



DRAFT ENVIRONMENTAL IMPACT REPORT FOR

CREEKSIDE ESTATES

Butte County, California

TSM18-0001

May 7, 2021

PREPARED FOR

BUTTE COUNTY DEPARTMENT OF DEVELOPMENT SERVICES

7 County Center Drive
Oroville, CA 95965

PREPARED BY

ECO-ANALYSTS

20 Landing Circle, Suite 200
Chico, CA 95973
Phone (530) 342-5991

EXECUTIVE SUMMARY

This document, Creekside Estates Focused Environmental Impact Report (EIR), has been prepared in accordance with the California Environmental Quality Act of 1970, Pub. Res. Code §§ 21000-21178, as amended (CEQA), and the Guidelines for Implementation of the California Environmental Quality Act, Cal. Code Regs. Title 14, §§ 15000-15387 (CEQA Guidelines). The County of Butte is the Lead Agency for environmental review of the project and will be the primary agency responsible for its approval.

A Public Draft Initial Study was prepared and originally finalized on September 10, 2012 for the prior Durham Villas proposal for this site. The Butte County Planning Division recommended preparation of an EIR focused on the following areas: Agricultural Resources/Agricultural Conversion, Air Quality and Greenhouse Gases, Hydrological Hazards, Land Use and Planning Zoning Changes, Public Services/Domestic Water Supply and Transportation and Traffic.

The project was revised in 2018, after several local public meetings, to a single family 1 acre lot subdivision on approximately 49 acres of diseased almond orchard. The project incorporates a number of mitigations from the prior proposal to minimize environmental impacts in the areas of Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology, Land Use, Noise, Traffic and Transportation Systems, and Utilities and Service Systems that were developed as part of the draft Initial Study.

Alternative scenarios analyzed in the EIR include: Alternative 1 - PUD Senior Housing development, with commercial and community services, as described in the 2012 Initial Study; Alternative 2 - 5-acre parcels for a total of 9 parcels; and Alternative 3 - No Project. Although the No Project Alternative had the fewest adverse impacts, the proposed project implements the land use policies of the 2030 General Plan. Net groundwater usage and production of greenhouse gases will be less with implementation of the proposed project than under current conditions. The project will also lead to improvements in the water provision system of the Durham Irrigation District.

POTENTIALLY SIGNIFICANT EFFECTS WITH MITIGATIONS

Potentially significant adverse impacts were found by the draft Initial Study of 2019 in the areas of Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology, Land Use, Noise, Traffic and Transportation Systems, and Utilities and Service Systems. Mitigation measures were developed that, when implemented, should reduce the impacts to a level that is less than significant and are provided in Section 7: Mitigation Monitoring Plan of this EIR.

UNAVOIDABLE SIGNIFICANT EFFECTS

This EIR analysis identified unavoidable significant effects in the areas of Agricultural Resources and Vehicle Miles Traveled.

AREAS OF KNOWN CONTROVERSY

Opposition to the original proposal was expressed during community hearings on the draft Initial Study by residents of Durham, who oppose development in this rural community. Some local farmers have expressed concerns about the loss of farmland occurring in Durham and elsewhere. Thirteen letters were received in opposition, and two supporting the current project at the NOP stage. Several commented on the project and did not list specific environmental concerns. Environmental issues of concern were traffic, loss of agricultural land, and overcrowding at the elementary school. Comments were received from the Butte County Sheriff, Superintendent of the Durham School District, and the Durham Irrigation District. State agencies responding included the Regional Water Quality Control Board, CalTrans, and the Native American Heritage Commission.

Comparison of Project Alternative Impacts to Significant Proposed Project Impacts versus Proposed Project

Impact Category	Alternative 1: PUD Senior Housing	Alternative 2: 5 acre lots	Alternative 3: No Project
Agricultural Resources: Agricultural Conversion	Greater	Less	Less
Air quality and Greenhouse Gases	Greater	Less	Less
Hydrology and Water Quality: Flood Hazard Potential	Similar	Less	Less
Public Services: Domestic Water Supply	Greater	Less	Less
Transportation and Traffic: Traffic Safety	Greater	Less	Less

The above table identifies the impacts of the proposed project alternatives versus the proposed project in relation to the areas of potentially significant impacts. A “greater” impact identifies the alternative would have more impacts, a “similar” impact would the same impacts and a “less” impact identifies it would generate less impacts than the proposed project.

SUMMARY OF SIGNIFICANT IMPACTS

SIGNIFICANT AND UNAVOIDABLE IMPACTS			
Project-Level Impacts			
Traffic and Circulation			
Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Vehicle Miles Traveled (VMT)	Project would exceed the level of threshold for VMT.	None	Overriding Findings
Project-Level Impacts			
Agricultural Resources			
Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Loss of Agricultural Land	Project would remove productive agricultural land	None	Overriding Findings

SIGNIFICANT AVOIDABLE IMPACTS**Project-Level Impacts****Air Quality& Greenhouse Gases**

Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Construction Fugitive Dust	Construction activities would result in increased dust fall and locally elevated levels of particulates downwind of construction activity	Mitigation Measure Air-1: proper maintenance of equipment, employ 1996 or newer diesel engines; soil wetting prior to earth moving and on disturbed areas a minimum of 2 times per day; trucks transporting soil shall be covered; speed limits to minimize dust, parking in designated areas;	Less than Significant Impact after Implementation of Mitigation Measure Air-1

SIGNIFICANT AVOIDABLE IMPACTS**Project-Level Impacts****Biological Resources**

Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Migratory and Nesting Birds	Disturbance during breeding and nesting season	BIO-1: Require a nesting survey if construction occurs during breeded/nesting season.	Will reduce impact to less than significant
Swainson's Hawk	Disturbance during breeding and nesting season	BIO-2: Require a nesting survey if construction occurs during breeded/nesting season.	Will reduce impact to less than significant

SIGNIFICANT AVOIDABLE IMPACTS**Project-Level Impacts****Hydrology & Water Quality**

Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Flood Hazard Risk to Homes or Structures	Project would result in placement of homes or structures into a flood hazard zone (at risk of 100-year flood)		Area for houses to be built up to county standards, reduce impact to less than significant.
Risk of entry excavated soil and other materials into flood flow	Stockpiling of soil and other excavated material present a hazard in the event a flood occurs.	Mitigation Measure Hyd-2: on-site storage of excavated material limited to the dry season only (April 15- Oct 15). Mitigation Measure Hyd-3: Excess material excavated during construction must be transported offsite and outside flood zone.	Implementation of Mitigation Measures Hyd-2 and Hyd-3 would reduce the hazard potential of storing excavated materials onsite to less than significant.

SIGNIFICANT AND AVOIDABLE IMPACTS

Project-Level Impacts

Transportation & Traffic

Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Increased traffic hazards	The project may increase incompatible uses of the roadways, i.e., residential traffic and farm equipment. The project may increase numbers of children walking to local schools or increase bus stops along roadways.	<p>Mitigation Measure</p> <p>TT-1: Areas within the line of sight along Durham- Dayton Highway, which extends 25 feet south of the edge of the pavement, must be kept clear of vegetation, signage, and other obstacles to maintain the adequate sight distance.</p> <p>TT-2: Signage shall indicate turning farm equipment and road shoulder design should provide wide soft areas that does not restrict ability of farm vehicles to pull over.</p> <p>TT- 3: Indicate Safe School Routes and Bus Stops through Signage.</p>	Implementation of Mitigation Measures TT-1, TT-2 and TT-3 will reduce potential for increased traffic hazards to less than significant.

SIGNIFICANT AND AVOIDABLE IMPACTS**Cumulative-Level
Impacts****Air Quality& Greenhouse Gases**

Impact No.	Impact	Mitigation	Conclusion & Mitigation Effectiveness
Project Greenhouse Gas Emissions	Increase greenhouse gas production from increased local vehicle traffic as result of development	Mitigation Measure GCC-1: project shall utilize recycled- content construction materials, promote groundwater recharge, design for use of neighborhood electric vehicles, comply with Green Building Standards, meet green planning standards, maximize energy efficient and meet energy conservation guidelines; limit vehicle idling to 3 min or less.	Implementation of Mitigation Measure GCC-1 would result in less than considerable net increase in criteria air pollutants and greenhouse gases.

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	SCOPE OF THE ENVIRONMENTAL ASSESSMENT	1
1.1.1	<i>Impacts Not Found to be Significant</i>	1
1.1.2	<i>Potentially Significant Impacts</i>	8
1.1.3	<i>Potential Areas of Controversy</i>	8
1.2	LEAD, RESPONSIBLE AND TRUSTEE AGENCIES	8
1.3	ENVIRONMENTAL REVIEW PROCESS	8
1.3.1	<i>Notice of Preparation</i>	8
2	PROJECT DESCRIPTION	9
2.1	LOCATION	9
2.2	OBJECTIVES	11
2.3	PROJECT CHARACTERISTICS	11
2.4	INTENDED USES OF THE EIR	19
2.5	REQUIRED PERMITS, PLANS AND CONDITIONS	19
3	ENVIRONMENTAL SETTING	20
3.1	REGIONAL SETTING	20
3.2	LOCAL SETTING	20
4	PROJECT ALTERNATIVES	21
4.1	ALTERNATIVE 1: PROJECT AS DESCRIBED IN THE 2011 INITIAL STUDY	21
4.2	ALTERNATIVE 2: DEVELOPMENT WITH 5-ACRE PARCELS	21
4.3	ALTERNATIVE 3: NO PROJECT	22
5	AREAS OF POTENTIAL ENVIRONMENTAL IMPACT	23
5.1	AGRICULTURAL RESOURCES: AGRICULTURAL CONVERSION	23
5.1.1	<i>Introduction</i>	23
5.1.2	<i>Environmental Setting</i>	23
5.1.2.1	Durham Core Area and Urban Reserve	23
5.1.3	<i>Regulatory Setting</i>	24
5.1.3.1	Federal Regulations	24
5.1.3.2	State Regulations	25
5.1.3.3	Local Regulations	25
5.1.4	<i>Standards of Significance</i>	27
5.1.5	<i>Methods of Analysis</i>	28
5.1.6	<i>Impacts and Mitigation Measures</i>	28
5.1.6.1	Assessment of Significance Standards	28
5.1.6.2	Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans ...	29
5.1.6.3	Significant Environmental Effects of the Proposed Project	29
5.1.6.4	Significant Environmental Effects That Cannot be Avoided with the Proposed Project	29
5.1.6.5	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	30

