service Criteria

[illegible]	[illegible]	[illegible]
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 2000
* Applied to the worst lane/lane group(s) for TWSC

Consistency with General Plan Land Use Designation

According to the County's *Protocols*:

> "[A] Each traffic impact study must provide a review of a proposed project's consistency with the land use designations and zoning densities of the 2004 County General Plan to determine if the project is consistent with such designation(s) as applicable within the proposed project area...[B] If a proposed project is of a magnitude that is clearly within the amount of development which was anticipated in the traffic study conducted for the General Plan, then the General Plan's traffic analysis will serve as the basis for the cumulative traffic analysis of the project."

The proposed project (2.14 dwelling units/acre) is consistent with the *2004 General Plan* land use designation and zoning density for the site (High Density Residential (1-5 DU/acre))[4]. Therefore, the proposed project does not satisfy the first criterion [A] for determining if a new cumulative 2025 analysis is required in addition to the analysis already completed for the County's *General Plan*.

Regarding the second criterion [B], the proposed project is located within Traffic Analysis Zone (TAZ) 335. According to information provided by a representative of the County[1], "Trip generation of the proposed project does not exceed the growth anticipated in TAZ 335. Therefore no cumulative analysis is required."

[4] *2004 General Plan Land Use Diagram*, El Dorado County Planning Department.

Based on the above criteria and the County's requirements, this LOS analysis was conducted for the study facilities for the following scenarios:

A. Existing (2010) Conditions
B. Existing (2010) plus Proposed Project Conditions
C. Existing plus Approved Projects (2015) Conditions
D. Existing plus Approved Projects (2015) plus Proposed Project Conditions

The following is a discussion of the analyses for these scenarios:

EXISTING (2010) CONDITIONS

Recent peak-hour traffic volumes for the majority of the study intersections were obtained from a representative of the County[5]. For these intersections, existing counts that were collected in 2005-2008 were increased to represent current year (2010) conditions using a 2 percent annual growth rate to conservatively approximate existing conditions[6]. One (1) new weekday AM and PM peak period intersection turning movement traffic count was conducted in November 2010, for the El Dorado Hills Boulevard intersection with Francisco Drive. This count was conducted between the hours of 6:30 a.m. and 9:30 a.m. and 3:30 p.m. and 6:30 p.m. It is worth noting that a peak-hour factor (PHF) of 0.92 and a two percent heavy vehicle factor were utilized for this, and all subsequent analysis scenarios.

Existing (2010) peak-hour turn movement volumes are presented in Figure 7, and the traffic count data sheets are provided in Appendix A. Table 3 presents the peak-hour intersection operating conditions for this analysis scenario.

Table 3 – Existing (2010) Intersection Levels of Service

ID	Intersection	Traffic control	AM Peak Hour Delay (seconds)*	LOS	PM Peak Hour Delay (seconds)*	LOS
1	Malcolm Dixon Rd @ Western Project Site Access Dwy	*Plus Project Analysis Scenarios Only*				
2	Malcolm Dixon Rd @ Eastern Project Site Access Dwy					
3	Green Valley Rd @ Site Access Rd					
4	Salmon Falls Rd @ Malcolm Dixon Rd	TWSC*	11.5 (WB)	B	13.2 (WB)	B
5	Green Valley Rd @ Silva Valley Pkwy/Allegheny Rd	Signal	15.8	B	16.2	B
6	Green Valley Rd @ El Dorado Hills Blvd/Salmon Falls Rd	Signal	**83.2**	F	46.9	D
7	Green Valley Rd @ Francisco Dr	Signal	38.1	D	28.4	C
8	El Dorado Hills Blvd @ Francisco Dr	AWSC	**92.7**	F	49.9	E
9	El Dorado Hills Blvd @ Serrano Pkwy	Signal	16.4	B	35.7	D
10	El Dorado Hills Blvd @ US-50 Westbound Ramps	Signal	**186.1**	F	**89.9**	F
11	Latrobe Rd @ US-50 Eastbound Ramps	Signal	16.6	B	17.6	B

* Control delay for worst minor approach (worst minor movement) for TWSC. **Bold = Substandard per County**

As indicated in Table 3, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours. Analysis worksheets for this scenario are provided in Appendix B.

[5] Dowling Associates, Inc., ftp://ftp.dowlinginc.com.
[6] Methodology per email from Abhi Parikh, Dowling Associates, Inc., November 11, 2010.

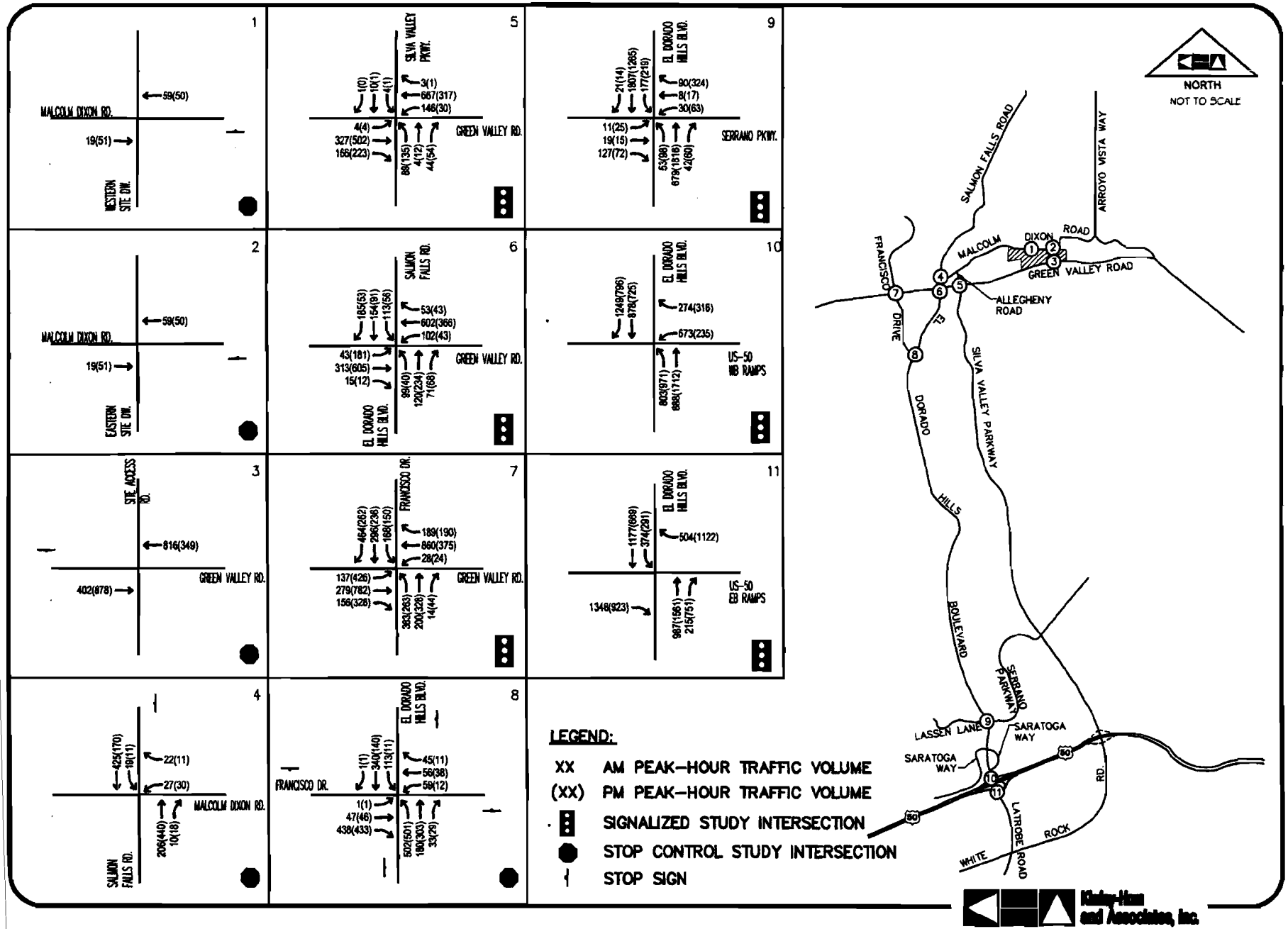


FIGURE 7

EXISTING (2010) PEAK-HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

EXISTING (2010) PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the existing traffic volumes and levels of service were determined at the study intersections. Table 4 provides a summary of the intersection analysis and Figure 8 provides the AM and PM peak-hour traffic volumes at the study intersections for this analysis scenario.

Table 4 – Existing (2010) and Existing (2010) Plus Proposed Project Intersection Levels of Service

#	Intersection	Analysis Scenario[+]	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay (seconds)[*]	LOS	Delay (seconds)[*]	LOS
1	Malcolm Dixon Rd @ Western Project Site Access Dwy	Exist.	*Plus Project Analysis Scenarios Only*				
		Exist.+PP	TWSC	8.7 (NB)	A	8.7 (NB)	A
2	Malcolm Dixon Rd @ Eastern Project Site Access Dwy	Exist.	*Plus Project Analysis Scenarios Only*				
		Exist.+PP	TWSC	8.4 (NB)	A	8.5 (NB)	A
3	Green Valley Rd @ Site Access Rd	Exist.	*Plus Project Analysis Scenarios Only*				
		Exist.+PP	TWSC	22.6 (SB)	C	18.8 (SB)	C
4	Salmon Falls Rd @ Malcolm Dixon Rd	Exist.	TWSC	11.5 (WB)	B	13.2 (WB)	B
		Exist.+PP		11.9 (WB)	B	13.3 (WB)	B
5	Green Valley Rd @ Silva Valley Pkwy/Allegheny Rd	Exist.	Signal	15.8	B	16.2	B
		Exist.+PP		15.9	B	16.1	B
6	Green Valley Rd @ El Dorado Hills Blvd/Salmon Falls Rd	Exist.	Signal	89.2	F	46.9	D
		Exist.+PP		91.2	F	51.6	D
7	Green Valley Rd @ Francisco Dr	Exist.	Signal	38.1	D	28.4	C
		Exist.+PP		38.4	D	28.5	C
8	El Dorado Hills Blvd @ Francisco Dr	Exist.	AWSC	92.7	F	49.9	E
		Exist.+PP		95.5	F	50.9	F
9	El Dorado Hills Blvd @ Serrano Pkwy	Exist.	Signal	16.4	B	35.7	D
		Exist.+PP		16.5	B	36.0	D
10	El Dorado Hills Blvd @ US-50 Westbound Ramps	Exist.	Signal	186.1	F	89.9	F
		Exist.+PP		188.5	F	91.8	F
11	Latrobe Rd @ US-50 Eastbound Ramps	Exist.	Signal	16.6	B	17.6	B
		Exist.+PP		16.6	B	17.6	B

[+] Exist. = Existing (2010), Exist. + PP = Existing (2010) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement) for TWSC. **Bold = Substandard per County**

As indicated in Table 4, the study intersections operate from LOS A to LOS F with the addition of project traffic during the AM and PM peak-hours. The analysis worksheets for this scenario are provided in Appendix C.

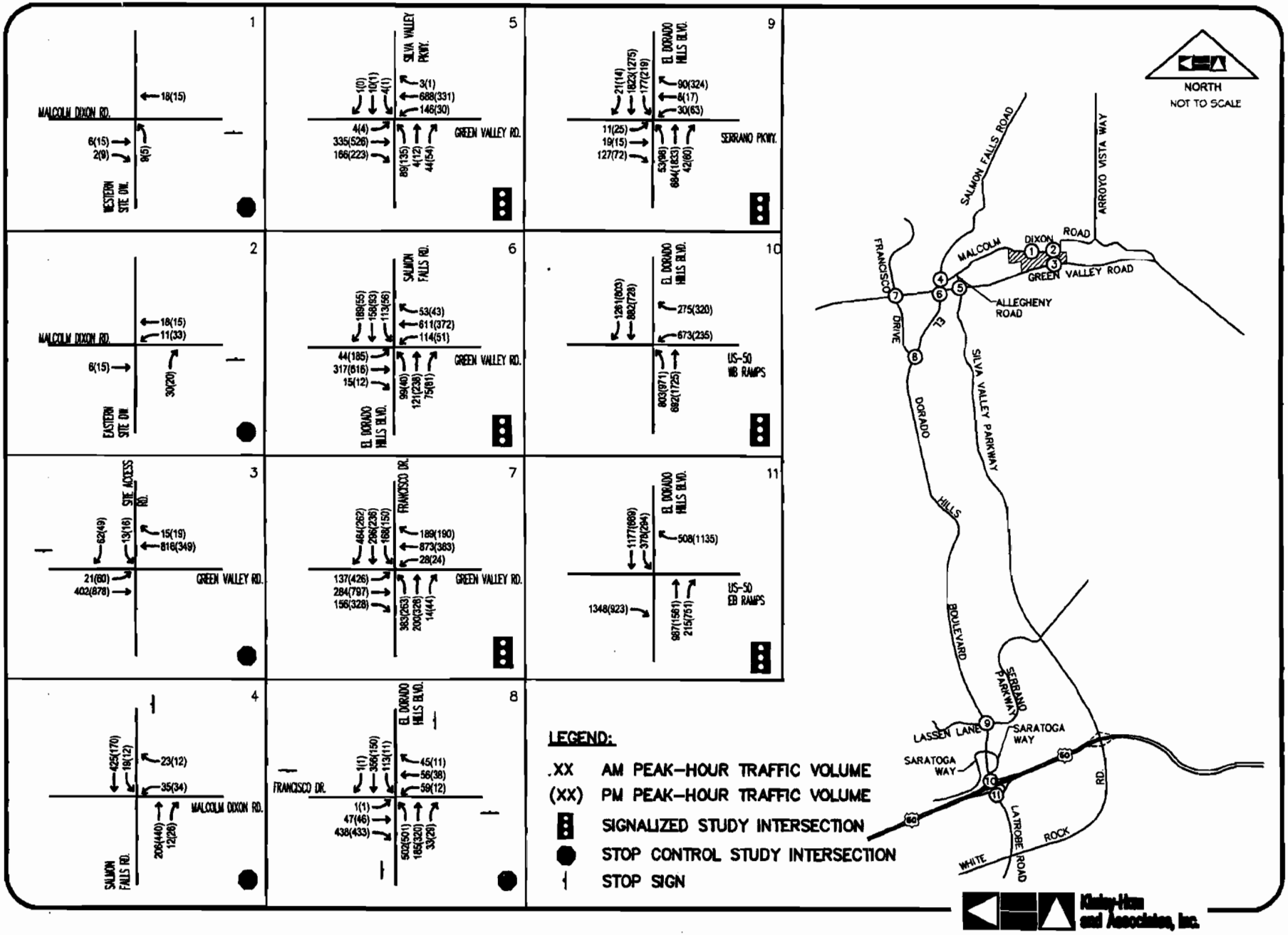


FIGURE 8

EXISTING (2010) PLUS PROPOSED PROJECT PEAK-HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