5.1.6.6	Growth-Inducing Impacts of the Proposed Project.....	30
5.1.6.7	Cumulative Impacts	30
5.2	AIR QUALITY AND GREENHOUSE GASES.....	31
5.2.1	<i>Introduction</i>	31
5.2.2	<i>Environmental Setting</i>	31
5.2.2.1	Climate and Topography	31
5.2.2.2	Local Ambient Air Quality	31
5.2.3	<i>Regulatory Setting</i>	34
5.2.3.1	Federal Regulations.....	35
5.2.3.2	State Regulations	35
5.2.3.3	Local Regulations	35
5.2.4	<i>Standards of Significance</i>	38
5.2.5	<i>Methods of Analysis</i>	38
5.2.6	<i>Impacts and Mitigation Measures</i>	38
5.2.6.1	Assessment of Significance Standards	38
5.2.6.2	Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans ...	45
5.2.6.3	Significant Environmental Effects of the Proposed Project.....	46
5.2.6.4	Significant Environmental Effects That Cannot be Avoided with the Proposed Project	46
5.2.6.5	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	46
5.2.6.6	Growth-Inducing Impacts of the Proposed Project.....	47
5.2.6.7	Cumulative Impacts	47
5.3	HYDROLOGY AND WATER QUALITY: FLOOD HAZARD POTENTIAL	47
5.3.1	<i>Introduction</i>	47
5.3.2	<i>Environmental Setting</i>	48
5.3.3	<i>Regulatory Setting</i>	50
5.3.3.1	Federal Regulations.....	50
5.3.3.2	State Regulations	51
5.3.3.3	Local Regulations	51
5.3.4	<i>Standards of Significance</i>	54
5.3.5	<i>Methods of Analysis</i>	55
5.3.6	<i>Impacts and Mitigation Measures</i>	55
5.3.6.1	Assessment of Significance Standards	55
5.3.6.2	Significant Environmental Effects of the Proposed Project.....	60
5.3.6.3	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	61
5.3.6.4	Growth-Inducing Impacts of the Proposed Project.....	61
5.3.6.5	Cumulative Impacts	61
5.4	LAND USE AND LAND PLANNING: ZONING & AGRICULTURAL CONVERSION	61
5.4.1	<i>Introduction</i>	61
5.4.2	<i>Environmental Setting</i>	61
5.4.3	<i>Regulatory Setting</i>	62
5.4.3.1	Federal Regulations.....	62
5.4.3.2	State Regulations	62
5.4.3.3	Local Regulations	64
5.4.4	<i>Standards of Significance</i>	66
5.4.5	<i>Methods of Analysis</i>	66
5.4.6	<i>Impacts and Mitigation Measures</i>	66
5.4.6.1	Assessment of Significance Standards	66

5.4.6.2	Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans ...	67
5.4.6.3	Significant Environmental Effects of the Proposed Project.....	72
5.4.6.4	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	72
5.4.6.5	Growth-Inducing Impacts of the Proposed Project.....	72
5.4.6.6	Cumulative Impacts	72
5.5	PUBLIC SERVICES: DOMESTIC WATER SUPPLY	73
5.5.1	<i>Introduction</i>	73
5.5.1.1	Domestic Water	73
5.5.1.2	Wastewater/Septic	73
5.5.1.3	Stormwater	Error! Bookmark not defined. 73
5.5.2	<i>Environmental Setting</i>	73
5.5.2.1	Butte Basin	74
5.5.2.2	Durham Dayton Sub-Inventory Unit of the Butte Basin.....	74
5.5.2.3	Water-bearing Properties	74
5.5.2.4	Water Supply Reliability/Sustainability	74
5.5.2.5	Water Quality.....	76
5.5.3	REGULATORY SETTING	76
5.5.2.1	Federal Regulations.....	76
5.5.2.2	State Regulations	77
5.5.2.3	Local Regulations	79
5.5.3	<i>Standards of significance</i>	80
5.5.4	<i>Methods of Analysis</i>	81
5.5.5	<i>Impacts</i>	81
5.5.5.1	Existing Orchard Demand versus Project Demand	81
5.5.5.2	Assessment Relative to CEQA Standards	82
5.5.5.3	Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans ...	83
5.5.5.4	Significant Environmental Effects of the Proposed Project.....	86
5.5.5.5	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	86
5.5.5.6	Growth-Inducing Impacts of the Proposed Project.....	86
5.5.5.7	Cumulative Impacts	86
5.6	TRANSPORTATION AND TRAFFIC: TRAFFIC SAFETY	87
5.6.1	<i>Introduction</i>	87
5.6.2	<i>Environmental Setting</i>	87
5.6.2.1	Study Area.....	87
5.6.2.2	Vehicle Miles Traveled (VMT)	Error! Bookmark not defined.
5.6.2.3	Roadways.....	92
5.6.2.4	Intersections	93
5.6.2.5	Freeways.....	95
5.6.2.6	Public Transportation Systems.....	95
5.6.2.7	Pedestrian and Bicycle Routes	95
5.6.2.8	Railway Systems.....	96
5.6.3	<i>Regulatory Setting</i>	96
5.6.3.1	Federal Regulations.....	96
5.6.3.2	State Regulations	96
5.6.3.3	Local Regulations	99
5.6.4	<i>Standards of Significance</i>	100
5.6.5	<i>Methods of Analysis</i>	101
5.6.6	<i>Impacts and Mitigation Measures</i>	102

5.6.6.1	Assessment of Significance Standards	102
5.6.6.2	Consistency with Local Goals, Policies, and Objectives.....	104
5.6.6.3	Significant Environmental Effects of the Proposed Project.....	110
5.6.6.4	Significant Environmental Effects That Cannot be avoided with the Proposed Project.....	111
5.6.6.5	Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project	111
5.6.6.6	Growth-Inducing Impacts of the Proposed Project.....	111
5.6.6.7	Cumulative Impacts	111
6	MANDATORY FINDINGS OF SIGNIFICANCE	113
6.1	CUMULATIVE IMPACTS	113
6.2	GROWTH-INDUCING IMPACTS	113
6.3	SIGNIFICANT ENVIRONMENTAL EFFECTS.....	114
6.4	SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS.....	114
7	MITIGATION AND MONITORING PROGRAM.....	115
7.1	MITIGATION MEASURES FROM FOCUSED EIR ANALYSIS	115
8	PERSONS AND ORGANIZATIONS CONTACTED	122
9	EIR PREPARATION PERSONNEL.....	123
10	LIST OF ACRONYMS.....	123

TABLES

TABLE 1. STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS.	32
TABLE 2. AMBIENT AIR QUALITY AT THE EAST AVENUE - CHICO, MONITORING STATION.	33
TABLE 3. THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS OF CONCERN FROM BCAQMD’S CEQA HANDBOOK (2008).	36
TABLE 4. PROJECT CONSTRUCTION EMISSIONS IN POUNDS PER DAY.	39
TABLE 5. REGIONAL EMISSIONS IN POUNDS PER DAY.	43
TABLE 6: GHG EMISSION ANALYSIS- COMPARISON OF PRE- AND POST- PROJECT CONDITIONS.	44
TABLE 7. BICYCLE FACILITY SUMMARY.	91
TABLE 8. BASELINE PLUS PROJECT VMT ANALYSIS.....	102
TABLE 9. COLLISION RATES AT THE STUDY INTERSECTIONS.	103
TABLE 10. FUTURE INTERSECTION LEVELS OF SERVICE FROM CREEKSIDE ESTATES TRAFFIC STUDY.....	112

FIGURES

FIGURE 2-1. VICINITY MAP.	9
FIGURE 2-2. AERIAL VIEW OF PROJECT LOCATION.	10
FIGURE 2-3. CREEKSIDE ESTATES PROJECT DESIGN MAP.	18
FIGURE 5-1. LOCATION OF CREEKSIDE ESTATES PROJECT BOUNDARY RELATIVE TO DURHAM URBAN CORE AND RESERVE.	24
FIGURE 5-2. DAM INUNDATION AREAS IN BUTTE COUNTY. SOURCE: 2030 BUTTE COUNTY GENERAL PLAN.	49
FIGURE 5-3. FEMA FEDERAL INSURANCE RATE MAP (FIRM) DETAIL. SOURCE: FEMA.	50
FIGURE 5-4. GENERAL PLAN ZONING DESIGNATIONS OF CREEKSIDE ESTATES PROPERTY AND ADJACENT PROPERTIES. SOURCE: BUTTE COUNTY PLANNING DIVISION.	63
FIGURE 5-5. LONG-TERM CHANGE IN GROUNDWATER ELEVATION IN DURHAM DAYTON SUB-AREA. SOURCE: BUTTE COUNTY WATER COMMISSION 2004.	75
FIGURE 5-6. BCAG RTP/SCS MODEL TAZ SYSTEM.	89
Figure 5-7. HOME-BASED VMT PER RESIDENT BY JURISDICTION	90
Figure 5-8. VMT METRIC DEFINITIONS AND VISUALIZATION	92
Figure 5-9. LANE CONFIGURATION FROM CREEKSIDE ESTATES TRAFFIC STUDY BY W-TRANS	94

APPENDICES

APPENDIX A: REFERENCES

APPENDIX B: INITIAL STUDY

APPENDIX C: AIR QUALITY & GREENHOUSE GASES EMISSIONS REPORT

APPENDIX D: TRAFFIC IMPACT STUDY

APPENDIX E: GROUNDWATER USAGE ANALYSIS

APPENDIX F: TENTATIVE SITE PLAN

APPENDIX G: CONCEPTUAL STORM DRAIN PLAN

APPENDIX H: FLOOD HAZARD MAP

APPENDIX I: AGRICULTURAL MAINTENANCE PLAN

APPENDIX J: AERIAL PHOTOGRAPHS OF PROJECT SITE — *ARMILLARIA* INFECTION

1 INTRODUCTION

This document, the Creekside Estates Focused Environmental Impact Report (EIR), has been prepared in accordance with the California Environmental Quality Act of 1970, Pub. Res. Code §§ 21000-21178, as amended (CEQA) and the Guidelines for Implementation of the California Environmental Quality Act, Cal. Code Regs. Title 14, §§ 15000-15387 (CEQA Guidelines).