EXISTING PLUS APPROVED PROJECTS (2015) CONDITIONS

Traffic volumes from the *Saratoga Way Extension Traffic Operation Study*[7] were used to establish year 2015 traffic volumes for the El Dorado Hills Boulevard intersections with Serrano Parkway, US-50 Westbound Ramps, and US-50 Eastbound Ramps. For the other study intersections, two scenarios were evaluated to determine the worst case approximation of near-term study area roadway traffic volumes. First, traffic associated with approved projects in the vicinity of the proposed project as documented in a previous study[8], as well as project traffic associated with three additional projects (Parkes Property - WO#101, Diamante Estates - WO #16, and Green Valley Center – WO#39) were combined and added to the Existing (2010) traffic conditions. Second, five years of projected growth as derived from the County's travel demand model output was applied to the Existing (2010) traffic conditions. For this second scenario, peak-hour traffic volumes for the study area roadway segments were obtained from a representative of the County for the years 1998 and 2025[5]. Using the 1998 and 2025 model data, percent annual peak growth rates were determined for each roadway segment direction and were then extended to five-year growth rates. The study intersections' Existing (2010) peak-hour traffic volumes were then increased by these five year growth rates (by direction) to obtain forecasted (year 2015) traffic conditions.

These two volume scenarios were compared and it was determined that the second scenario, the addition of five years of projected growth as derived from the County's travel demand model output, yields the worst case traffic conditions for the majority of the study intersections' movements. A list of approved projects and details regarding the comparison of year 2015 traffic conditions are presented in Appendix D.

Figure 9 indicates lane configurations assumed for Existing plus Approved Projects (2015) Conditions which includes the build-out of the US-50 interchange with El Dorado Hills Boulevard/Latrobe Road and the construction of the initial phase of the US-50 interchange with Silva Valley Parkway. Table 5 provides a summary of the intersection analysis and Figure 10 provides the AM and PM traffic volumes for this analysis scenario.

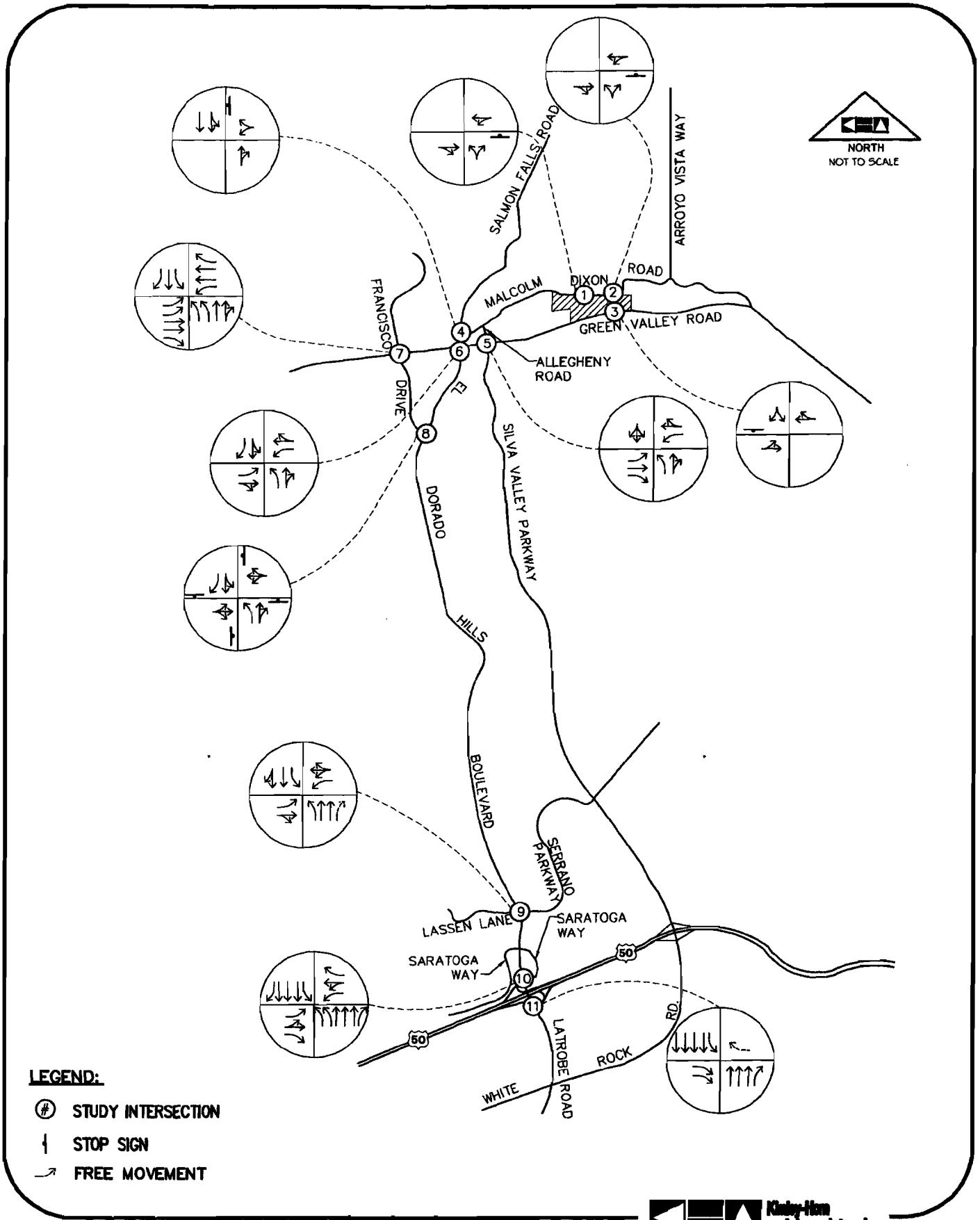
Table 5 – Existing plus Approved Projects (2015) Intersection Levels of Service

#	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Malcolm Dixon Rd @ Western Project Site Access Dwy	*Plus Project Analysis Scenarios Only*				
2	Malcolm Dixon Rd @ Eastern Project Site Access Dwy					
3	Green Valley Rd @ Site Access Rd					
4	Salmon Falls Rd @ Malcolm Dixon Rd	TWSC*	12.3 (WB)	B	14.1 (WB)	B
5	Green Valley Rd @ Silva Valley Pkwy/Allegheny Rd	Signal	18.3	B	18.5	B
6	Green Valley Rd @ El Dorado Hills Blvd/Salmon Falls Rd	Signal	60.3	E	57.0	E
7	Green Valley Rd @ Francisco Dr	Signal	45.6	D	37.7	D
8	El Dorado Hills Blvd @ Francisco Dr	AWSC	**93.9**	**F**	**51.5**	**F**
9	El Dorado Hills Blvd @ Serrano Pkwy	Signal	20.1	C	63.9	E
10	El Dorado Hills Blvd @ US-50 Westbound Ramps	Signal	53.1	D	35.3	D
11	Latrobe Rd @ US-50 Eastbound Ramps	Signal	44.8	D	57.8	E

* Control delay for worst minor approach (worst minor movement) for TWSC. **Bold = Substandard per County**

As indicated in Table 5, the study intersections operate from LOS B to LOS F during the AM and PM peak-hours. The analysis worksheets for this scenario are provided in Appendix E.

[7] Dowling Associates, Inc., ftp://ftp.dowlinginc.com.
[8] *Parkes Property Traffic Impact Analysis (WO #101)*, Kimley-Horn and Associates, Inc., January 24, 2008.



Kimley-Horn and Associates, Inc.

FIGURE 9

EXISTING PLUS APPROVED PROJECTS (2015)
INTERSECTION CONFIGURATIONS

WILSON ESTATES
EL DORADO HILLS, CA

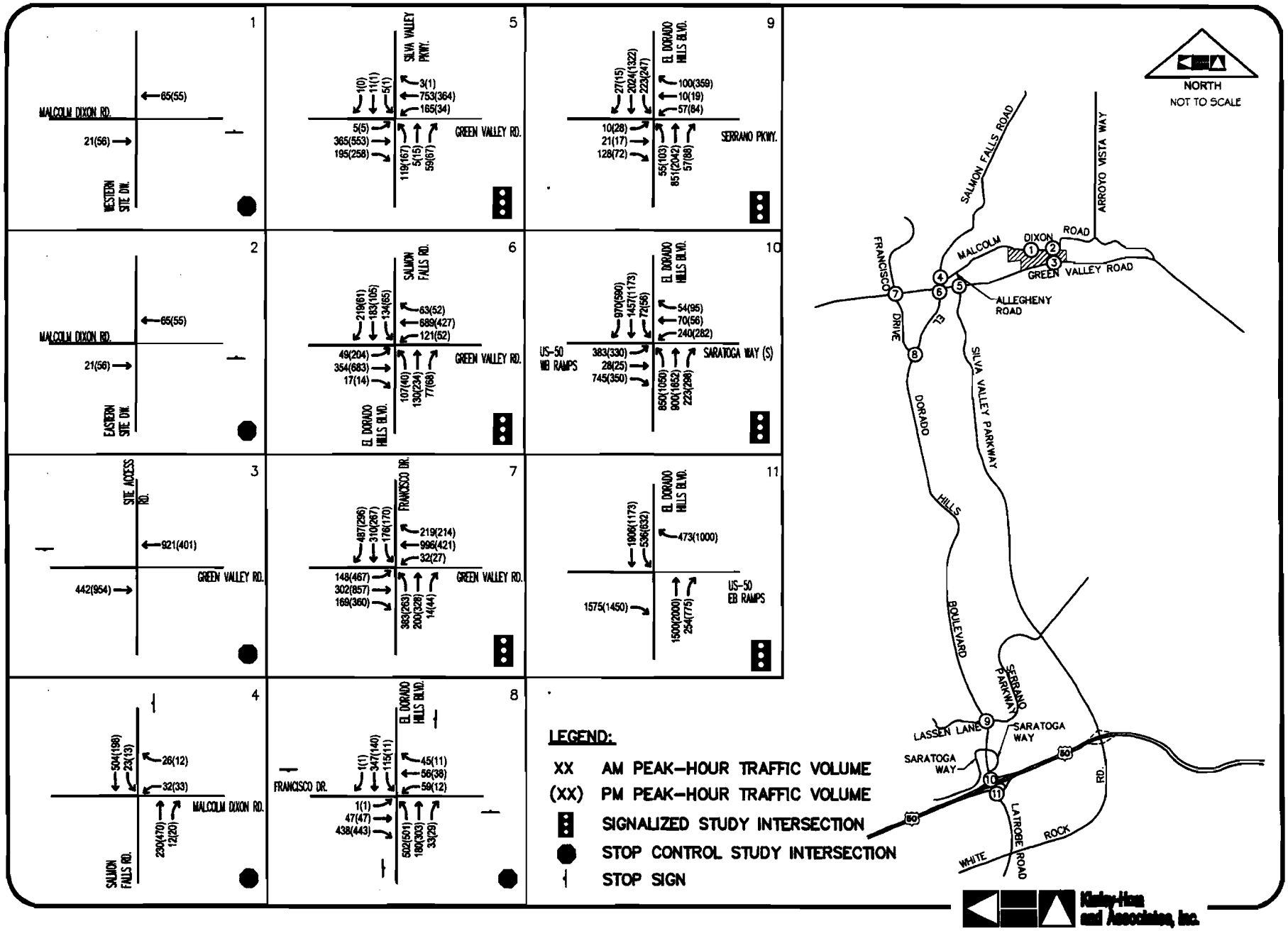


FIGURE 10

EXISTING PLUS APPROVED PROJECTS (2015) PEAK-HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

EXISTING PLUS APPROVED PROJECTS (2015) PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the Existing plus Approved Projects (2015) traffic volumes, and levels of service were determined at the study facilities. Table 6 provides a summary of the intersection operating conditions for this analysis scenario. Figure 11 provides the AM and PM traffic volumes for this analysis scenario.

Table 6 – Existing plus Approved Projects (2015) and Existing plus Approved Projects (2015) plus Proposed Project Intersection Levels of Service

#	Intersection	Analysis Scenario[+]	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay[*] (sec/veh)	LOS	Delay[*] (sec/veh)	LOS
1	Malcolm Dixon Rd @ Western Project Site Access Dwy	EPAP		*Plus Project Analysis Scenarios Only*			
		EPAP+PP	TWSC	8.7 (NB)	A	8.7 (NB)	A
2	Malcolm Dixon Rd @ Eastern Project Site Access Dwy	EPAP		*Plus Project Analysis Scenarios Only*			
		EPAP+PP	TWSC	8.5 (NB)	A	8.5 (NB)	A
3	Green Valley Rd @ Site Access Rd	EPAP		*Plus Project Analysis Scenarios Only*			
		EPAP+PP	TWSC	28.5 (SB)	D	22.4 (SB)	C
4	Salmon Falls Rd @ Malcolm Dixon Rd	EPAP	TWSC	12.3 (WB)	B	14.1 (WB)	B
		EPAP+PP		12.5 (WB)	B	14.3 (WB)	B
5	Green Valley Rd @ Silva Valley Pkwy/Allegheny Rd	EPAP	Signal	18.3	B	18.5	B
		EPAP+PP		19.4	B	18.5	B
6	Green Valley Rd @ El Dorado Hills Blvd/Salmon Falls Rd	EPAP	Signal	60.3	E	57.0	E
		EPAP+PP		62.5	E	61.8	E
7	Green Valley Rd @ Francisco Dr	EPAP	Signal	45.6	D	37.7	D
		EPAP+PP		46.0	D	37.9	D
8	El Dorado Hills Blvd @ Francisco Dr	EPAP	AWSC	93.9	F	51.5	F
		EPAP+PP		96.1	F	52.3	F
9	El Dorado Hills Blvd @ Serrano Pkwy	EPAP	Signal	20.1	C	63.9	E
		EPAP+PP		23.0	C	65.2	E
10	El Dorado Hills Blvd @ US-50 Westbound Ramps	EPAP	Signal	53.1	D	35.3	D
		EPAP+PP		52.3	D	35.2	D
11	Latrobe Rd @ US-50 Eastbound Ramps	EPAP	Signal	44.8	D	57.8	E
		EPAP+PP		44.8	D	57.7	E

[+] EPAP = Existing plus Approved Projects (2015), EPAP + PP = EPAP (2015) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement) for TWSC. **Bold = Substandard per County**

As indicated in Table 6, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours. The analysis worksheets for this scenario are provided in Appendix F.

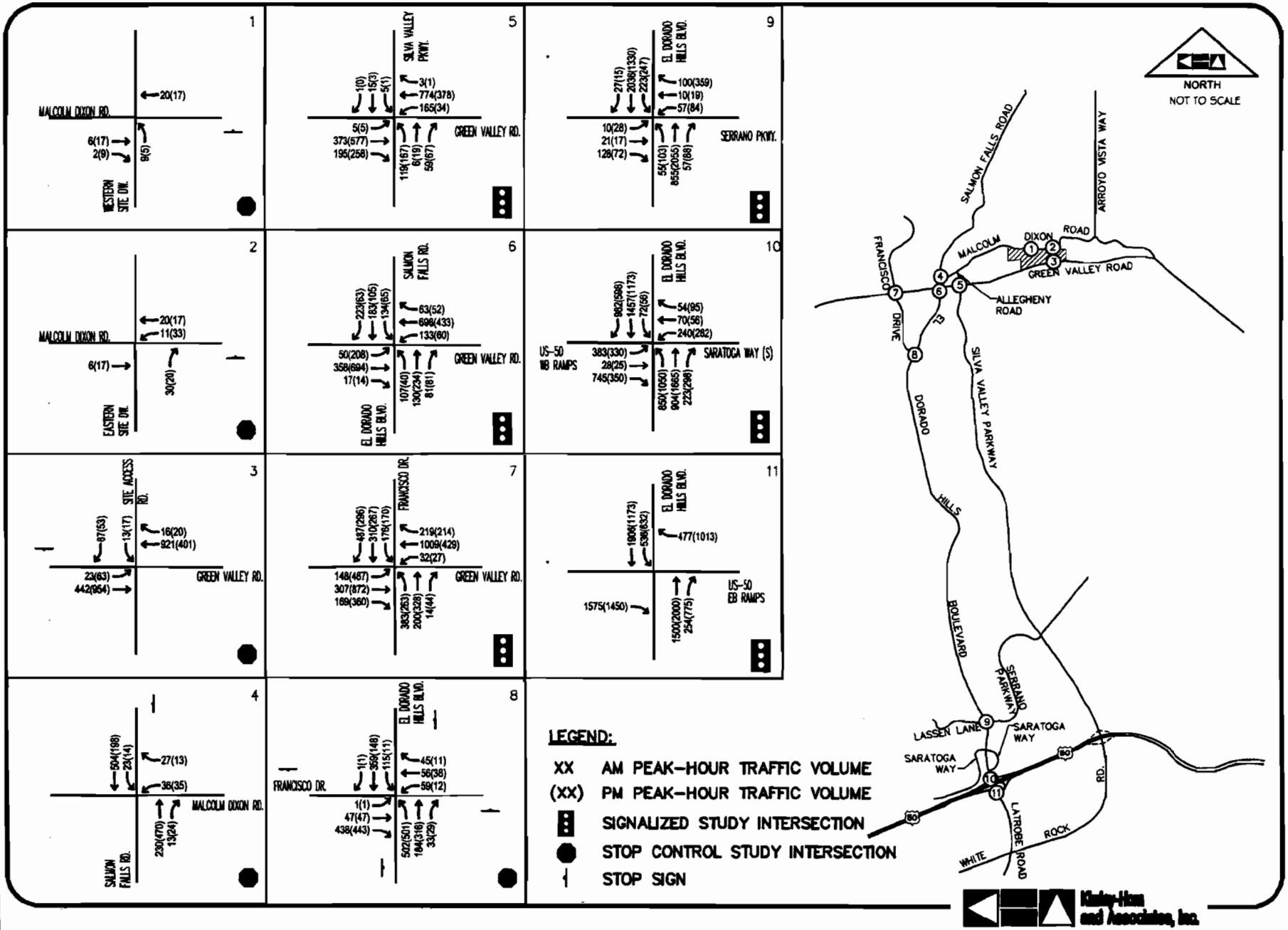


FIGURE 11

EXISTING PLUS APPROVED PROJECTS (2015)
PLUS PROPOSED PROJECT PEAK-HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

IMPACTS AND MITIGATION

Standards of Significance

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold.

The County's standards[9] specify the following:

> "Level of Service (LOS) for County-maintained roads and State highways within the unincorporated areas of the County *shall not be worse than* ***LOS E in the Community Regions***." (El Dorado County General Plan Policy TC-Xd) The proposed project is located within the El Dorado Hills Community Region.
>
> "If a project causes the peak-hour level of service...on a County road or State highway that would otherwise meet the County standards (without the project) to exceed the [given] values, then the impact shall be considered significant."
>
> "If any county road or state highway fails to meet the [given] standards for peak hour level of service...under existing conditions, and the project will 'significantly worsen' conditions on the road or highway, then the impact shall be considered significant." According to General Plan Policy TC-Xe[10], 'significantly worsen' is defined as "a 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or the addition of 100 or more daily trips, or the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour."

In summary, **LOS E** will be used for all study intersections.

Impacts and Mitigation

Existing (2010) plus Proposed Project Conditions

As reflected in Table 4, the addition of the proposed project results in two (2) significant impacts as defined by the County. The following is a discussion of each of these impacts and their associated mitigations.

Impacts:

I1. *Intersection #6, Green Valley Road @ El Dorado Hills Boulevard/Salmon Falls Road*
As shown in Table 4, this intersection operates at LOS F during the AM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during a peak-hour (Figure 5). ***This is a significant impact.***

I2. *Intersection #8, El Dorado Hills Boulevard @ Francisco Drive*
As shown in Table 4, this intersection operates at LOS F during the AM peak-hour without the project, and the project contributes more than 10 peak-hour trips to the intersection during a peak-hour (Figure 5). In addition, this intersection operates at LOS E during the PM peak-hour without the project, and the project results in LOS F. ***This is a significant impact.***

I3. *Intersection #10, El Dorado Hills* Boulevard @ US-50 Westbound Ramps
As shown in Table 4, this intersection operates at LOS F during the AM and PM peak-hours without the project, and the project contributes more than 10 peak-hour trips to the intersection during a peak-hour (Figure 5). ***This is a significant impact.***

[9] *Traffic Impact Study Protocols and Procedures,* El Dorado County Department of Transportation, June 2008.
[10] *El Dorado County General Plan, Transportation and Circulation Element,* July 2004.

Mitigation:

M1. Intersection #6, Green Valley Road @ El Dorado Hills Boulevard/Salmon Falls Road

The significant impact at this intersection during the AM peak-hour can be mitigated with signal cycle length optimization and reallocation of the green time. As shown in Table 7, this mitigation measure results in the intersection operating at LOS D during the AM peak-hour. Therefore, ***this impact is less than significant.*** The proposed project should contribute its proportionate share toward these improvements.

M2. Intersection #8, El Dorado Hills Boulevard @ Francisco Drive

The significant impact at this intersection during the AM and PM peak-hours can be mitigated with the addition of an eastbound channelized right-turn lane. Channelization of the eastbound right-turn lane will require the addition of a southbound receiving lane. As shown in Table 7, this mitigation measure results in the intersection operating at LOS D and LOS C during the AM and PM peak-hours, respectively. Therefore, ***this impact is less than significant.*** The proposed project should contribute its proportionate share toward these improvements.

M3. Intersection #10, El Dorado Hills Boulevard @ US-50 Westbound Ramps

The significant impact at this intersection during the AM and PM peak-hours can be mitigated with the implementation of the ultimate configuration of the US-50 interchange with El Dorado Hills Boulevard/Latrobe Road. The ultimate interchange configuration is currently under construction and is assumed to be in place for the Existing plus Approved Projects (2015) Conditions. As shown in Table 7, incorporation of the ultimate intersection lane configuration results in the intersection operating at LOS C and LOS B during the AM and PM peak-hours, respectively. Therefore, ***this impact is less than significant.***

Table 7 – Intersection Levels of Service –
Existing (2010) plus Proposed Project Mitigated Conditions

#	Intersection	Analysis Scenario	Traffic Control	AM Peak-Hour Delay (seconds)	AM Peak-Hour LOS	PM Peak-Hour Delay (seconds)	PM Peak-Hour LOS
6	Green Valley Rd @ El Dorado Hills Blvd/Salmon Falls Rd	Exist.	Signal	**83.2**	F	46.9	D
		Exist.+PP		**91.2**	F	51.6	D
		Exist.+PP (Mit)		39.8	D	50.7	D
8	El Dorado Hills Blvd @ Francisco Dr	Exist.	AWSC	**92.7**	F	49.9	E
		Exist.+PP		**95.5**	F	**50.9**	F
		Exist.+PP (Mit)		27.8	D	16.8	C
10	El Dorado Hills Blvd @ US-50 Westbound Ramps	Exist.	Signal	**186.1**	F	**89.9**	F
		Exist.+PP		**188.5**	F	**91.8**	F
		Exist.+PP (Mit)		20.4	C	14.1	B

[+] Exist. = Existing (2010), Exist. + PP = Existing (2010) plus Proposed Project, Mit = Mitigated

Analysis worksheets for this scenario are provided in Appendix G.

Existing plus Approved Projects (EPAP) plus Proposed Project Conditions

As reflected in Table 6, the addition of the proposed project results in one (1) significant impact as defined by the County. The following is a discussion of each of these impacts and their associated mitigations.

Impacts:

I4. Intersection #8, El Dorado Hills Boulevard @ Francisco Drive
As shown in Table 6, this intersection operates at LOS F during the AM and PM peak-hours without the project, and the project contributes more than 10 peak-hour trips to the intersection during a peak-hour (Figure 6). ***This is a significant impact.***

Mitigation:

M4. Intersection #8, El Dorado Hills Boulevard @ Francisco Drive
The significant impact at this intersection during the AM and PM peak-hours can be mitigated with the addition of an eastbound channelized right-turn lane. Channelization of the eastbound right-turn lane will require the addition of a southbound receiving lane. As shown in Table 8, this mitigation measure results in the intersection operating at LOS D and LOS C during the AM and PM peak-hours, respectively. Therefore, ***this impact is less than significant.*** The proposed project should contribute its proportionate share toward these improvements.

Table 8 – Intersection Levels of Service –
Existing plus Approved Projects (2015) plus Proposed Project Mitigated Conditions

#	Intersection	Analysis Scenario	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
8	El Dorado Hills Blvd @ Francisco Dr	EPAP	AWSC	93.9	F	51.5	F
		EPAP+PP		96.1	F	52.3	F
		EPAP+PP (Mit)		28.0	D	16.7	C

[+] EPAP = Existing plus Approved Projects (2015), EPAP + PP = Existing plus Approved Projects (2015) plus Proposed Project , Mit = Mitigated, [*] Control delay for worst minor approach (worst minor movement) for TWSC.