A Public Draft Initial Study and Proposed Mitigated Negative Declaration for the Creekside Estates Tentative Subdivision Map TSM 18-0001 was prepared and finalized on August 23, 2019. A Public Hearing to review the Initial Study was held on August 13 2019. The Butte County Planning Division and the Planning Commission recommended preparation of an Environmental Impact Report due to public concerns and questions about information regarding certain aspects of the project design and potential for environmental impacts.

1.1 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The scope of the environmental assessment was determined by the Butte County Planning Division based on their review and public comments on the draft Initial Study. The EIR was focused on the areas of the environment in which there were questions concerning the adequacy of the information presented in the draft Initial Study.

1.1.1 *IMPACTS NOT FOUND TO BE SIGNIFICANT*

Sufficient information was found during the preparation of the Initial Study to determine that there were no adverse impacts in the following areas of the CEQA checklist: Aesthetics, Geologic Processes, Mineral Resources, Population and Housing, Public Services, and Recreation.

Impacts found to be less than significant with the adoption of mitigation measures designed to reduce the impacts, were found in the areas of Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology, Noise, Traffic and Transportation Systems, and Utilities and Service Systems. The following mitigation measures were recommended in the draft Initial Study.

Mitigation Measure AIR-1: Construction Requirements.

Consistent with the guidance from the BCAQMD, the project applicant shall implement the following measures during construction of the project.

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- To the extent feasible, maximize the use of diesel construction equipment meeting the ARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission.
- Haul vehicles transporting soil into or out the property shall be covered.

- A water truck shall be on site at all times. Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- On-site vehicles limited to a speed (15 mph) which minimizes dust emissions on unpaved roads.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with District Rule 200 & 205.
- Vehicles entering or exiting construction areas shall travel at a speed which minimizes dust emissions.
- Construction workers shall park in designated parking areas.
- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s).
- Limit dust producing construction activities during wind events exceeding 15 mph.

Plan Requirements: The Butte County Department of Development Services and Department of Public Works shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. The contractor(s) shall be responsible for implementing the above mitigation conditions.

Timing: Measures a-k, above, shall be enforced through all construction activities. Measure 1, above, shall be enforced over the life of the project.

Monitoring: The Building Division of Butte County Department of Development Services and the inspection staff shall monitor this condition for compliance. Violations of District Rules shall be reported to BCAQMD immediately.

Significance after Mitigation: Implementation of this measure will reduce construction impacts to a level which would not violate air quality standards.

Mitigation Measure BIO-1

If the project will include vegetation removal (including grasses) or earthwork of any kind during the nesting season (February 1 through August 31), CDFW recommends a pre-construction nesting bird survey be conducted by a qualified biologist to identify the absence or presence of active (i.e. with eggs or young) nests. The survey area should include the project site and a minimum 300-foot buffer around the project site. To minimize the chance of nests becoming established between the time the survey is conducted and when construction begins, CDFW recommends the preconstruction survey be conducted no more than three (3) days before the start of vegetation removal and/or ground disturbing activities. Please also note that Fish and Game Code section 3503 protects the nests and eggs of all birds, not just migratory birds and birds of prey. If active nests are observed during the pre-construction survey a species-appropriate no-disturbance buffer should be established to protect the active nest. Nesting birds' tolerance of disturbance varies greatly depending on species, intensity of disturbance, whether the

nesting pair is accustomed to disturbance, the location of the nest, the stage of development of nestlings, etc. Disturbance too close to the nest may impact the parents' ability to forage effectively and reduce nestlings' chances of survival. In some cases, disturbance can cause the parents to abandon the nest completely. For these reasons the size of the no-disturbance buffer should be determined by the qualified biologist. CDFW is available to provide comments and feedback on nesting bird avoidance strategies if desired. However, it should be noted that CDFW cannot guarantee that any specific buffer width will be sufficient to completely avoid take in any given situation, and therefore CDFW cannot approve or disapprove specific buffer proposals.

Plan Requirements: Perform protocol-level surveys for migratory birds protected by the California Department Fish & Game Code and the Migratory Bird Treaty Act. This measure shall be recorded on an additional map sheet to the Parcel Map.

Timing: Requirements of the condition shall be adhered to prior to and during construction activities planned to occur during nesting seasons for CDFC and MBTA species (between February 1 and August 31).

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is recorded on an additional map sheet of the Parcel Map. Department of Development Services shall ensure the condition is met at the time of construction activities.

Mitigation Measure BIO-2

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "Any ground disturbance or vegetation removal within the project area should be conducted during the non-breeding season (September 16 through February 28). If construction activities occur during the breeding season (March 1-September 15) then a pre-construction raptor survey will be conducted by a qualified biologist to identify any active Swainson's hawk nests within and in the vicinity of the BSA. The pre-construction survey will take place in accessible areas within a 0.5-mile radius of the area where construction activities would occur. The required survey radius may be reduced on a case-by-case basis if approved by CDFW, but in no case will be less than 500 feet. At least one survey will be conducted no more than one week prior to the initiation of construction. If no active nests are located, no further measures are necessary to avoid impacts to Swainson's hawk nests. If active nests are identified, the following measures will be implemented:

1. A no-disturbance buffer zone will be established around the nest. The width of the buffer will be determined by a qualified biologist in coordination with CDFW. Determination of the required width will consider the distance of the nest from construction activities, existing level of disturbance, etc.
2. A qualified biologist will monitor active nests within 500 feet (or the width of the buffer zone) of construction activities. The first monitoring event will coincide with the initial implementation of construction activities and monitoring will continue at least once a week until the young have fledged. If the biologist determines that construction is disturbing the birds and nest failure is possible, CDFW will be notified immediately. Measures to avoid nest failure will be implemented

in coordination with CDFW and may include halting some or all construction activities until the young have fledged. For monitored nest sites, a monitoring report will be submitted to CDFW within two weeks after termination of monitoring activities.

Plan Requirements: The above referenced mitigation shall be placed on a separate document which is to be recorded concurrently with the final map or an additional map sheet.

Timing: Requirements of the condition shall be adhered to prior to construction activities.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Department of Development Services shall ensure the condition is met at the time of development and during construction activities.

Mitigation Measure CUL-1: Cultural Resource Protection.

Place a note on a separate document, which is to be recorded concurrently with the Final Map or on an additional map sheet and on all building and site development plans, that includes the following:

The project engineer shall create a map of based on the Jensen and Associates 1991 Cultural Resources Report that indicates the area of the prehistoric site of potential historical significance with a 100-foot buffer and labeled "Environmentally Sensitive Area." No ground- disturbing work shall be allowed within this area.

The note shall include the following language: "A qualified archaeological monitor shall be hired and be present to inspect all ground-breaking activities including tree removal. Should grading activities reveal the presence or prehistoric or historic cultural resources (i.e. artifact concentrations, including arrowheads and other stone tools or chipping debris, cans glass, etc.; structural remains; human skeletal remains) work within 50 feet of the find shall immediately cease until a qualified professional archaeologist can be consulted to evaluate the find and implement appropriate mitigation procedures. Should human skeletal remains be encountered, State law requires immediate notification of the County Coroner. Should the County Coroner determine that the remains are in an archaeological context, the Native American Heritage Commission in Sacramento shall be notified immediately, pursuant to State law, to arrange for Native American participation in determining the disposition of any remains." The provisions of this note shall be followed during construction of all subdivision improvements, including land clearing, road construction, utility installation, and building site development.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: This measure shall be implemented during all site development activities involving ground disturbance.

Monitoring: Should cultural resources be discovered, the landowner shall notify the Planning Division and a professional archaeologist. The Planning Division shall coordinate with the developer and

appropriate authorities to avoid damage to cultural resources and determine appropriate action. State law requires the reporting of any human remains.

Significance after Mitigation: Implementation of this measure will reduce construction impacts to a level which would not exceed thresholds of significance for the protection of natural resources.

Mitigation Measure GHG-1: Greenhouse Gases Construction Codes.

The project applicant shall incorporate the following measures into project design and construction:

- Support expansion of renewable energy systems. Prewire all new residential development to support photovoltaic system installation;
- Support efficiency in vehicles and landscaping equipment. Install electrical vehicle outlets on external walls or in garages in all new residential development;
- Install electrical vehicle outlets on external walls or in garages in all new residential development. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minute. Use clean or alternative fuel equipment;
- Construction of the proposed project shall utilize recycled-content construction materials to the extent feasible;
- Project design shall comply with the Green Building Standards adopted by the California Standards Commission at the time of building permit application, including requirements about low- or no-toxicity building materials;
- The project shall meet all appropriate green planning standards; and
- The project design shall maximize energy efficiency and meet the guidelines of the California Energy Star New Homes Program and demonstrate detailed energy conservation measures.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-construction, Construction.

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions are met before a building permit is approved and shall verify compliance through their inspection processes.

Significance after Mitigation: Implementation of this measure will comply with the requirements for reduction of greenhouse gases to the extent feasible.

Mitigation Measure HYD-1: Drainage Plans.

Prior to recordation of the Final Map, a plan for a permanent solution for drainage shall be submitted to and approved by the Department of Public Works. The drainage plans shall detail existing drainage conditions and shall specify how drainage waters shall be detained or retained onsite. If storm drainage facilities serve new public roads, the developer must complete the formation of a County Service Area (CSA), Zone of Benefit within a Permanent Road Division (PRD), or other Department of Public Works approved entity prior to recordation of the Final Map. The formation process will require the developer to fund the service until the beginning of the first fiscal year in which service charges can be collected and agree to an annual maximum service charge to ensure continued operation of the facilities.

Plan Requirements: Submit drainage plans and calculations to the Department of Public Works for review and approval.

Timing: The drainage plan shall be submitted and approved prior to approval of the improvement plans, and the required drainage improvements constructed or bonded for construction prior to recordation of the Final Map.

Monitoring: The Department of Public Works shall ensure that the required plan is submitted and ensure that the drainage improvements are constructed or bonded for construction prior to recordation of the Final Map.

Mitigation Measure NOI-1: Construction Timing and Limitations.

Butte County Code §41A-9(F) allows the following regarding construction noise: Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property or public works project located within one thousand (1,000) feet of residential uses, provided said activities do not take place between the following hours:

- • Sunset to sunrise on weekdays and non-holidays;
- • Friday commencing at 6:00 p.m. through and including 8:00 a.m. on Saturday, as well as not before 8:00 a.m. on holidays;
- • Saturday commencing at 6:00 p.m. through and including 10:00 a.m. on Sunday; and,
- • Sunday after the hour of 6:00 p.m.

Construction activities shall be limited to the times excluding those listed above with no construction activity on Sundays or holidays. The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained. When feasible, existing power sources, such as power poles, or clean fuel generators should be used, rather than temporary power generators. Minimize idling time to 10 minutes.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: The mitigation shall be applicable during all construction activities.

Monitoring: The developer and the construction foreman shall be responsible for ensuring compliance with this mitigation and shall respond to all complaints of noise. The Code of Enforcement Division of the Department of Development Services shall investigate all complaints of excess construction-related noise.

Significance after Mitigation: Implementation of this measure will reduce constructions noise impacts to a level of less than significant.

Mitigation Measure TT-1: Line of Sight Maintenance.

Areas within the line of sight along Durham- Dayton Highway, which extends 25 feet south of the edge of the pavement, must be kept clear of vegetation, signage, and other obstacles to maintain the adequate sight distance.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: Construction, Post-construction.

Monitoring: The Butte County Department of Development Services and Department of Public Works.

Mitigation Measure TT-2: Signage and Shoulder to Minimize Conflicts with Farm Equipment.

Provide signage indicating “turning vehicles” near access points and tractor symbol signage.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-Construction, Construction

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions shall verify compliance through their inspection processes.

Mitigation Measure Util-1: Formation of a Community Services District.

Prior to recording of the Final Map, the project proponent shall, on terms and conditions acceptable to the Butte County Department of Development Services and Butte County Director of Public Works, ensure formation of a Community Service District pursuant to the requirements of Butte Local Agency Formation Commission and the Durham Dayton Nelson Plan Urban Reserve Policy to own, maintain, operate, and inspect the following subdivision improvements and amenities:

- Pedestrian/bike paths; and

- Street lighting

The Board of Supervisors will be and will remain the Board of Directors of the CSD until such time as 50% of the completed residences have been sold to future residents.

Plan Requirements: Formation of a Community Services District.

Timing: Prior to recording of Final Map Project Name: Creekside Estates Subdivision.

Monitoring: Butte County Department of Public Works.

The Project Proponents have modified the project design, wherever possible, to incorporate the mitigations detailed in the draft Initial Study to minimize impacts.

1.1.2 POTENTIALLY SIGNIFICANT IMPACTS

The Butte County Planning Division found that there were potentially significant impacts requiring further analysis in an EIR in the areas of Agricultural Resources, Air Quality and Greenhouse Gas Emissions, Hydrology, Land Use and Planning, Public Services and Transportation and Traffic. These are the areas that are the focus of this EIR.

1.1.3 POTENTIAL AREAS OF CONTROVERSY

Potential areas of controversy is loss of agricultural land and traffic. Many residents of Durham have chosen to live there because of they enjoy the rural nature of the area and dislike development projects in their community that could change that rural character. Many of the local residents are farmers with strong concerns and emotions about the loss of farmland that has been occurring statewide over the past several decades.

1.2 LEAD, RESPONSIBLE AND TRUSTEE AGENCIES

The County of Butte is the Lead Agency for environmental review of the project and will be the primary agency responsible for its approval. California Department of Fish & Wildlife and Caltrans are Trustee Agencies.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 NOTICE OF PREPARATION

A Notice of Preparation for this EIR was prepared and filed with the State Clearinghouse by the Lead Agency (County of Butte) on August 20, 2019 (see Appendix).

2 PROJECT DESCRIPTION

2.1 LOCATION

The project site is located in the northern Sacramento Valley on the eastern side of the unincorporated community of Durham and on the south side of Durham-Dayton Highway (Figures 2.1-2.3) The Sacramento River lies approximately 10 miles to the west, with Butte Creek approximately 0.15 miles east and the Sierra Nevada foothills beginning approximately 5-6 miles to the east. The land is a flat floodplain and dominated by agricultural uses, predominantly almonds, other nut crops, and rice, interspersed with small rural communities and rural residences.

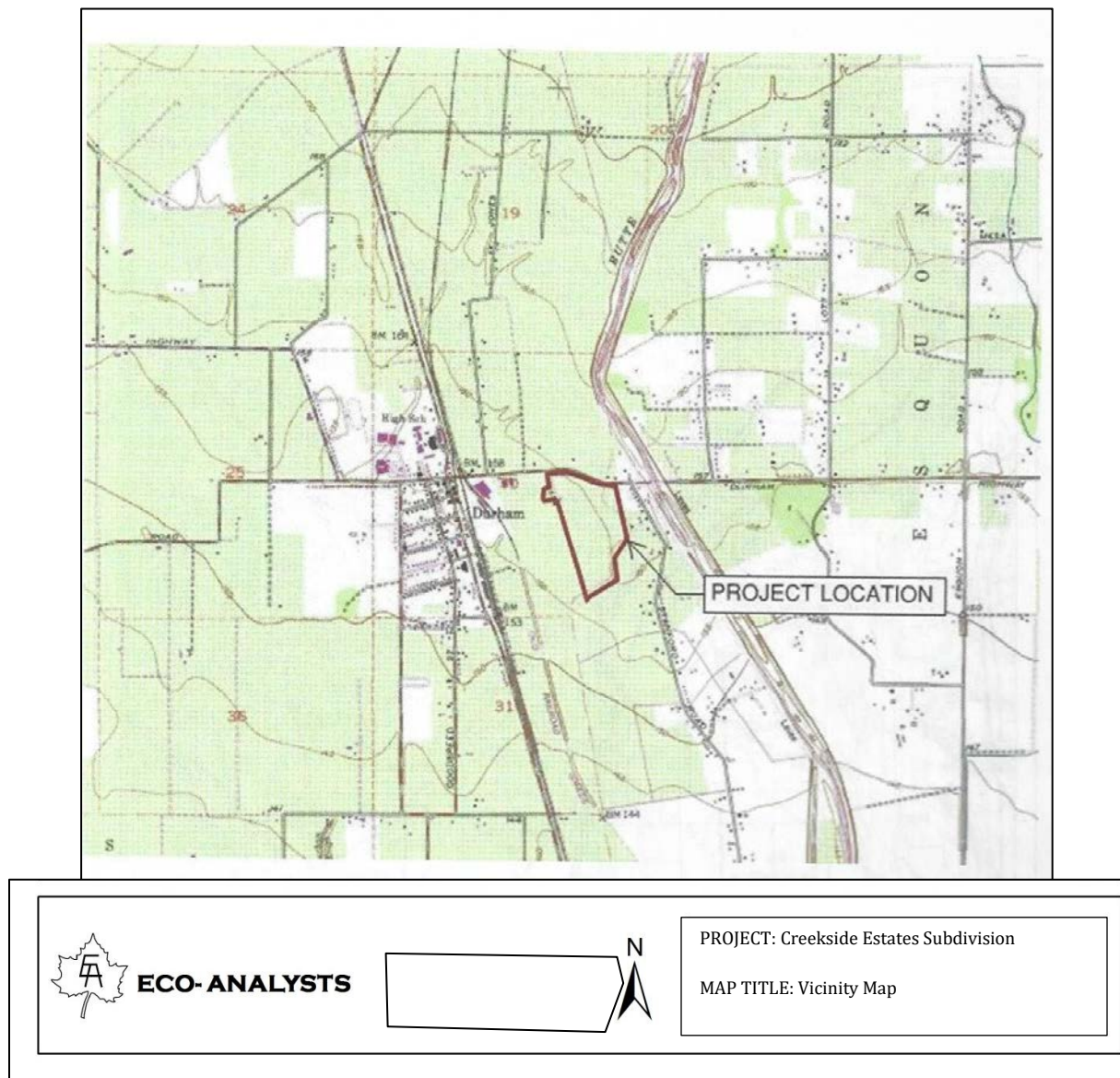


Figure 2-1. Vicinity Map.



Figure 2-2. Aerial View of Project Location.

2.2 OBJECTIVES

The project site consists of a 49-acre parcel with an older almond orchard, the residence of the property owner and associated outbuildings (Figure 2-3). The subdivision of the project site will create a total of 46 single family residential lots, including the one that contains the existing development. The goal is to provide homes for displaced fire victims.

2.3 PROJECT CHARACTERISTICS

The project site is designated Very Low Density Residential in the 2030 Butte County General Plan and is currently zoned VLDR (Very Low Density Residential one-acre minimum parcel size) in the Butte County Zoning Ordinance. The property is adjacent to the “Urban Area” as defined by the Durham Dayton Nelson Community Plan and within the Durham “Urban Reserve” area. The project includes 46, 1+-acre parcels, and a 2.0-acre parcel containing the current owners home and associated outbuildings.

The boundaries of the “Durham Urban Reserve” area were delineated in the 1992 Durham Dayton-Nelson Plan and incorporated into Section I of the Area and Neighborhood Plans Element of the Butte County General Plan 2030. The project complies with the policies adopted for the Durham–Dayton Nelson Planning Area, as outlined below.

Circulation

- Design local residential streets for access to properties and for discouraging through, non-local traffic (Policy D2N-P1.1);
- Minimize conflicts between vehicular, pedestrian and bicycle traffic (Policy D2N-P1.4);
- Restrict residential development from locating adjacent to streets carrying or expected to carry 10,000 vehicle trips per day because of adverse noise levels (Policy D2N-P1.5);
- Encourage new residential subdivisions to implement bicycle and pedestrian facilities in the subdivision design (Policy D2N-P1.11);

The northern boundary of the property on which the project is located abuts the Durham-Dayton Highway for a distance of approximately 1,100 feet. Access to the project will be provided exclusively from Durham-Dayton Highway at a single access point, located in the middle of the project frontage.