Analysis worksheets for this scenario are provided in Appendix G.

OTHER CONSIDERATIONS

Peak-Hour Traffic Signal Warrant Evaluation

A planning level assessment of the need for traffic signalization was performed for the un-signalized study intersections. This evaluation was performed consistently with the peak-hour warrant methodologies noted in Section 4C of the *California Manual on Uniform Traffic Control Devices (CMUTCD)*, dated January 21, 2010. A summary of the peak-hour warrant results are presented in Table 9.

Table 9 – Traffic Signal Warrant Analysis Results

#	Intersection	Analysis Scenario			
		Existing (2010)	Existing (2010) plus PP	EPAP (2015)	EPAP (2015) plus PP
1	Malcolm Dixon Rd @ Western Site Dwy		No / No		No / No
2	Malcolm Dixon Rd @ Eastern Site Dwy		No / No		No / No
3	Green Valley Rd @ Site Access Rd		No / No		No / No
4	Salmon Falls Rd @ Malcolm Dixon Rd	No / No	No / No	No / No	No / No
8	El Dorado Hills Blvd @ Francisco Dr	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes

Results are presented in **AM / PM format.**
Note: Peak-hour warrant is satisfied if Condition A or B is met.

As shown in Table 9, intersection #8 (El Dorado Hills Blvd @ Francisco Dr) satisfies the peak-hour signal warrant with and without the addition of the proposed project. However, the proposed project does not cause the peak-hour signal warrant to be satisfied at any of the study intersections. Detailed results of this analysis are presented in Appendix H.

Sight Distance Evaluation

A sight distance evaluation was completed for the two Malcolm Dixon Road intersections with the site access driveways (Intersections #1 and #2), as well as the Green Valley Road intersection with the proposed site access roadway (Intersection #3). These evaluations were based on observed horizontal and vertical geometric conditions and were performed in accordance with the guidelines presented in the *Geometric Design of Highways and Streets, 2004*, published by the American Association of State Highway and Transportation Officials (AASHTO).

According to AASHTO, an assumed 40 mph design speed (35 mph posted speed limit) requires a minimum of 305 feet of Stopping Sight Distance (SSD). Adequate sight distance was observed in both directions for the Malcolm Dixon Road intersections with the site access driveways. Furthermore, an assumed 60 mph design speed (55 mph posted speed limit) requires a minimum of 570 feet of SSD. Adequate sight distance was observed in both directions for the Green Valley Road intersection with the site access roadway. In all cases, roadside vegetation should be maintained to preserve sight distance.

Intersection Queuing Evaluation

Vehicle queuing for three (3) intersections was evaluated. For the queuing analysis, the anticipated vehicle queues for critical movements at these intersections were evaluated. The calculated vehicle queues were compared to actual or anticipated vehicle storage/segment lengths. Results of the queuing evaluation are presented in Table 10. Analysis sheets that include the anticipated vehicle queues are presented in Appendices B, and D-G. As presented in Table 10, the addition of the proposed project adds additional queuing to several of the study locations.

Site Plan, Access, and On-site Circulation Evaluation

The site plan for the proposed project (Figure 2) was qualitatively reviewed for general access and on-site circulation. According to the site plan, access to the site will be provided via two (2) full access driveways along Malcolm Dixon Road. Level of service, delay, and queuing data was previously reported for these intersections. It is important to note that the proposed project is also assumed to include (either as part of the project or to have been previously constructed by others) the construction of a new access road connecting Malcolm Dixon Road and Green Valley Road through the eastern portions of the site. Although not critical to the project site access from Malcolm Dixon Road, this connection to Green Valley Road will enhance project area traffic access by minimizing the reliance on Malcolm Dixon Road to the east and west. In conclusion, the proposed project appears to have adequate access to/from both Malcolm Dixon Road and Green Valley Road.

According to AASHTO, the combination of the volume of eastbound left-turns onto the project site access roadway with the proportion of this movement to the approach volumes suggests the need to consider an exclusive eastbound left-turn lane along Green Valley Road[11]. Considering the high speed, rural nature of Green Valley Road through the project area, an exclusive eastbound left-turn lane should be considered as a means by which to enhance safety at the project site access roadway intersection. Said left-turn lane should be designed with appropriate storage and deceleration distances consistent with the County's applicable design standards.

[11] *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2004. Exhibit 9-75, Page 685.

Table 10 – Intersection Queuing Evaluation Results for Select Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour Available Storage (ft)	AM Peak-Hour 95th % Queue (ft)	PM Peak-Hour Available Storage (ft)	PM Peak-Hour 95th % Queue (ft)
#3, Green Valley Rd @ Site Access Rd	**SBL**				
Existing (2010)		*	-	*	-
Existing plus Proposed Project (2010)			28		20
EPAP (2015)			-		-
EPAP plus Proposed Project (2015)			39		26
	EBL				
Existing (2010)		*	-	*	-
Existing plus Proposed Project (2010)			2		4
EPAP (2015)			-		-
EPAP plus Proposed Project (2015)			3		5
#5, Green Valley Rd @ Silva Valley Pkwy	**WBL**				
Existing (2010)		350	121	350	41
Existing plus Proposed Project (2010)			121		41
EPAP (2015)			132		45
EPAP plus Proposed Project (2015)			133		45
#6, Green Valley Rd @ El Dorado Hills Blvd	**EBL**				
Existing (2010)		85	86	85	228
Existing plus Proposed Project (2010)			89		234
EPAP (2015)			105		288
EPAP plus Proposed Project (2015)			108		295
	WBL				
Existing (2010)		105	186	105	86
Existing plus Proposed Project (2010)			206		102
EPAP (2015)			171		110
EPAP plus Proposed Project (2015)			194		127

Source: *Highway Capacity Manual (HCM) 2000* methodology per Synchro® v7.
* Intersection approach with available storage length equal to segment length

In addition, *Fire Safe Regulations*[12] state that on-site roadways shall "provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency..." All project roadways shall be designed and constructed in accordance with these requirements.

Preliminary Traffic Safety Evaluation

According to the County's 2007 *Accident Location Study*[13], several study area sites (i.e., intersections and roadway segments) experienced three (3) or more accidents during a three-year period between January 1, 2005, and December 31, 2007. According to the Study, these sites were selected for investigation and determination of corrective action(s). Table 11 provides a summary of the study area sites and their selected actions.

[12] *Fire Safe Regulations*, Title 14 Natural Resources, Division 1.5 Department of Forestry, Chapter 7 – Fire Protection, Subchapter 2 SRA Safe Regulations, Article 2 Emergency Access, El Dorado County Building Department.
[13] *Annual Accident Location Study 2007*, County of El Dorado Department of Transportation, March 28, 2008.

Table 11 – Project Area Sites Selected for Investigation

Site #	Location Description	Accident Rate[+]	Identified Action
14	El Dorado Hills Blvd, North of US-50	1.28	Pending Improvements
15	El Dorado Hills Blvd, at Lassen Ln	0.46	None Required
16	El Dorado Hills Blvd, at Olson Ln	0.36	None Required
19	Green Valley Rd, from Amy's Ln to Miller Rd	1.33	Recent Improvements
20	Green Valley Rd, at Francisco Dr	0.44	None Required
21	Green Valley Rd, at El Dorado Hills Blvd	0.49	None Required
44	Salmon Falls Rd, vicinity of Lakehills Dr	1.06	Proposed CIP

Source: *Annual Accident Location Study 2007*, County of El Dorado Department of Transportation, March 28, 2008.
[+] # Accidents per Million Vehicles (MV) for single sites (intersections/curves), # Accidents per Million Vehicle Miles (MVM) for roadway sections.

According to the *Study*, four (4) sites "do not require further review at this time. However, these sites will continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis." One (1) site has a pending improvement and it is anticipated that, "upon completion, [this] improvement will substantially reduce the number of accidents." Site 44, Salmon Falls Road in the vicinity of Lakehills Drive, has been identified for inclusion in the County's Capital Improvement Program (CIP). "The scope of these improvements would require budget consideration and subsequent inclusion within the CIP...[this project] will compete for funding and consequently may, or may not, be funded."

Bicycle and Pedestrian Facilities Evaluation

According to Chapter 5 of the *El Dorado County Bicycle Transportation Plan*, Class II Bike Lanes are proposed for Green Valley Road, Francisco Drive, and El Dorado Hills Boulevard in the vicinity of the project site. In addition, Class III Bike Routes are proposed for Francisco Drive and Salmon Falls Road/Lakehills Drive north of Green Valley Road. A Class I Bike Path is also proposed for El Dorado Hills Boulevard, south of Francisco Drive.

While the project will not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the *Plan*, it is required to include pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities. The proposed project will be required to construct on-site roadway and pedestrian facilities in accordance with County design guidelines. These on-site pedestrian and bicycle facilities will connect the project with the proposed adjacent Class II Bike Lanes along Green Valley Road. Through this connection to the proposed bike lane network, the project will provide continuity with adjacent projects, schools, parks, and other public facilities.

CONCLUSIONS

Based upon the analysis documented in this report, the following conclusions are offered:

- The proposed project is expected to generate 650 total daily trips, including 52 AM peak-hour trips and 66 PM peak-hour trips.
- The proposed project is consistent with the zoning density and the 2004 General Plan land use designation for the site. Furthermore, the proposed project trip generation is not projected to exceed 2025 thresholds assumed in the County's 2004 *General Plan* trip generation. Therefore, cumulative (year 2025) analyses are not required.

- As defined by the County, the addition of the proposed project to the Existing (2010) and Existing plus Approved Projects (2015) scenarios significantly worsens conditions at three (3) study intersections. However, these impacts can be mitigated to be ***less than significant***.
- The combination of the volume of eastbound left-turns onto the project site access roadway with the proportion of this movement to the approach volumes suggests the need to consider an exclusive eastbound left-turn lane along Green Valley Road. Considering the high speed, rural nature of Green Valley Road through the project area, an exclusive eastbound left-turn lane should be considered as a means by which to enhance safety at the project site access roadway intersection. Said left-turn lane should be designed with appropriate storage and deceleration distances consistent with the County's applicable design standards.

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Dowling Associates, Inc.

Date: 4-Apr-11

Memorandum

See also May 3, 2012 Kimley-Horn Supplemental Traffic Analysis

To: Eileen Crawford

cc: Matt Weir, File

From: Abhishek Parikh

Reference #: P08-044.1-38

Subject: Review Comments for Wilson Estates TIS WO # 38

Dowling Associates has reviewed the Revised Traffic Report for Wilson Estates, dated March 3, 2011. We concur with the findings of the report.

Recommended Conditions of Approval

Conditions of Approval can be limited to statements similar to the following:

1) The project applicant shall pay the TIM fees as calculated by the County Engineer at the time of application approval.
2) Project may be required to pay the fair share cost of mitigating queue impacts.
3) Construct new on site local roads per County standards.

Should you have any questions, contact Abhi Parikh at (916) 266-2190 x 306

Exhibit U-Attachment 17

Z 11-0007
PD 11-0004/TM11-1504

Kimley-Horn
and Associates, Inc.

May 3, 2012

Mr. David Crosariol
CTA Engineering & Surveying
3233 Monier Circle
Rancho Cordova, CA 95742

Suite 200
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95670

Re: Supplemental Traffic Impact Analysis for Wilson Estates (WO#38)

Dear Mr. Crosariol:

As a result of recent coordination, we have prepared a supplemental traffic analysis pertaining to your proposed Wilson Estates project. More specifically, the purpose of this supplemental analysis is to evaluate weekday AM and PM peak-hour, Existing (2010) and Existing plus Approved Projects (2015) operations resulting from the revised project site plan and reduced number of proposed units for the project.

It is our understanding that you have provided an alternative design to the original proposed project site plan considered in the Final Traffic Impact Analysis for this project[1]. The alternative site layout reduces the project size from the previous sixty (60) single-family detached housing units to forty-nine (49). In addition, the proposed site plan relocates the eastern site driveway with Malcolm Dixon Road to the New Connector Road. Furthermore, the western site driveway along Malcolm Dixon Road shifts east in an effort to reduce the attractiveness of Malcolm Dixon Road. Both proposed project access points are assumed to be full access driveways. Because the Final Traffic Impact Analysis for this project[1] considered a different site layout, the following discussion documents the limited effects due to the change in project site access and size on delay, LOS, and queuing at the immediately effected intersections. All other previously documented operational results are anticipated to be no worse than what has been previously documented[1].

Please note that our previous traffic study for the project[1] serves as the starting point for this analysis. The following intersections are included in this supplemental evaluation:

1. Malcolm Dixon Road at Western Site Access Driveway
2. New Connector Road at Eastern Site Access Driveway
3. Green Valley Road at New Connector Road

[1] *Final Traffic Impact Analysis, Wilson Estates (WO #38)*, Kimley-Horn and Associates, Inc., March 3, 2011.

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This supplemental evaluation includes the following specific analysis scenarios:

1. Existing (2010) plus Proposed Project
2. Existing plus Approved Projects (2015) plus Proposed Project

Consistent with the County's requirements, delay, LOS, and queuing for each scenario were determined using methods defined in the *Highway Capacity Manual, 2000,* using appropriate traffic analysis software (Synchro). As required by El Dorado County Department of Transportation's *Traffic Impact Study Protocols and Procedures*, impacts at study intersections were determined based on the change of LOS when project trips were added to the Existing (2010) and Existing plus Approved Projects (2015) Conditions.