The project proposes the following:

- A 5-foot detached sidewalks on the south side of Durham-Dayton Highway along the entire project frontage;
- A 5-foot on-street bike lane on the south side of Durham-Dayton Highway along the entire project frontage;
- A marked crosswalk will be located across the projects entrance road at Durham-Dayton Highway;

- An all-weather pathway shall be provided along the south side of Durham-Dayton Highway from the western end of the proposed sidewalk to the Midway; and
- A bus turnout area shall be reserved along Durham-Dayton Highway for the future use of the B-Line bus system. Transit service will be provided when the demand for transit service is warranted.

The adequacy of sight distances and the need for left-turn lanes on Durham-Dayton Highway were evaluated as part of the project design. Standards for sight distance, provided by the California Department of Transportation (Caltrans) Highway Design Manual, were compared to actual site distances from the proposed access location. Based upon the posted speed limit of 35 mph the applicable sight distance requirement for the project meets Caltrans requirements for sight requirements without the need for tree removal.

Other aspects of the circulation plan include:

- Line of sight improvements to meet public safety;
- No county maintenance costs associated with project roadway improvements; and

A traffic study prepared for the project by the firm of W-Trans indicates that most intersections in the project vicinity currently operate at an acceptable Level of Service (LOS) of C or better. Under future conditions, intersections would operate at an acceptable LOS of D or better. Implementation of the project would increase delay on the Durham-Dayton Highway by a fraction of a second, but LSA Associates found that the project would not generate CO hotspots, or cause the LOS to deteriorate to an unacceptable level which violates any air quality standard, or contribute substantially to an existing or projected air quality violation

VEHICLE MILES TRAVELLED (VMT)

VMT has classically been a part of air quality and greenhouse gas (GHG) impact analysis in EIRs. In its most simple form, VMT is calculated by multiplying vehicle trips by their distance. VMT can be used to estimate fuel consumption and related emissions of air pollutants and GHGs.

In 2013, Senate Bill 743 was adopted, and added section 15064.3 to the CEQA Guidelines. The main change of the law was replacing vehicle Level of Service (LOS) with VMT to determine transportation impacts. Automotive delay, as measured by LOS is no longer considered to be a significant environmental effect under CEQA, but may still be used in determination for roadway improvements consistent with local agency general plan requirements.

In 2018, the State Office of Planning and Research (OPR) produced a *Technical Advisory for Evaluating Transportation Impacts in CEQA* to provide guidance for VMT impact analysis. This guidance was applied for this EIR to determine the specific VMT analysis methodology, thresholds, and mitigation. The resulting impact findings are contained in the transportation section.

ENERGY EFFICIENCY

New homes built to current California energy standards are highly efficient. An analysis of the energy efficiency measures and solar voltaic systems proposed for Creekside Estates indicate that heating and cooling loads would be reduced by a minimum of 30 percent. The design of this subdivision, which maximizes southern exposures and proposes solar photovoltaic systems incorporated into each residential unit, will meet over 95 percent of the average home's electricity requirements.

The project will also incorporate additional measures to increase energy efficiency:

- Incorporation of recycled content materials to the extent feasible;
- Comply with the Green Building standards adopted by the California Standards Commission, including requirements of low-or no-toxicity building materials;
- Construction of storm water facilities, building designs and materials that will promote groundwater recharge;
- Compliance with the guidelines of the California Energy Star New Home Program;
- Provide for the protection of visually appealing features of the community that enhance the residents' perception of the local environment and evoke community pride (Policy D2N-P9.4);
- Extend public services to vacant areas ready for new housing starts by forming improvement districts (Policy D2N-P2.4); and
- Concentrate future residential uses within or near existing developed communities (Policy D2N-P8.1).

Creekside Estates proposes traditional lot parcels that are allowable in VLDR-1.0 zone and consistent with surrounding residential parcel sizes also located zoned VLDR-1.0. A separate parcel will be created for the existing single-family home and associated buildings.

New homes built under the current California energy code (Title 24) in conjunction with increasingly stringent national appliance standards are more energy efficient than homes built in the 1990s and earlier. The California energy code also requires new homes to install solar. With the requirements of the energy efficiency measures and solar photovoltaic systems the project;s energy analysis indicated that heating and cooling loads would be reduced by a minimum of 30 percent. The subdivision's design, which will maximize southern exposures for the solar photovoltaic systems will meet over 95 percent of the average home's annual electricity requirements. In order to assure maximum energy efficiency, the project will incorporate the following components:

- Project construction incorporating recycled-content materials to the greatest extent feasible;

- Compliance with the Green Building Standards adopted by the California Standards Commission at the time of building permit application, including requirements about low-or no-toxicity building materials;
- Construction of storm water facilities, building designs and materials that will promote groundwater recharge;
- Compliance with all appropriate green planning standards;
- Compliance with the guidelines of the California Energy Star New Homes Program and demonstrate detailed energy conservation measures; and
- Provide for the protection of visually appealing features of the community that enhance the residents' perception of the local environment and evoke community pride (Policy D2N-P9.4).

The northern boundary of the project site abuts the Durham-Dayton Highway for a distance of approximately 1,100 feet. An existing row of oak and Black Walnut trees will be retained, and a decorative wall and entry features and walking path will be incorporated along the frontage to aesthetically screen the project from public views from the highway.

A number of other elements have been incorporated into the design of the project to minimize or eliminate potential adverse environmental impacts that might otherwise result from development. These elements include:

- Alignment of roads and improvements to minimize impacts to mature trees on the project site, including several large Valley Oaks and Black Walnuts;
- Avoidance of culturally sensitive areas;
- Establishment of pedestrian/bicycle pathways into and out of the project area to reduce motor vehicle trips and promote community health.

The project site is currently maintained as a mature almond orchard. The portion of the orchard where development will occur is heavily infected with the oak root fungus, *Armillaria mellea*, which has been a recurring problem in this orchard. The oak root fungus on the property has been of long interest to the University of California at Davis because of its virulence. Dr. Beth Teviotdale, Plant Pathologist at Davis, was the first to recognize the virulence of the *Armillaria* on the property and its ability to kill known resistant strains of root stock. Dr. Barry Wilk, Ph.D., of Scientific Methods, Inc., has been studying this problem since 1981 (see photographs in Appendix J of orchard canopy showing signs of infection). As a consequence of the virulence, tree replacement is no longer feasible in this area. The project will allow for the development of 46 single family housing units, accessory structures and streets located in the area of tree removal, which constitutes 49 acres.

Adequate public facilities and services are available and will be extended to the project area.

In 2018, the Durham Irrigation District (DID) made a successful application to the Butte County Local Agency Formation Commission for annexation of several properties, including the project parcel, to the District. The DID will supply water for the project. Wastewater systems providing collection, treatment and disposal through individual septic tanks and disposal fields will be developed on each lot. The Butte County Environmental Health Department (BCEHD) examined soils in the subdivision and determined that on site soils are adequate for the proposed development.

A system of 6", 8" and 10" pipelines will be installed in the streets to supply domestic water flows, including adequate flows for fire sprinklers, to each residence in the project and fire hydrants spaced approximately 500 feet apart along street frontages. Water use is estimated to be 30% less than that of agricultural operations in the developed portion of the property.

The following addresses Durham-Dayton-Nelson (D2N) Policies.

Protect the capacity of floodplain and prevent flood damage and associated public relief expenditures created by construction of residential structures in the floodplain (Policy D2N- P7.5).

Portions of the project area in proximity to Butte Creek are currently located within Flood Zone AO as designated by the Flood Insurance Rate Map (FIRM) administered by the Federal Emergency Management Agency (FEMA). The AO zone delineates areas that are subject to the flood inundation in a 100-year event. The project will be built to Butte County standards with the base elevation two feet above peak flood levels.

Street-side storm drains will direct excess storm water into a subterranean storm water collection and infiltration system. Infrastructure within the public right of way is to be maintained by a County Permanent Road Division (PRD).

The storm drain collection and disposal system will consist of storm drain leach trenches installed beneath the sidewalks. The proposed conceptual storm drain plan will contain and dispose of all runoff within the proposed development, thereby eliminating the runoff from the property.

Fire protection and emergency services are provided to the project site by the Butte County Fire Department (BCFD) and Butte County Volunteer Firefighters. BCFD contracts with California Department of Forestry and Fire (CALFIRE) to staff BCFD stations through annual cooperative agreements.

BCFD Station 45 is located at 2367 Campbell Street in Durham and is approximately 0.7 miles from the proposed entrance to the project site. The average response time in Durham is less than eight minutes. The project will provide water and fire hydrants on site for fire safety. In addition, a portion of

The Butte County Sheriff's Office (BCSO) provides police protection for the project site. The main Sheriff's Office is located at 33 County Center Drive in Oroville and the nearest BCSO substation to the project site is located at 479 East Park Avenue in Chico, approximately 6 miles away by car. The BCSO is the countywide coordinator for mutual aid situations and maintains mutual aid agreements with the California Highway Patrol and the municipal police departments. Developers pay impact fees that in part support police protection.

The Durham Recreation and Park District (DRPD), one of five independent and non-enterprise districts in the County (reliant on property tax revenue for operations), provides parks and recreational facilities for area residents. The 24-acre Durham Community Park is within ½ mile east of the project site; other DRPD recreational facilities of approximately 10.3 acres are located within ½ mile west, in Durham.

The project also provides a pedestrian/bicycle path from the west end of the curb, gutter and sidewalk along the south side of Durham-Dayton Highway to the intersection of Midway and Durham-Dayton Highway. In addition, the County will require park development impact fees as part of project approval.

Protect agricultural lands which currently produce, or have the potential to produce, from encroaching urban uses (Policy D2N-P6.6).

The current Butte County General Plan, adopted October 2010, includes an Agriculture Element. The Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency was incorporated into Agriculture Element, which identified the project site composed of Prime Farmland and Unique Farmland. The General Plan Land Use Map designates the project site as VLDR (Very Low Density Residential, up to one unit per acre). The zoning designation on the project site is consistent with the General Plan.

The Environmental Impact Report (EIR) prepared for the current General Plan considered the impacts resulting from the build-out of the General Plan, including conversion of approximately 4,700 acres of farmland to non-agricultural uses. The Butte County Board of Supervisors determined that goals, policies, actions, and regulations of the General Plan would reduce and partially offset the conversion of farmland into non-agricultural uses, but found that there are no feasible mitigation measures that the County could adopt to reduce the impact to be less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the County found that specific economic, social, and other benefits identified in the Statement of Overriding Considerations supported the approval of the General Plan. The Creekside Estates project will convert 49 acres of agricultural land to non-agricultural uses. The Urban Reserve Policy requires that any proposal for a subdivision, which would create residential parcels that are less than three acres in size, must be coordinated with all public agencies that provide utility and public services for the extension of water, sewer, circulation and drainage. That subdivision shall be accompanied by the following plans:

- A capital improvement plan/program that indicates where and when physical improvements are to be made, the size of these improvements, standards, phasing of treatment facilities and lines to service the area, and how they will be financed;
- A park and open space plan that identifies locations and standards for park and recreation areas to serve future growth and natural open space areas that are to be preserved;
- An environmental plan that identifies critical areas that should be protected from development if applicable;

- A street and transportation plan that indicates the location, capacity and nature of the system and off-site transportation impacts;
- Health department standards for control of septic systems and water wells. Areas where wells and septic systems are not permissible should be identified;
- A fiscal plan that identifies the proportion of costs of public facilities and services to be reimbursed by the subdivision; and
- Each of these plans and standards required are incorporated into the subdivision as detailed in the above sections.

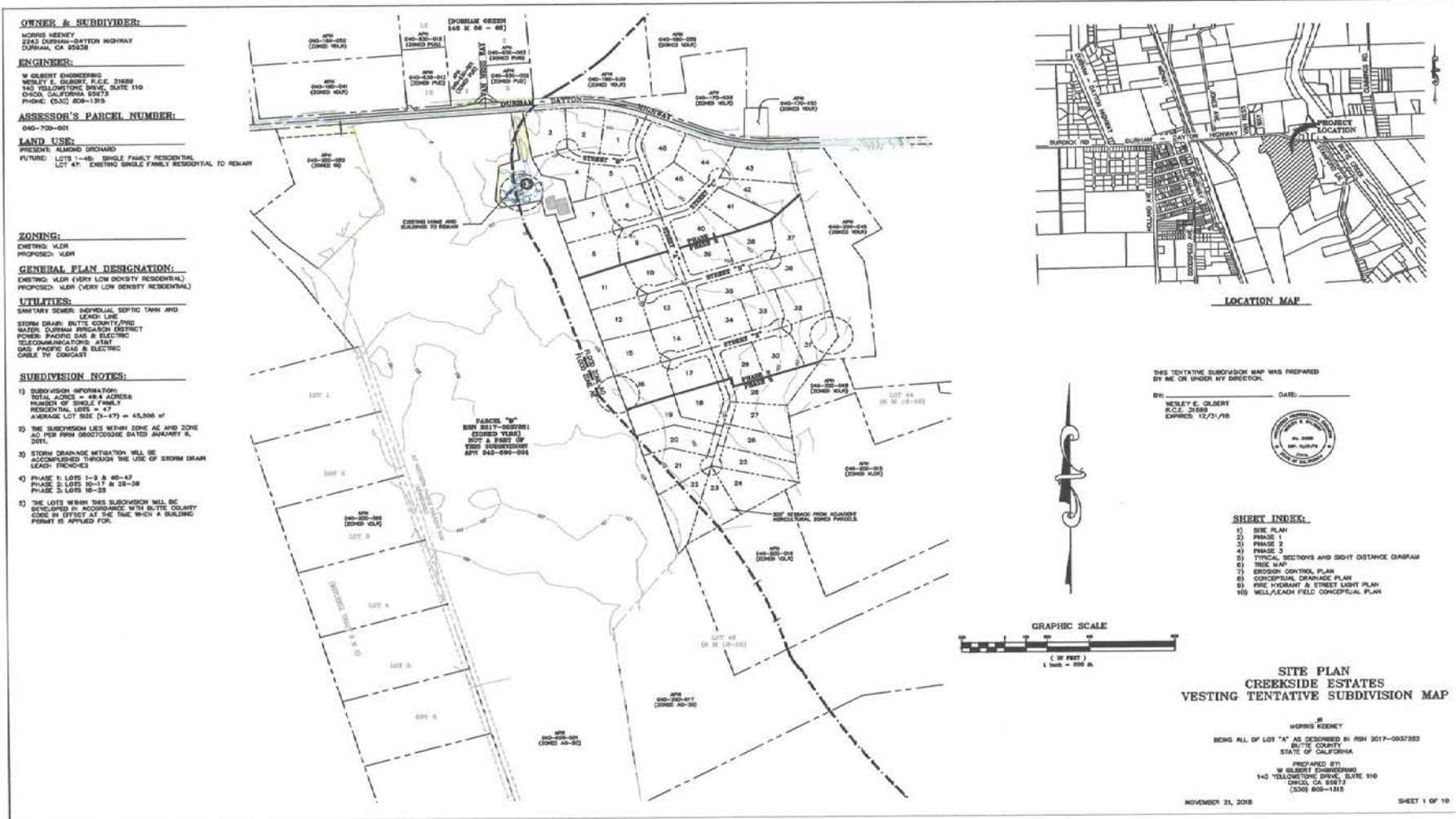


Figure 2-3. Creekside Estates Project Design Map.

2.4 INTENDED USES OF THE EIR

This EIR reveals the environmental impacts related to the project and is intended to be used as a tool by the Lead Agency in decision-making related to approval of the project.

2.5 REQUIRED PERMITS, PLANS AND CONDITIONS

The project will require a number of plans and approvals from local, state and federal agencies.

Action/Approval	Agency
Roadway improvements, bicycle path construction	Butte County
Grading Plan	Butte County
Waste Discharge Requirements, Storm Water Prevention Plan/Construction Storm Water Permit	Central Valley Regional Water Quality Control Board
Annexation to Durham Irrigation District	Durham Irrigation District, LAFCO
Drinking Water System Approval	California Department of Public Health
Fire Suppression Water System	CalFire/Butte County Fire Department

3 ENVIRONMENTAL SETTING

3.1 REGIONAL SETTING

The community of Durham falls within Butte County, which lies in north central California at the northern end of the Sacramento Valley, approximately 150 miles northeast of San Francisco and 80 miles north of Sacramento. Durham lies in the western central part of Butte County on the Valley floor south of the City of Chico. The unincorporated community of Durham is rural in character and dominated by agriculture as is most of the rest of the valley area within Butte County. Residential development outside of community centers consists mostly of single family residences, most with associated farming activities on the same parcel or adjacent parcels. The major agricultural crops in this area are nut and fruit orchards. There are also small industrial and commercial complexes, gas stations and retail stores dispersed throughout the rural land uses.

3.2 LOCAL SETTING

The Creekside Estates Subdivision Project is located east of Durham, on the south side of Durham-Dayton Highway, across the Highway from Van Ness Way. The site is bordered on the west side by almond orchards, on the south by orchards, on the east by almond orchards and single-family residences on large rural styled lots and on the north by Durham-Dayton Highway, almond orchards and single-family residences on medium to large rural styled lots.

The existing parcel is designated in the General Plan as Very Low Density Residential and zoned Very Low Density Residential (VLDR) 1 acre minimum.

The project site falls under the 2030 Butte County General Plan and the Durham Dayton Nelson Area Plan. There are a number of other regional plans, particularly with regard to air quality (e.g., Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan), that guide planning and development within the area of the Creekside Estates project and are discussed within the pertinent sections of this document.

4 PROJECT ALTERNATIVES

The following discussion addresses the relative advantages and disadvantages of alternatives to the proposed project. The proposed project includes a subdivision of 46 lots, including one for the existing single family home and out buildings.

The proposed project conforms to the Butte County General Plan.

4.1 ALTERNATIVE 1: PROJECT AS DESCRIBED IN THE 2011 INITIAL STUDY

The original design specified in the draft Initial Study (Appendix B) had 140 lots for senior citizen housing on 51 acres. Four of the original lots would be separated on a different parcel to the west also with access to Durham-Dayton Highway. Water supply was included in a proposed Community Services District for all public onsite services including sewage treatment, parks, and open space areas. An open space lot was indicated on the west side of the project, with the leach field and a replacement leach field area located on the southwest corner of the project site. Open space buffers between the project and neighboring properties were less than currently proposed. A RV parking area was located at the southern edge. A small neighborhood retail/commercial area was included. A raised berm was proposed to surround the project site to protect homes against 100 year floods. This berm would also serve as a walking/bicycle path.

Advantages: This alternative would provide more housing for displaced senior Paradise residents. The retail center would provide more goods and services for Durham residents. The domestic water supply under the CSD would be less costly than the proposed connection to the Durham Irrigation District system.

Disadvantages: There was strong local opposition to this project. Buffers between the proposed homes and adjacent orchards were less than specified by the current project. The surface storm water detention basins would require additional maintenance, not necessary with an underground infiltration system.

4.2 ALTERNATIVE 2: DEVELOPMENT WITH 5-ACRE PARCELS

County staff requested an alternative with a lower density. A more practical one, in place of two-acre minimums, would be parcels with five acres to allow development of family or commercial vegetable or flower gardens or small livestock production for family food or 4-H activities.

Adjoining land owners within the project area could continue almond production by jointly hiring shakers and sweepers. The multiple owners could afford to treat the soil to reduce or eliminate Armillaria. Parcels would be served by individual wells, rather than an interconnection with Durham Irrigation District.

Advantages: Five acre parcels provide room for production of vegetables or other specialty crops that can be used by the families as a food source or sold in a Farmers Market. It also provides adequate space for poultry or other small farm animal production for food or activities such as 4-H. These are

appropriate uses for a community that prefers to remain rural. The need for public services such as schools and public safety should be lower than the proposed project. Traffic and associated air quality impacts would be reduced.