Project Trip Generation
The numbers of trips anticipated to be generated by the proposed project were derived using data included in *Trip Generation, 8th Edition,* published by the Institute of Transportation Engineers (ITE). The anticipated trip generation for this project is shown in Table 1.

Table 1 – Proposed Project Trip Generation

Land Use (ITE Code)	Size (# units)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	IN %	IN Trips	OUT %	OUT Trips	Total Trips	IN %	IN Trips	OUT %	OUT Trips
Single-Family Detached Housing (210)	49	540	44	25%	11	75%	33	55	63%	35	37%	20
Net New External Trips:		***540***	***44***		***11***		***33***	***55***		***35***		***20***

Source: *Trip Generation, 8th Edition*, ITE.

As shown in Table 1, the proposed project is estimated to generate 540 total new daily trips, with 44 new trips occurring during the AM peak-hour, and 55 new trips occurring during the PM peak-hour. When compared to the previously documented project[1], 110 fewer daily, 8 fewer AM peak-hour, and 11 fewer PM peak-hour trips are anticipated.

Existing (2010) plus Proposed Project Conditions
For this scenario, peak-hour traffic associated with the proposed project was added to the Existing (2010) traffic volumes and levels of service were determined at the applicable study facilities.

Attachment A provides the AM and PM traffic volumes for this analysis scenario. The analysis worksheets for this scenario are provided in Attachment B.

Table 2 provides a summary of the intersection operating conditions for this analysis scenario.

Table 2 – Intersection Levels of Service -
Existing (2010) and Existing (2010) plus Project Conditions

#	Intersection	Analysis Scenario[+]	Traffic Control	AM Peak-Hour		PM Peak-Hour	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	Malcolm Dixon Rd @ Western Site Access Dwy	Exist.	*Plus Project Analysis Scenarios Only*				
		Exist.+PP (Orig.)	TWSC[*]	8.7 (NB)	A	8.7 (NB)	A
		Exist.+PP		8.7 (NB)	A	8.7 (NB)	A
2	New Connector Rd @ Eastern Site Access Dwy	Exist.	*Intersection not studied in original TIA*				
		Exist.+PP (Orig.)					
		Exist.+PP	TWSC[*]	9.4 (WB)	A	9.8 (WB)	A
3	Green Valley Rd @ New Connector Rd	Exist.	*Plus Project Analysis Scenarios Only*				
		Exist.+PP (Orig.)	TWSC[*]	22.6 (SB)	C	18.8 (SB)	C
		Exist.+PP		22.6 (SB)	C	18.3 (SB)	C

[+] Exist. = Existing (2010), Exist. + PP (Orig.) = Existing (2010) plus Proposed Project as studied in 3/3/2011 Final TIA. Exist. + PP = Existing (2010) plus Proposed Project
[*] Control delay for worst minor approach (worst minor movement) for TWSC.

As indicated in Table 2, the study intersections operate from LOS A to LOS C during the AM and PM peak-hours.

Existing plus Approved Projects (2015) plus Proposed Project Conditions
Peak-hour traffic associated with the proposed project was added to the Existing plus Approved Projects (2015) traffic volumes, and levels of service were determined at the applicable study facilities.

Attachment C provides the AM and PM traffic volumes for this analysis scenario. The analysis worksheets for this scenario are provided in Attachment D.

Table 3 provides a summary of the intersection operating conditions for this analysis scenario. As indicated in Table 3, the study intersections operate from LOS A to LOS D during the AM and PM peak-hours.

Impacts and Mitigations
As reflected in Table 2 and Table 3, the addition of the proposed project does not result in a significant impact as defined by the County at the three intersections considered in this evaluation. Therefore, no mitigation measures are required.

Table 3 – Intersection Levels of Service -
EPAP (2015) and EPAP (2015) plus Project Conditions

#	Intersection	Analysis Scenario[+]	Traffic Control	AM Peak-Hour		PM Peak-Hour	
				Delay (seconds)	LOS	Delay (seconds)	LOS
1	Malcolm Dixon Rd @ Western Site Access Dwy	EPAP	*Plus Project Analysis Scenarios Only*				
		EPAP+PP (Orig.)	TWSC[*]	8.7 (NB)	A	8.7 (NB)	A
		EPAP+PP		8.7 (NB)	A	8.7 (NB)	A
2	New Connector Road @ Eastern Site Access Dwy	EPAP	*Intersection not studied in original TIA*				
		EPAP+PP (Orig.)					
		EPAP+PP	TWSC[*]	9.5 (WB)	A	9.9 (WB)	A
3	Green Valley Rd @ New Connector Rd	EPAP	*Plus Project Analysis Scenarios Only*				
		EPAP+PP (Orig.)	TWSC[*]	28.5 (SB)	D	22.4 (SB)	C
		EPAP+PP		28.0 (SB)	D	21.6 (SB)	C

[+] EPAP = Existing plus Approved Projects (2015), EPAP+PP (Orig) = EPAP (2015) plus Proposed Project as studied in 3/3/2011 Final TIA, EPAP+PP = EPAP (2015) plus Proposed Project; [*] Control delay for worst minor approach (worst minor movement) for TWSC.

Intersection Queuing Evaluation

Vehicle queuing for the study intersections was considered for the northbound left-turning movement at intersection #2, as well as the same movements as evaluated in the previous traffic study[1]. The calculated vehicle queues were compared to actual or anticipated vehicle storage/segment lengths. Results of the queuing evaluation are presented in Table 4.

Table 4 – Intersection Queuing Evaluation Results for Select Locations

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
#2, New Connector Rd @ Eastern Site Dwy	**NBL**				
Existing (2010)		200*	-	200*	-
Existing plus Proposed Project (2010)			1		2
EPAP (2015)			-		-
EPAP plus Proposed Project (2015)			1		2
#3, Green Valley Rd @ New Connector Rd	**SBL**				
Existing (2010)		200*	-	200*	-
Existing plus Proposed Project (2010)			29		19
EPAP (2015)			-		-
EPAP plus Proposed Project (2015)			39		25
	EBL				
Existing (2010)		100	-	100	-
Existing plus Proposed Project (2010)			2		4
EPAP (2015)			-		-
EPAP plus Proposed Project (2015)			3		5

Source: *Highway Capacity Manual (HCM) 2000* methodology per Synchro® v7.
[*] Intersection approach with available storage length equal to segment length

As presented in Table 4, the addition of the proposed project does not result in vehicle queues greater than the available storage pockets or available segment lengths. Furthermore, the southbound left turn queue is not projected to exceed the available segment length along the New Connector Road between the two closely spaced intersections (Green Valley Road and site access driveway). In addition, the northbound left turn queue from the New Connector Road into the project site is not shown to exceed the segment length and is not anticipated to spill back onto Green Valley Road.

Peak-Hour Traffic Signal Warrant Evaluation

A planning level assessment of the need for traffic signalization was performed for the study intersections. This evaluation was performed consistently with the peak-hour warrant methodologies noted in Section 4C of the *California Manual on Uniform Traffic Control Devices (CMUTCD), 2012 Edition*. A summary of the peak-hour warrant evaluation results are presented in Table 5.

Table 5 – Traffic Signal Warrant Analysis Results

#	Intersection	Analysis Scenario			
		Existing (2010)	Existing (2010) plus PP	EPAP (2015)	EPAP (2015) plus PP
1	Malcolm Dixon Rd @ Western Site Dwy		No / No		No / No
2	New Connector Road @ Eastern Site Dwy		No / No		No / No
3	Green Valley Rd @ New Connector Rd		No / No		No / No

Results are presented in AM / PM format.
Note: Peak-hour warrant is satisfied if Condition A or B is met.

The addition of the proposed project does not result in the peak-hour signal warrant being satisfied at the intersections studied in this analysis. Detailed results of this analysis are presented in Attachment E.

On-site Circulation and Access Evaluation

The site plan for the proposed project (Attachment F) was qualitatively reviewed for general access and on-site circulation. As previously mentioned, the proposed site plan relocates the eastern site driveway along Malcolm Dixon Road to the New Connector Road, and shifts the western driveway along Malcolm Dixon Road further to the east. It is understood that driveways to the proposed project site were repositioned in an effort to reduce the attractiveness of Malcolm Dixon Road. The Final Traffic Impact Analysis for this project[1] assumed 22 percent of the project traffic would utilize Malcolm Dixon Road to the west. Based on project area roadway volumes, general knowledge of project area traffic patterns, and engineering judgment, the reconfigured project site is anticipated to make Malcolm Dixon Road approximately half as attractive (11 percent) as the previous site configuration. Understanding that the most likely location for project impacts between the three intersections considered is at the intersection of Green Valley Road and the New Connector Road, an additional 1

percent of project traffic was assigned to use Green Valley Road. As a result, 10 percent of the project traffic was assigned to Malcolm Dixon Road, while the remaining 90 percent was assigned to Green Valley Road. Based on the documented results, all intersections are projected to operate at an acceptable level of service per the County's requirements.

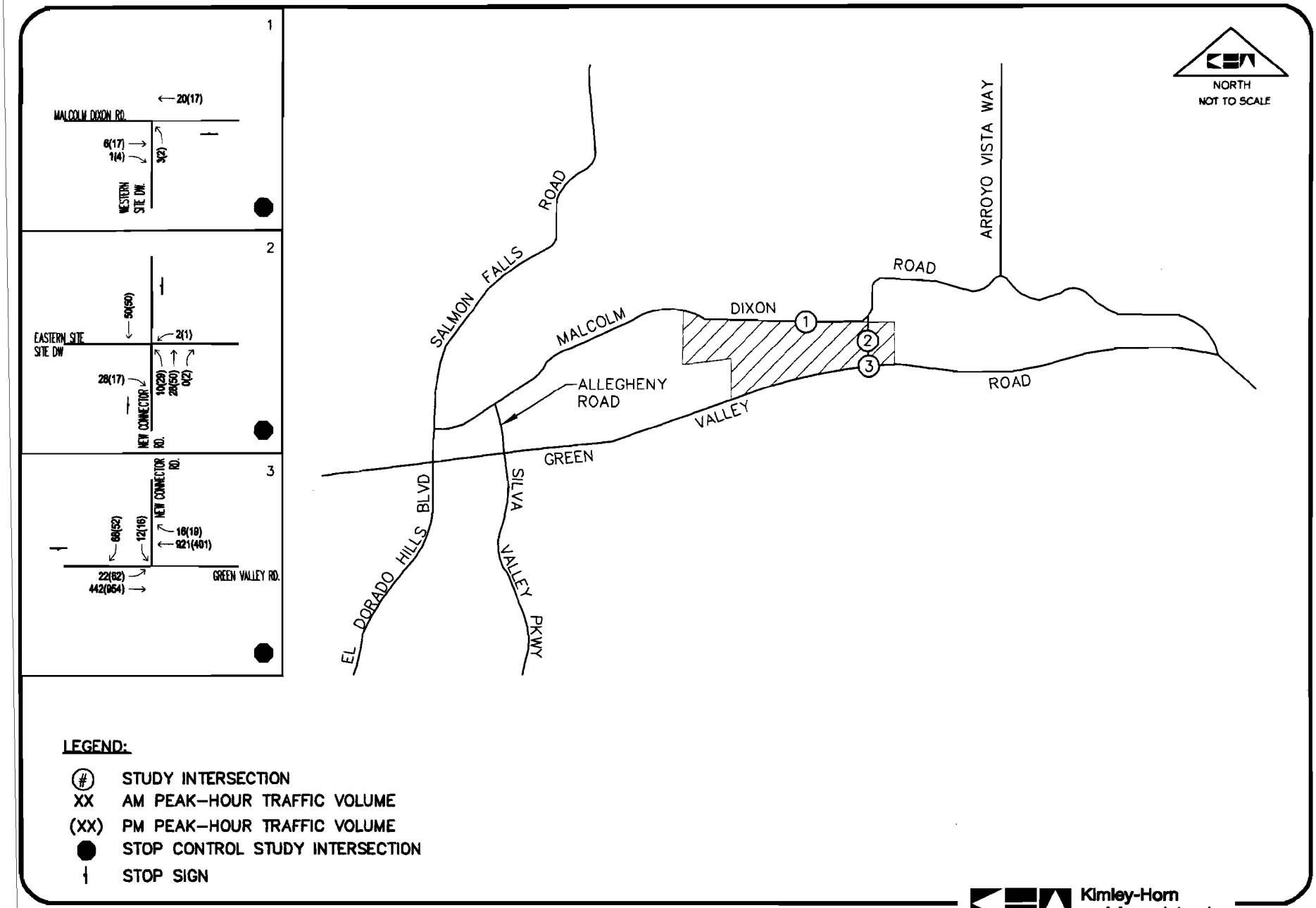
Please contact me at (916) 859-3617 or via e-mail at matt.weir@kimley-horn.com if you have any questions or require additional information.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Matthew D. Weir, P.E., T.E., PTOE
PE No. C70216 & TR2424

Attachments:
- A – Existing (2010) plus Proposed Project Peak-Hour Traffic Volumes
- B – Existing (2010) plus Proposed Project Analysis Worksheets
- C – Existing plus Approved Projects (2015) plus Proposed Project Peak-Hour Traffic Volumes
- D – Existing plus Approved Projects (2015) plus Proposed Project Analysis Worksheets
- E – Signal Warrant Analysis Worksheets
- F – Proposed Project Site Plan, dated March, 2012



LEGEND:

- (#) STUDY INTERSECTION
- XX AM PEAK-HOUR TRAFFIC VOLUME
- (XX) PM PEAK-HOUR TRAFFIC VOLUME
- ● STOP CONTROL STUDY INTERSECTION
- ┤ STOP SIGN

Kimley-Horn and Associates, Inc.