Disadvantages: The reduction in housing units continues a serious problem in the county regarding permanent homes for displaced residents. It is also an inefficient use of land designated for higher (1 acre) densities, and does not comply with General Plan goals. The loss of a new well connection for the Durham Irrigation District continues a problem with water supply for existing homes.

4.3 ALTERNATIVE 3: NO PROJECT

Under the No Project alternative, the site would retain its current zoning of Very Low Density Residential (VLDR) but would remain as an almond orchard.

Advantages: There would be no impacts related to development and occupation of the site. Specific impacts avoided are increases in motor vehicle trips, related air quality impacts, increases in impervious surfaces, demands for public services and loss of agricultural land.

Disadvantages: Water consumption and greenhouse gas production would remain higher. The orchard is declining because of *Armillaria mellea* and may soon become economically unproductive. The project provides an important segment of the local housing market for senior citizens that would otherwise not be available. The Durham Irrigation District would lose an opportunity to upgrade their system and improve current water supply deficiencies.

Although the No Project Alternative has the fewest adverse impacts, the current project was proposed because it implements the Land Use policies of the 2030 General Plan. It will also improve the water system of the Durham Irrigation District.

5 AREAS OF POTENTIAL ENVIRONMENTAL IMPACT

This section discusses the environmental and regulatory setting and the analysis of potential impacts for the areas of the environment from the CEQA checklist that were identified by the Lead Agency as needing more in depth analysis to determine if there are potential environmental impacts. Categories of the checklist that are not included in the following section were previously analyzed in an Initial Study and impacts were deemed insignificant or mitigations designed to minimize impacts were incorporated into the project design (see Appendix B).

5.1 AGRICULTURAL RESOURCES: AGRICULTURAL CONVERSION

5.1.1 INTRODUCTION

This section describes and assesses existing agricultural resources within the project area and proposed conversion of agricultural lands proposed Creekside Estates subdivision. The project is assessed under both project-specific and cumulative conditions. Potential impacts are identified and mitigation measures designed to reduce these impacts to less-than-significant.

Analysis is based on the project description, the 2010-2030 Butte County General Plan, including the Durham Urban Reserve area, the Durham Dayton Nelson Plan, and General Plan Action 2030 EIR (Statement of Overriding Considerations), data made available by the Butte County Department of Development Services, and visual field observations.

The proposed project consists of 46 single family residential units on a 49 acre parcel that is currently has an existing residence and mature almond orchard compromised by recurring *Armillaria mellea* fungus. The land is currently Very Low Density Residential and not zoned as Agriculture, although the property is currently put to agricultural uses.

5.1.2 ENVIRONMENTAL SETTING

The property is situated within a mixed-use, yet predominantly agricultural area, with almond orchards south and west and walnut orchards to the north. Single-family residences are located on large lots north across Durham-Dayton Highway, with almond orchards and single-family residences on medium to large rural lots to the north and east.

5.1.2.1 Durham Core Area and Urban Reserve

The project is located within the Durham Urban Reserve and approximately two blocks east of the railroad tracks that bound the urban core of Durham (Figure 5-1). The Urban Reserve has been selected through the General Plan Update process as an area where expansion of urban uses is preferred.

Developments within this area must meet additional criteria designed to protect agricultural lands, as specified by the Urban Reserve Policy.

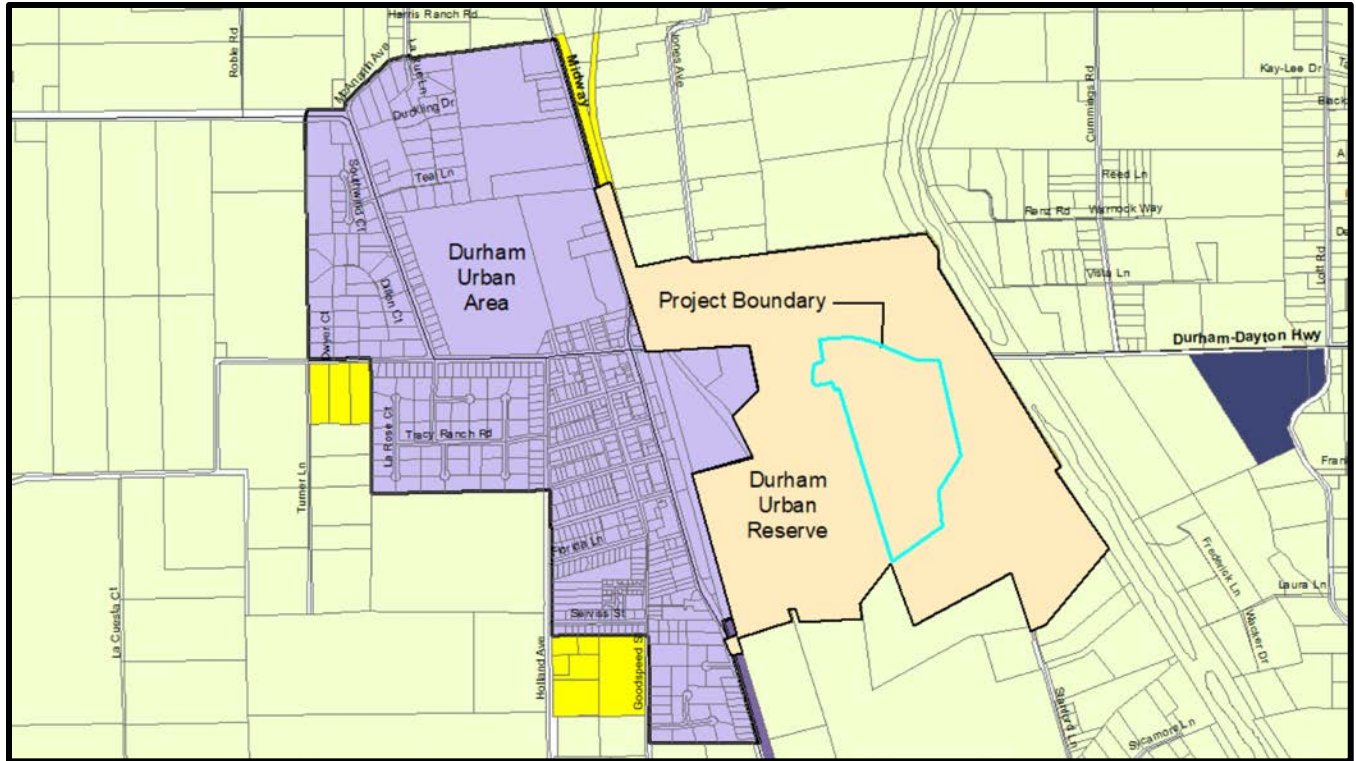


Figure 5-1. Location of Creekside Estates Project Boundary Relative to Durham Urban Core and Reserve.

5.1.3 REGULATORY SETTING

This section describes the federal, state and local regulations affecting agricultural lands within Butte County.

5.1.3.1 Federal Regulations

The US Department of Agriculture of Agriculture (USDA) is the primary federal entity responsible for developing and executing federal government policy on farming, agriculture, forestry, and food. The Farmland Protection Policy Act (FPPA) of 1994 (7 USC 420) was established to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The Act is intended to ensure that federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. Hence, most of the regulatory policies affecting the Creekside Estates project fall within the state and local spheres of government.

5.1.3.2 State Regulations

The following agencies and regulations pertain to agriculture within Butte County, California. The State Department of Conservation maintains the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture by providing maps and data on agricultural resources that can be used determine impacts to farmland in the State. Agricultural land within each county is rated every two years and classified as one of the following categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Grazing Land, Urban and Built Up Land, Other or Water.

The Williamson Act, or the California Land Conservation Act, was established in 1965 to conserve agricultural and open space lands via property tax incentives and voluntary restrictive use contracts administered by the County under State regulations. Private landowners can voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with Counties and Cities also acting voluntarily.

The Open Space Lands Act (Government Code Section 65560 et. seq.) requires all Cities and Counties to prepare an Open Space Element of the local General Plan, which must cover the open space for the following: preservation of natural resources; managed production of resources; outdoor recreation, public health and safety, military installations; and protection of places, features, and objects significant to Native American tribes.

5.1.3.3 Local Regulations

The Butte County Right-to-Farm Ordinance, or Chapter 35 of the Butte County Municipal Code (Ord. No. 3965, § 1, 6-12-07), notifies owners, purchasers, residents and users of property adjacent to agricultural operations of potential issues at the agriculture-urban interface. The Ordinance, which declares that agricultural operations conducted properly on agricultural land are not subject to nuisance claims (assuming the operation was not already on record as a nuisance when the operation began) is provided by the County to residents with an annual tax bill and when an application is submitted for development on or adjacent to agricultural lands.

The Butte County Zoning Ordinance requires a 300-foot buffer between agriculturally designated and zoned parcels and residential dwellings. Butte County has prepared Agricultural/Residential Buffer Implementation Guidelines, which require that the buffer must physically separate a residential dwelling for agriculturally designated and zoned parcels, to minimize potential conflicts. The Butte County Zoning Ordinance requires a minimum 25-foot setback between a residential dwelling and an existing orchard or vineyard located on a non-agriculturally designated or zoned parcel.

2010-2030 Butte County General Plan

There are numerous goals and policies in the Butte County General Plan designed to protect agricultural resources. The following goals and policies apply to development projects:

Goal AG-2 Protect Butte County's agricultural lands from conversion to non-agricultural uses.
--

AG-Policy 2.3 Re-designation and rezoning of land designated as Agriculture to an urban designation shall be allowed only when the applicant can demonstrate that the following criteria are met and mitigated:

- a) The lot(s) for which conversion is requested is adjacent to uses other than agriculture or agricultural support uses (e.g. receiving plants, hulling plants).
- b) The conversion will not be detrimental to existing agricultural operations.
- c) The conversion land is adjacent to existing urban infrastructure and conversion will constitute a logical contiguous extension of a designated urban area.
- d) No feasible alternative exists that is less detrimental to agriculture.
- e) Full mitigation of impacts to the extent allowed under the law is provided, including, but not limited to, roads, drainage, schools, fire protection, law enforcement, recreation, sewage and lighting.

AG-Policy 2.4 As set forth in the Zoning Ordinance, rezoning agricultural land to agricultural zones with lower parcel size restrictions shall be minimized and allowed only if specific criteria are met.