ATTACHMENT C

EXISTING PLUS APPROVED PROJECTS (2015)
PLUS PROPOSED PROJECT PEAK-HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

Attachment B:

Existing (2010) plus Proposed Project Analysis Worksheets

HCM Unsignalized Intersection Capacity Analysis
1: Malcolm Dixon Rd. & Western Dw.

Existing + Project
AM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	6	1	0	18	3	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	0	20	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			8		27	7
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		27	7
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1613		989	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	20	3
Volume Left	0	0	3
Volume Right	1	0	0
cSH	1700	1613	989
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: Eastern Dw. & New Connector Rd.

Existing + Project
AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	28	2	0	0	10	25	0	0	45	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	30	2	0	0	11	27	0	0	49	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	98	98	49	128	98	27	49			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	98	98	49	128	98	27	49			27		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	100	99			100		
cM capacity (veh/h)	880	787	1020	815	787	1048	1558			1587		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	2	38	49
Volume Left	0	2	11	0
Volume Right	30	0	0	0
cSH	1020	815	1558	1587
Volume to Capacity	0.03	0.00	0.01	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	8.6	9.4	2.1	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.6	9.4	2.1	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	402	816	15	12	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	437	887	16	13	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	903				1376	895
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	903				1376	895
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	80
cM capacity (veh/h)	753				155	339

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	22	437	903	82
Volume Left	22	0	0	13
Volume Right	0	0	16	68
cSH	753	1700	1700	285
Volume to Capacity	0.03	0.26	0.53	0.29
Queue Length 95th (ft)	2	0	0	29
Control Delay (s)	9.9	0.0	0.0	22.6
Lane LOS	A			C
Approach Delay (s)	0.5		0.0	22.6
Approach LOS				C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	15	4	0	15	2	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	4	0	16	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			21		35	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		35	18
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1595		978	1060

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	21	16	2
Volume Left	0	0	2
Volume Right	4	0	0
cSH	1700	1595	978
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	1	0	0	29	46	2	0	45	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	18	1	0	0	32	50	2	0	49	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	163	164	49	182	163	51	49			52		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	163	164	49	182	163	51	49			52		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	100	100	100	98			100		
cM capacity (veh/h)	789	714	1020	754	715	1017	1558			1554		

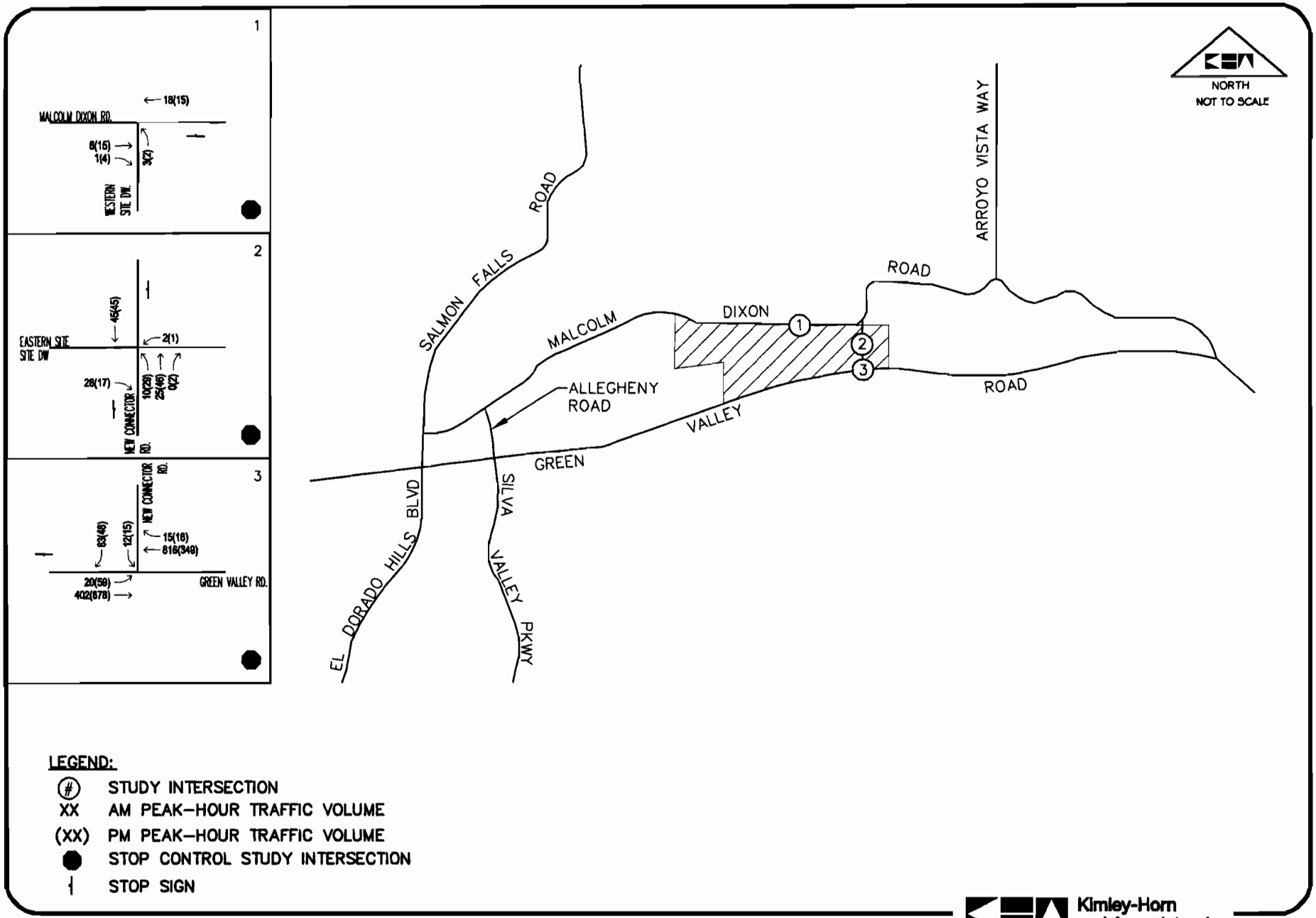
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	1	84	49
Volume Left	0	1	32	0
Volume Right	18	0	2	0
cSH	1020	754	1558	1554
Volume to Capacity	0.02	0.00	0.02	0.00
Queue Length 95th (ft)	1	0	2	0
Control Delay (s)	8.6	9.8	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.6	9.8	2.9	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	20.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	878	349	18	15	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	954	379	20	16	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	399				1472	389
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	399				1472	389
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				88	92
cM capacity (veh/h)	1160				132	659

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	64	954	399	68
Volume Left	64	0	0	16
Volume Right	0	0	20	52
cSH	1160	1700	1700	338
Volume to Capacity	0.06	0.56	0.23	0.20
Queue Length 95th (ft)	4	0	0	19
Control Delay (s)	8.3	0.0	0.0	18.3
Lane LOS	A			C
Approach Delay (s)	0.5		0.0	18.3
Approach LOS				C

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	56.7%	ICU Level of Service	B	
Analysis Period (min)	15			



LEGEND:

- (#) STUDY INTERSECTION
- XX AM PEAK–HOUR TRAFFIC VOLUME
- (XX) PM PEAK–HOUR TRAFFIC VOLUME
- ● STOP CONTROL STUDY INTERSECTION
- ┤ STOP SIGN

Kimley-Horn and Associates, Inc.

ATTACHMENT A

EXISTING (2010) PLUS PROPOSED PROJECT PEAK–HOUR TRAFFIC VOLUMES

WILSON ESTATES
EL DORADO HILLS, CA

Attachment D:

Existing plus Approved Projects (2015) plus Proposed Project Analysis Worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	6	1	0	20	3	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	0	22	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			8		29	7
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		29	7
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1613		986	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	22	3
Volume Left	0	0	3
Volume Right	1	0	0
cSH	1700	1613	986
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	28	2	0	0	10	28	0	0	50	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	30	2	0	0	11	30	0	0	54	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	107	107	54	137	107	30	54			30		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	107	107	54	137	107	30	54			30		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	100	99			100		
cM capacity (veh/h)	868	778	1013	805	778	1044	1551			1582		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	2	41	54
Volume Left	0	2	11	0
Volume Right	30	0	0	0
cSH	1013	805	1551	1582
Volume to Capacity	0.03	0.00	0.01	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	8.7	9.5	2.0	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.7	9.5	2.0	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	22	442	921	16	12	68
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	480	1001	17	13	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1018				1538	1010
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1018				1538	1010
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				89	75
cM capacity (veh/h)	681				123	291

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	24	480	1018	87
Volume Left	24	0	0	13
Volume Right	0	0	17	74
cSH	681	1700	1700	242
Volume to Capacity	0.04	0.28	0.60	0.36
Queue Length 95th (ft)	3	0	0	39
Control Delay (s)	10.5	0.0	0.0	28.0
Lane LOS	B			D
Approach Delay (s)	0.5		0.0	28.0
Approach LOS				D

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	17	4	0	17	2	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	4	0	18	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			23		39	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			23		39	21
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1592		973	1057

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	23	18	2
Volume Left	0	0	2
Volume Right	4	0	0
cSH	1700	1592	973
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	17	1	0	0	29	50	2	0	50	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	18	1	0	0	32	54	2	0	54	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	173	174	54	191	173	55	54			57		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173	174	54	191	173	55	54			57		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	100	100	100	98			100		
cM capacity (veh/h)	778	705	1013	743	706	1011	1551			1548		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	1	88	54
Volume Left	0	1	32	0
Volume Right	18	0	2	0
cSH	1013	743	1551	1548
Volume to Capacity	0.02	0.00	0.02	0.00
Queue Length 95th (ft)	1	0	2	0
Control Delay (s)	8.6	9.9	2.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.6	9.9	2.7	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	21.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Volume (veh/h)	62	954	401	19	16	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	1037	436	21	17	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	457				1618	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	457				1618	446
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				84	91
cM capacity (veh/h)	1104				107	612

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	67	1037	457	74
Volume Left	67	0	0	17
Volume Right	0	0	21	57
cSH	1104	1700	1700	290
Volume to Capacity	0.06	0.61	0.27	0.26
Queue Length 95th (ft)	5	0	0	25
Control Delay (s)	8.5	0.0	0.0	21.6
Lane LOS	A			C
Approach Delay (s)	0.5		0.0	21.6
Approach LOS				C

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	61.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Attachment E:

Signal Warrant Analysis Worksheets

Scenario Report

Scenario:	Existing + PP AM
Command:	Default Command
Volume:	Existing + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met (Del / Vol)	Future Met (Del / Vol)
1 Malcolm D Ave & Western Site Dw	No No	No No
2 New Connector & Eastern Dw	No No	No No
3 Green Valley Rd & Site Access Dw	No No	No No

Peak Hour Delay Signal Warrant Report

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	1 0 0 0 0	1 0 0 0 0	0 0 0 1 0	0 0 1 0 0
Initial Vol:	3 0 0	0 0 0	0 6 1	0 16 0
ApproachDel:	8.6	xxxxxx	xxxxxx	xxxxxx

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 150 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=28]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	1 0 0 0 0	0 0 0 0 0	0 0 0 1 0	0 0 1 0 0
Initial Vol:	3 0 0	0 0 0	0 6 1	0 16 0

Major Street Volume: 25
Minor Approach Volume: 9
Minor Approach Volume Threshold: 1203

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	1	0	0	0	0	0	1	0	0	1	0
Initial Vol:	10	25	0	0	45	0	0	0	20	0	0	0
ApproachDel:	9.1			9.4			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=35]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=110]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=45]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=110]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	1	0	0	0	0	0	1	0	0	1	0
Initial Vol:	10	25	0	0	45	0	0	0	20	0	0	0

Major Street Volume: 80
Minor Approach Volume: 45
Minor Approach Volume Threshold: 1255

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #3 Green Valley Rd @ Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Initial Vol:	0	0	0	12	0	63	20	402	0	0	816	15
ApproachDel:	xxxxxx			19.5			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=75]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1328]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #3 Green Valley Rd @ Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Initial Vol:	0	0	0	12	0	63	20	402	0	0	816	15

Major Street Volume: 1253
Minor Approach Volume: 75
Minor Approach Volume Threshold: 207

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Scenario Report

Scenario:	Existing + PP PM
Command:	Default Command
Volume:	Existing + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met (Del / Vol)	Future Met (Del / Vol)
# [illegible] Malcolm Dixon Rd @ Western Site Dw	No / No	[illegible]
# 2 New Connector @ Eastern Dw	No / No	[illegible]
# [illegible] Green Valley Rd @ Site Acess Dw	No / No	[illegible]

Peak Hour Delay Signal Warrant Report

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1	0	0	0	0	0	0	0	1	0	0	1	0	0
Initial Vol:	2	0	0	0	0	0	0	15	4	0	15	0
ApproachDel:	8.7			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound]{lanes=1}{control=Stop Sign}
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=1][total volume=36]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1	0	0	0	0	0	0	0	1	0	0	1	0	0
Initial Vol:	2	0	0	0	0	0	0	15	4	0	15	0

Major Street Volume: 34
Minor Approach Volume: 2
Minor Approach Volume Threshold: 1131

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1! 0 0	0 0 1 0 0	0 0 0 0 1	1 0 0 0 0
Initial Vol:	29 46 2	0 45 0	0 0 17	1 0 0
ApproachDel:	9.3	8.3	xxxxxx	xxxxxx

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=77]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=140]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=45]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=140]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 1! 0 0	0 0 1 0 0	0 0 0 0 1	1 0 0 0 0
Initial Vol:	29 46 2	0 45 0	0 0 17	1 0 0

Major Street Volume: 18
Minor Approach Volume: 77
Minor Approach Volume Threshold: 1291

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #5 Green Valley Rd & Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 0 0 0	0 1! 0 0	1 2 1 0 0	0 0 0 1 0
Initial Vol:	0 0 0	15 0 48	59 678 0	0 349 16
ApproachDel:	xxxxxx	16.1	xxxxxx	xxxxxx

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=63]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1067]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #5 Green Valley Rd & Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 0 0 0	0 1! 0 0	1 2 1 0 0	0 0 0 1 0
Initial Vol:	0 0 0	15 0 48	59 678 0	0 349 16

Major Street Volume: 1144
Minor Approach Volume: 63
Minor Approach Volume Threshold: 198

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Scenario Report

Scenario:	EPAP + PP AM
Command:	Default Command
Volume:	EPAP + PP AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]		Future Met [Del / Vol]
# 1 Malcolm Dixon Rd @ Western Site Dw	No	No	[illegible]
# 2 New Connector @ Eastern Dw	No	No	[illegible]
# 3 Green Valley Rd @ Site Access Dw	No	No	[illegible]

Peak Hour Delay Signal Warrant Report

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Initial Vol:	4		0		0	0		9		0	0		6		1	0		20		0
ApproachDel:	8.6					xxxxxx					xxxxxx					xxxxxx				

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=3]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=30]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report (Urban)

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Initial Vol:	4		0		0	0		9		0	0		6		1	0		20		0

Major Street Volume: 27
Minor Approach Volume: 4
Minor Approach Volume Threshold: 1183

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #2 New Connector & Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	1	0	0	1	0	0	1	0	0	1	0
Initial Vol:	10	28	0	0	50	0	0	0	29	2	0	0
ApproachDel:	9.1			8.4			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=38]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=118]
FAIL - Total volume less than 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=118]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 New Connector & Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	1	0	0	1	0	0	1	0	0	1	0
Initial Vol:	10	28	0	0	50	0	0	0	29	2	0	0

Major Street Volume: 78
Minor Approach Volume: 50
Minor Approach Volume Threshold: 1.55

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the respons ble jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #3 Green Valley Rd @ Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	1	0	0	0	0	0	1	0
Initial Vol:	0		0		0	12		0		16	32		442		0	0		921		16
ApproachDel:	xxxxxx					23.1					xxxxxx					xxxxxx				

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=80]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1481]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Volume Signal Warrant Report (Urban)

Intersection #3 Green Valley Rd @ Site Acess Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	1	0	0	0	0	0	1	0
Initial Vol:	0		0		0	12		0		16	32		442		0	0		921		16

Major Street Volume: 1481
Minor Approach Volume: 60
Minor Approach Volume Threshold: 149

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Scenario Report

Scenario:	EPAP + PP PM
Command:	Default Command
Volume:	EPAP + PP PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Signal Warrant Summary Report

Intersection	Base Met (Del / Vol)	Future Met Del / Vol
# 1 Malcolm Dixon Rd @ Western Site Dw	No / No	212 / 233
# 2 New Connector @ Eastern Dw	No / No	222 / 222
# 3 Green Valley Rd @ Site Access Dw	No / No	242 / 242

Peak Hour Delay Signal Warrant Report

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1	0	0	0	0	0	0	1	0	0	1	0
Initial Vol:	2	0	0	0	0	0	0	17	4	0	17	0
ApproachDel:	8.7			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=2]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=40]
FAIL - Total volume less than 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #1 Malcolm Dixon Rd @ Western Site Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	1	0	0	0	0	0	0	1	0	0	1	0
Initial Vol:	2	0	0	0	0	0	0	17	4	0	17	0

Major Street Volume: 22
Minor Approach Volume: 2
Minor Approach Volume Threshold: 40%

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Peak Hour Delay Signal Warrant Report

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	1! 0	0	0	1 0 0	0	0	0 0 1	1	0	0 0 0
Initial Vol:	29	50	2	0	50	0	0	0	17	1	0	0
ApproachDel:		9.3			9.3			xxxxxx			xxxxxx	

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=81]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=149]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=50]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=149]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #2 New Connector @ Eastern Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	1! 0	0	0	1 0 0	0	0	0 0 1	1	0	0 0 0
Initial Vol:	29	50	2	0	50	0	0	0	17	1	0	0

Major Street Volume: 149
Minor Approach Volume: 81
Minor Approach Volume Threshold: 1291

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Delay Signal Warrant Report

Intersection #2 Green Valley Rd & Site Access Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 0 0 0	0 1! 0 0	1 0 1 0 0	0 0 1 0 0
Initial Vol:	0 0 0	1x 6 7x	62 954 0	0 401 19
ApproachVol:	xxxxxx	14.x	xxxxxx	xxxxxx

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=66]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1594]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #2 Green Valley Rd & Site Access Dw

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Lanes:	0 0 0 0 0	0 1! 0 0	1 0 1 0 0	0 0 1 0 0
Initial Vol:	0 0 0	1x 6 7x	62 954 0	0 401 19

Major Street Volume: 1594
Minor Approach Volume: 66
Minor Approach Volume Thresh...: 160

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

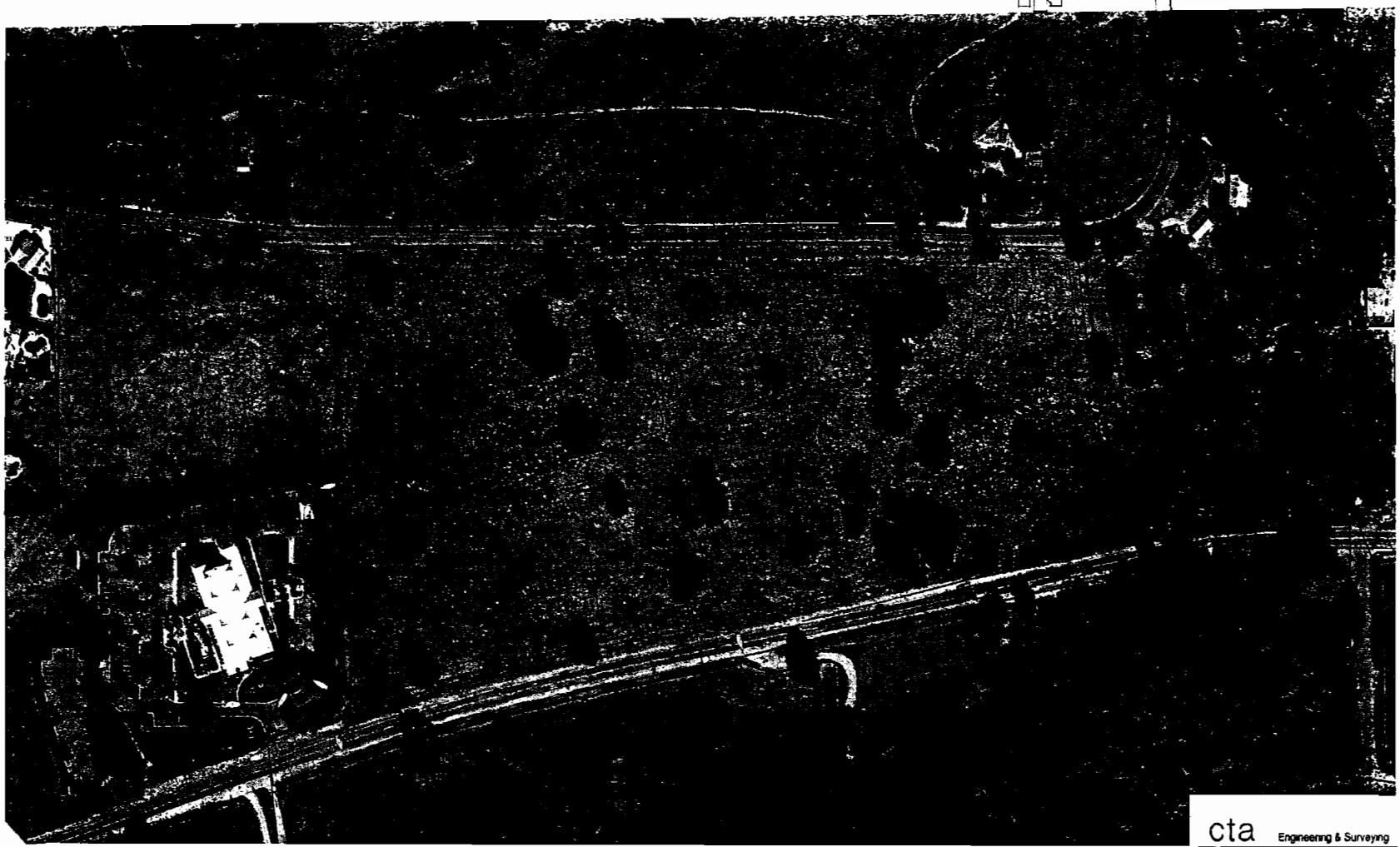
The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

WILSON ESTATES

REVISED TENTATIVE MAP EXHIBIT ALT A

EL DORADO HILLS, CALIFORNIA

SCALE: 1"=60' MARCH 2012



ATTACHMENT F

cta Engineering & Surveying

Civil Engineering Land Surveying Land Planning

El Dorado Irrigation District

In Reply Refer To: FIL0912-015

September 14, 2012

VIA FIRST-CLASS MAIL

Ann Ryan Wilson Revocable Trust
c/o John Vogelsang
4101 Greenview Drive
El Dorado Hills, CA 95762

SUBJECT: Facility Improvement Letter (FIL), Wilson Estates
Assessor's Parcel No. 126-070-22, 23 & 30 (El Dorado Hills)
EDC Project No: TM11-1504

Dear Mr. Vogelsang:

This letter is in response to your request dated August 2, 2012. This letter is valid for a period of three years. If a Facility Plan Report (FPR) for your project has not been submitted to the District within three years of the date of this letter, a new Facility Improvement Letter 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 project is an 49-lot residential subdivision on 28.18 acres. Water service, sewer service, and fire hydrants are requested. The property is within the District boundary. 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.

Assessment District No. 3

Assessment District No. 3 (AD3) was established to provide water and sewer facilities to serve the El Dorado Hills area. Parcels 126-070-22 and 126-070-23 are in AD3 and currently have an allotment of 2 equivalent dwelling units (EDUs) of water and sewer service.

Water Supply

In terms of water supply, as of January 1, 2012, there were approximately 4,752 equivalent dwelling units (EDUs) available in the El Dorado Hills Water Supply Region. Your project as proposed on this date would require a total of 50 EDUs of water supply.

Water Facilities

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. According to the District's hydraulic model, the existing system can deliver the required fire flow. In order to receive service, you must construct a water line extension connecting to the existing 12-inch water line in Green Valley Road (see enclosed system map). The hydraulic grade line for the existing water distribution facilities is 960 feet above mean sea level at static conditions and 926 feet above mean sea level during fire flow and maximum day demands.

The flow predicted above was developed using a computer model and is not an actual field flow test.

Sewer Facilities

A 6-inch gravity sewer line located at the intersection of Green Valley Road and Allegheny Road. This sewer line has adequate capacity at this time. In order to receive service from this line, an extension of facilities of adequate size must be constructed. Your project as proposed on this date would require 49 EDUs of sewer service.

Facility Plan Report

An FPR will be required for this project. The FPR shall address the expansion of the water and sewer facilities, and the specific fire flow requirements for all phases of the project. A meeting to discuss the content of the report is optional. Please contact this office to arrange the meeting. A preliminary utility plan prepared by your engineer must be brought to the meeting.

Two copies of the FPR will be required along with a $2,000.00 deposit. You will be billed for actual time spent in review and processing of your FPR. Please submit the FPR and fee to our Customer and Development Services Department. Enclosed is the FPR description and transmittal form for your use. The items listed under content in the description and the completed transmittal form must be bound in each copy of the FPR.

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 sewer 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 sewer 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 sewer improvement plans, whether onsite or offsite. In addition, due to either nonexistent or prescriptive easements for some older facilities, any existing onsite 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 offsite and onsite 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 sewer 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.

Summary

Service to this proposed development is contingent upon the following:

- 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 a Facility Plan Report by the District
- Executed grant documents for all required easements
- Approval of facility improvement plans by the District
- Construction by the developer of all onsite and offsite proposed water and sewer facilities
- Acceptance of these facilities by the District
- Payment of all District connection costs

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 Marc Mackay at (530) 642-4135.

Sincerely,

EL DORADO IRRIGATION DISTRICT

Elizabeth D. Wells

Elizabeth D. Wells, P.E.
Engineering Division Manager

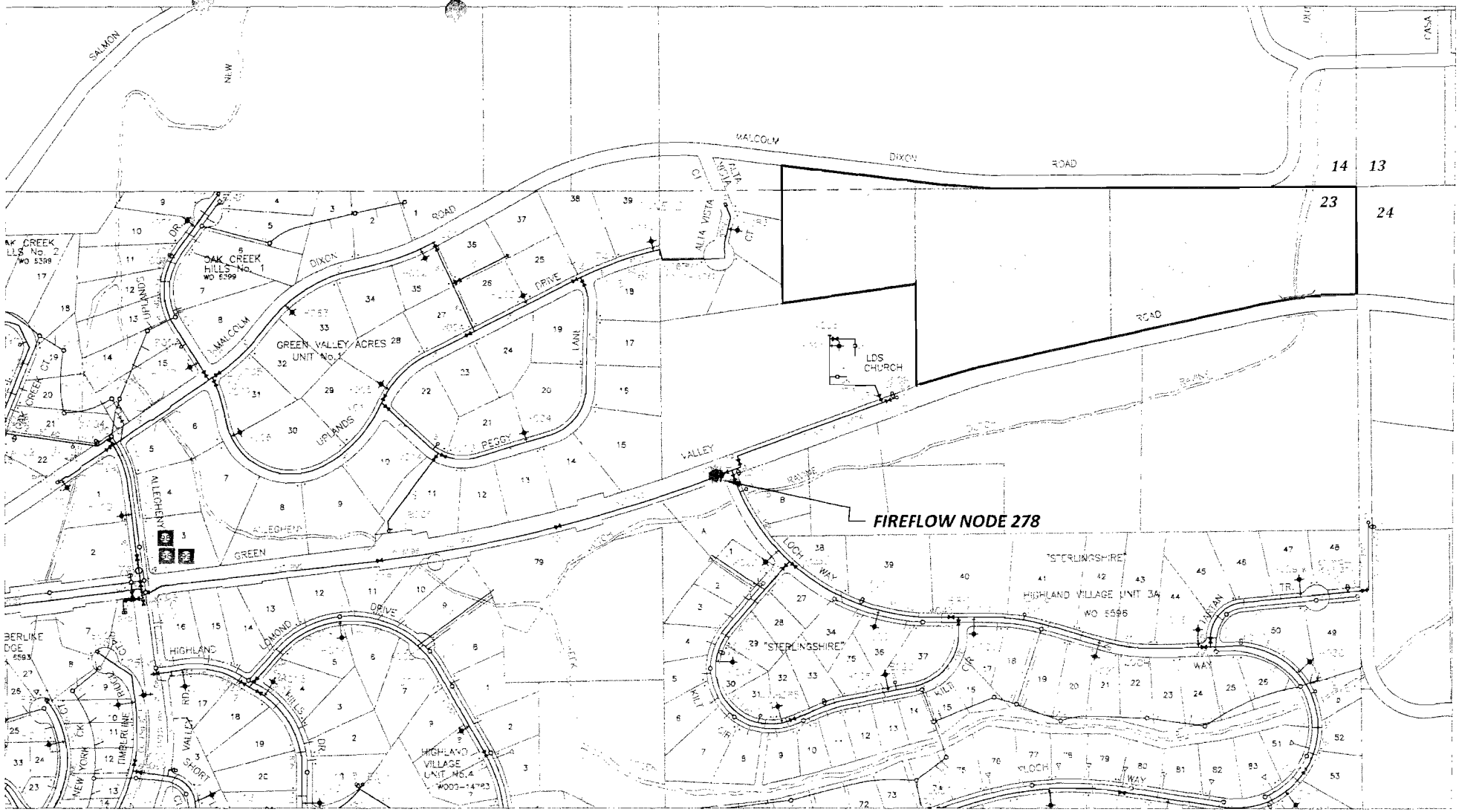
EW/MM:lk

Enclosures: System Map
FPR Guidelines and transmittal

cc: w/System Map
Brad Ballenger, Fire Marshal, El Dorado Hills Fire Department
1050 Wilson Blvd, El Dorado Hills, CA 95762

Roger Trout, Director- El Dorado County Development Services Department
2850 Fairlane Court, Placerville, CA 95667

David R. Crosariol, CTA Engineering & Surveying
3233 Monier Circle, Rancho Cordova, CA 95742



El Dorado Irrigation District
System Map

WARNING: For schematic purposes only. Exact pipe location must be field verified.

WATERLINE

SEWERLINE

Scale: 1" = 350'

DATE: September 13,2012

Wilson Estates
APN: 126-070-22,23,30
SYS. No.:61-14&23

WILSON ESTATES

PRELIMINARY ONSITE / OFFSITE SEWER EXHIBIT

EL DORADO HILLS, CA

SCALE 1" = 100'

May 2012

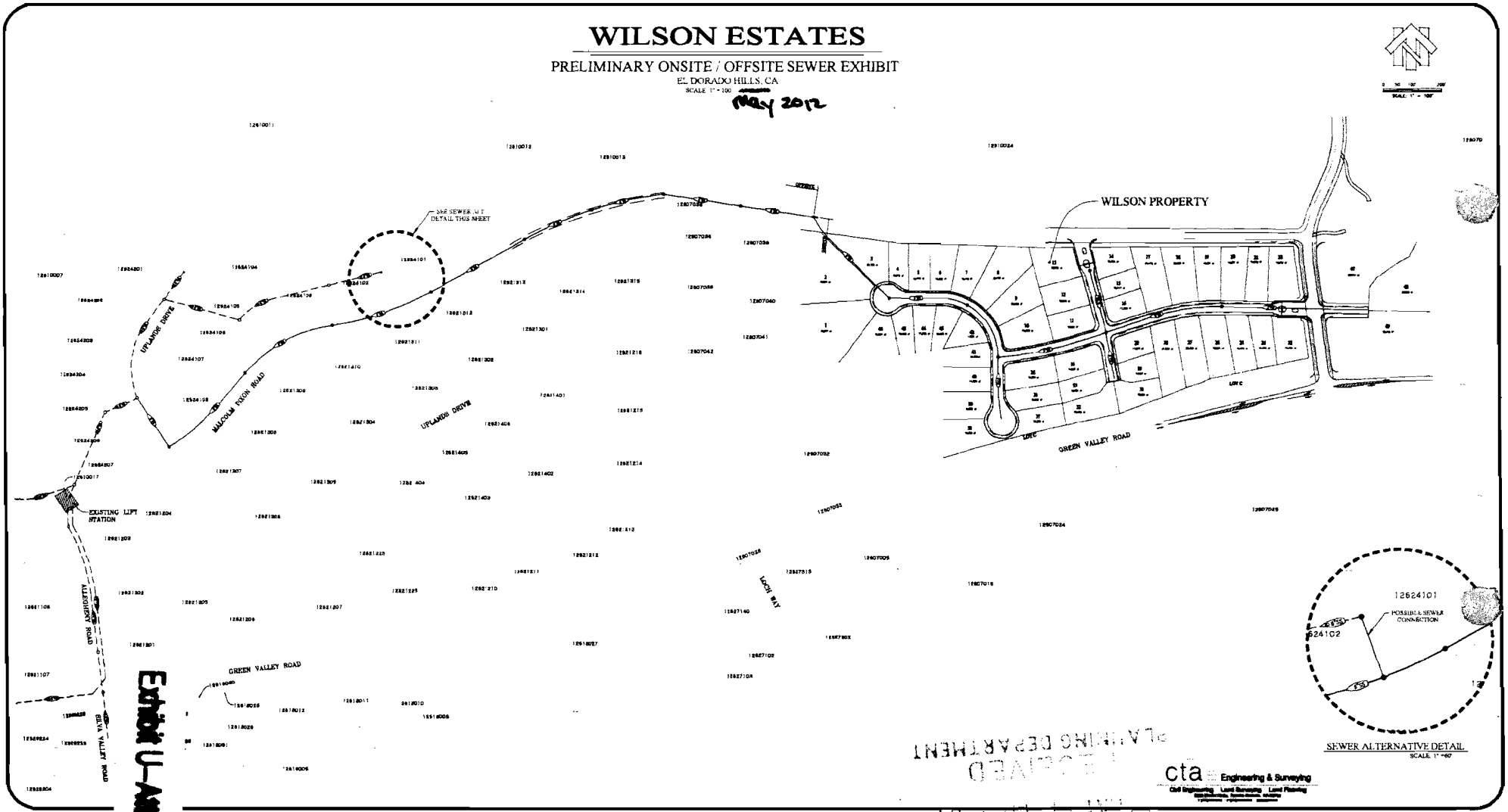


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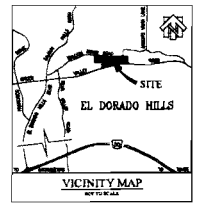
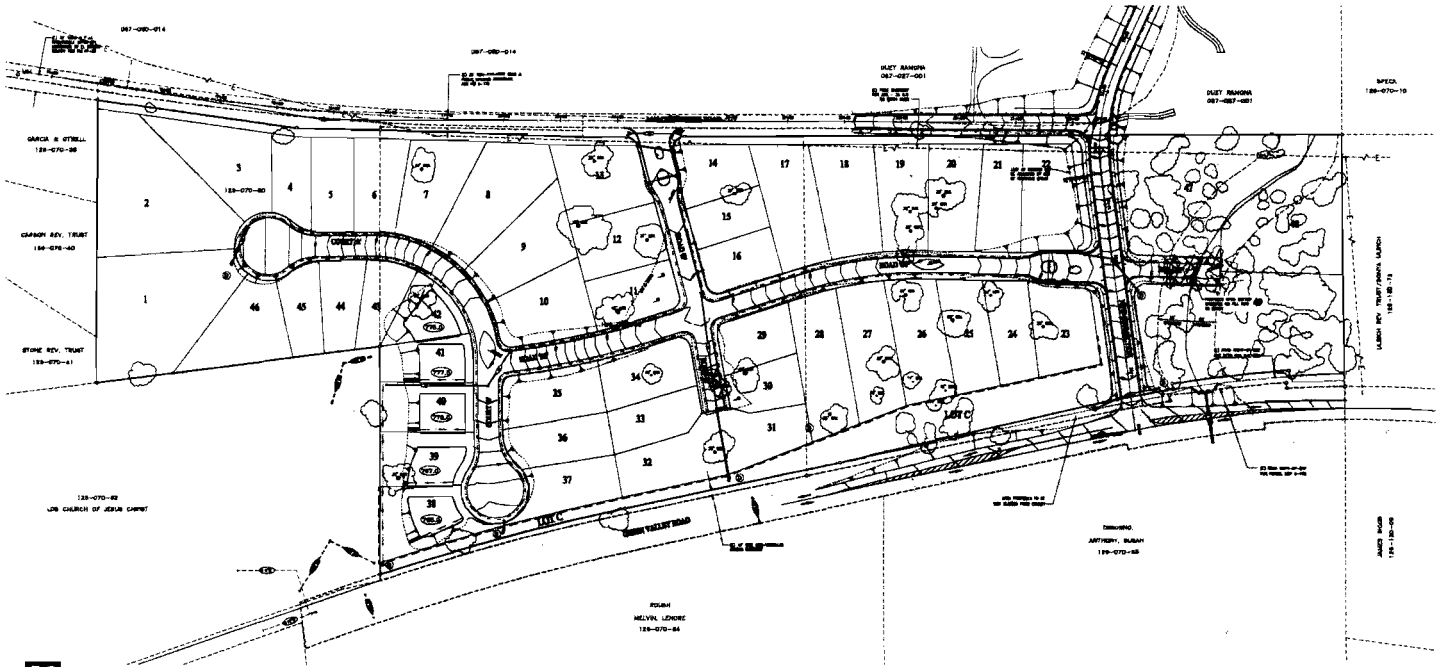
Exhibit U-Attachment 20

PRELIMINARY GRADING, DRAINAGE PLAN & TREE PRESERVATION PLAN

WILSON ESTATES

COUNTY OF EL DORADO MAY, 2012 STATE OF CALIFORNIA





LEGEND

- (P) SUBDIVISION BOUNDARY
- (P) RIGHT OF WAY LINE
- (P) LOT LINE
- EXISTING LOT LINE
- DAYLIGHT LINE
- GRADE BREAK
- AC DIKE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED PAD ELEVATION
- FLARED END SECTION
- STORM DRAIN LINE
- DRAINAGE INLETS
- PROPOSED DRAINAGE OUTFALL
- (P) RETAINING WALL
- (P) 6' NOISE BARRIER
- (P) DRAINAGE DITCH
- (P) TREE REMOVAL

EARTHWORK

APPROXIMATE C.Y.	10,700 CY
APPROXIMATE FILL	10,700 CY

TREE PRESERVATION PLAN

TOTAL (E) CANOPY	2.90 Ac
10% REMOVAL ALLOWED	1.29 Ac
(P) CANOPY REMOVAL AS SHOWN	0.20 Ac
REMAINING ALLOWABLE CANOPY REMOVAL	0.99 Ac

DRAINAGE CALCULATIONS

	PRE-DEV			POST-DEV		
	Ac	10	100	Ac	10	100
SHED A	7.26	15.2.1	256.2	228	151	256
SHED B	5.4	7.3	12.3	5.9	8	13.3
SHED C	6.4	7.3	12.2	5.2	7.1	11.7
SHED D	11.6	15	20.4	7.8	10.2	16.7

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Exhibit U-Attachment 21

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