AG-Policy 2.5 When a request is made for a Conditional Use Permit on a lot(s) with existing agricultural operations, an agricultural maintenance plan to provide for the continuation of existing agricultural activities shall be submitted, in accordance with the Zoning Ordinance. The plan shall be reviewed for comments and conditions by the Agricultural Commissioner and Development Services prior to the Planning Commission hearing on the Conditional Use Permit.

AG-Policy 2.6 The County shall retain and protect agricultural lands through the use of proactive land use techniques, including, but not limited to, the following:

- a) Clustered development projects, allowing a “clustering” of permitted densities in a compact configuration in order to protect agricultural land.
- b) Density bonuses, permitting increased density on developable land in exchange for protection of agricultural land.

Goal AG-2 Reduce conflicts between urban and agricultural uses and between habitat mitigation banking and agricultural uses.

AG-Policy 5.3 The Zoning Ordinance shall require that a buffer be established on property proposed for residential development in order to protect lands designated Agriculture by the General Plan and zoned Agriculture under the Zoning Ordinance from incompatible use conflicts. The desired standard shall be 300 feet, but may be adjusted to address unusual circumstances.

AG-Policy 5.3.2 The Zoning Ordinance shall require a setback between a new residence and an existing active orchard or vineyard that locates the residence as far away from the orchard or vineyard as

practicable, taking into account adjacent agricultural uses and practices, provided it does not limit the density permitted by the residential zone, and in no case is less than 25 feet. This setback shall be imposed on the parcel developing with residences and shall be reviewed by the Zoning Administrator in consultation with the Agricultural Commissioner as to width. The setback shall be subject to a public hearing.

AG-Policy 5.3.3 The Zoning Ordinance shall require that a buffer be established pursuant to Policy AG-P5.3 on property proposed for residential development requiring discretionary approval in order to protect existing Williamson Act contracts (i.e. those contracts that are in effect at the time of adoption of this policy) from incompatible use conflicts. The desired standard shall be 300 feet, but may be adjusted to address unusual circumstances.

Durham Dayton Nelson (D2N) Plan

The D2N Plan established Urban Reserve areas to balance the competing goals of agricultural and residential uses within the D2N Area. The Durham-Dayton-Nelson Planning Area Urban Reserve Policy, adopted with the General Plan, states that General Plan Amendments, rezones, subdivision approvals and subsequent urban development within the Urban Reserves must include additional criteria of development. While none of the criteria are specifically related to agricultural activities, they are designed to minimize impacts to agricultural lands. The adherence of the project to these criteria is examined in more depth in Section 5. 4, Land Use and Land Planning: Zoning and Agricultural Conversion.

The Durham-Dayton-Nelson Plan (D2N), adopted within Chapter 13 of the General Plan, does not include any goals, policies, or objectives that specifically address conversion of agricultural lands.

5.1.4 STANDARDS OF SIGNIFICANCE

According to CEQA, the project would be considered to have a significant impact on agriculture and forest resources if it would:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract;
- 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));
- d) Result in the loss of forest land or conversion of forest land to non-forest use; or
- 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.

5.1.5 METHODS OF ANALYSIS

The following discussion assesses whether the project has met each standard of significance and whether it conforms well to General Plan and other applicable goals and policies. Potential impacts are categorized as “No Impact,” “Less Than Significant Impact,” or “Potentially Significant Impact.” For areas in which no or less than significant impacts have been identified, no actions are warranted and the project is considered consistent with the goal, policy, or area of concern. For areas in which a potentially significant impact has been identified, Mitigation Measures have been developed designed to reduce those impacts to levels that are considered less than significant.

5.1.6 IMPACTS AND MITIGATION MEASURES

5.1.6.1 Assessment of Significance Standards

Significance Standard “a” is used to assess whether the project will result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. The land on the site is categorized as Prime Farmland and Unique Farmland by the 2010 California Farmland Mapping and Monitoring Program Map. Prime Farmland is defined as: “land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.”

The project will convert 49 acres of almond orchard infected with *Armillaria mellea* fungus to single family housing. In preparing the 2030 Butte County General Plan, the County Planning Department recognized that to accommodate growth within the county, conversion of some Prime Farmland is inevitable. The General Plan EIR determined that, though the General Plan policies minimize and partially offset conversion of the approximately 4,700 acres of farmland that is anticipated to occur, therefore, loss of farmland is **Significant and Unavoidable**.

The 2030 General Plan sets forth a number of guidelines and policies aimed at minimizing development and fragmentation of farmland, such as the use of an Urban Reserve Policy in certain areas, which clusters development around existing urbanized areas, preserving larger more intact swaths of agricultural land. The Creekside Estates Subdivision will convert a small percentage (only about 1%) of the total farmland anticipated to be converted by development as allowed under the General Plan.

Several aspects of the project design serve to help offset the effects of farmland conversion and are in accordance with General Plan policies and County ordinances. The existing orchard has become unproductive due to fungal infection and is located within the Urban Reserve area of Durham, which had been identified by County as an area targeted for future growth because it is close to the already urbanized area of downtown Durham. Project design incorporates a buffer between housing and other agricultural parcels in accordance with County ordinances to minimize impacts to and from surrounding

agricultural properties. Because of project will convert a small portion of economically unviable orchard and is in line with County requirements regarding farmland conversion, the impact is considered less than significant. **Less Than Significant Impact.**

Significance Standard “b” is used to assess if there is a conflict with existing zoning for agricultural use, or a Williamson Act Contract. Existing zoning adopted with the 2030 General Plan is VLDR -1.0, Very Low Density Residential – one-acre minimum. There is no Williamson Act Contract on the site. The project therefore does not conflict with existing zoning for agriculture or a Williamson Act Contract. **No Impact.**

Significance Standards “c” and “d” are used to identify conflicts with existing zoning for or loss of forested land. The site is not forest land or timberland so Standards of Significance, c and d, do not apply. **No Impact.**

Significance Standard “e” calls for analysis of whether a project involves 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. The project includes internal circulation, and open space that will serve the development; therefore, it is not anticipated to involve other changes that could result in conversion of additional farmland or forest. **No Impact.**

5.1.6.2 Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans

The project is consistent with most applicable General Plan objectives and policies relating to agriculture. The project property is currently zoned Very Low Density Residential, so AG-Goal 2, which enumerates conversion of agricultural lands to non-agricultural uses, does not apply. AG-Goal 5, which enumerates reducing conflicts between urban and agricultural uses. The project includes a 300-foot setback for a residential dwelling from the adjacent agriculturally designated land and a 100-foot residential dwelling setback from the adjacent agricultural use, orchard, on the adjacent residentially zoned parcels.

5.1.6.3 Significant Environmental Effects of the Proposed Project

There were no impacts of the proposed project that were considered a significant impact on agriculture or forest lands. Approximately 49 acres of diseased orchard will be converted to single family housing development in accordance with desired goals, planning guidelines, and standards developed by the County of Butte, which are outlined in the recently adopted 2010-2030 General Plan and analyzed with the General Plan EIR.

5.1.6.4 Significant Environmental Effects That Cannot be Avoided with the Proposed Project

The 49 acres of agricultural land would be converted to a residential development. Conversion of approximately 4,700 acres of farmland within Butte County is anticipated with implementation of the Butte County General Plan and has been considered significant and unavoidable to accommodate growth for residents within the county.

5.1.6.5 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

The project parcel was designated and zoned Very Low Density Residential as part of General Plan 2030. The Butte County General Plan 2030 Environmental Impact Report (GPEIR) considered the impacts resulting from the build-out of the General Plan, including conversion of approximately 4,700 acres of *Prime Farmland, Farmland of Statewide Importance, and Unique Farmland* to non-agricultural uses, including the *Prime Farmland* adjacent to the subject property. The Butte County Board of Supervisors determined that goals, policies, actions, and regulations of the General Plan would reduce and partially offset the conversion of farmland into non-agricultural uses, but found that there are no feasible mitigation measures that the County could adopt to reduce the impact to be less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the County found that specific economic, social, and other benefits identified in the Statement of Overriding Considerations supported the approval of the General Plan.

5.1.6.6 Growth-Inducing Impacts of the Proposed Project

Successful development of the proposed project and previous extension of the Durham Irrigation District (DID) boundaries to serve other land owners to pursue development of their lands within the Durham Urban Reserve Area. Surrounding parcels are designated VLDR-1.0, which provides the potential to divide parcels larger than 2 acres. The extension of the DID waterline to service the project, only provides a couple parcels to have direct access to the waterline. Therefore it is not anticipated that the project to have growth-inducing impacts in the area.

5.1.6.7 Cumulative Impacts

Conversion of 4,700 acres of agricultural lands within Butte County is an expected and unavoidable consequence of growth and implementation of the adopted 2030 General Plan. The General Plan has incorporated numerous goals and policies that seek to minimize the cumulative impacts of development on agricultural lands. The Creekside Estates project is highly consistent with General Plan policies related to agricultural conversion in the Durham area. It is located in the Urban Reserve area that has been targeted as a logical and appropriate area for residential expansion and meets many requirements that are adopted strategies for minimizing impacts to the county's important agriculture lands.

5.2 AIR QUALITY AND GREENHOUSE GASES

5.2.1 INTRODUCTION

In February of 2019, an air quality and greenhouse gas emissions report was drafted by LSA Associates, Inc., for the Creekside Estates Subdivision project (Air Quality Reports, Appendix C). The reports describe the existing air quality and the potential effects of the proposed project at Creekside Estates including construction emissions, impacts of traffic on local CO₂ equivalent and mitigation measures to reduce potentially significant impacts. Analyses conducted by LSA Associates were performed using guidelines for assessment of air quality impacts from the BCAQMD 2014 CEQA Air Quality Handbook, including the calculation of VMT values for 2014 and 2040.

The project will convert 49 acres of existing almond orchards to residential housing. Existing agricultural burn emissions will decrease. New sources of emissions, including residential and traffic, will be introduced.

5.2.2 ENVIRONMENTAL SETTING

5.2.2.1 Climate and Topography

Durham California is located roughly 80 miles north of the city of Sacramento in central Butte County, where the foothills meet the valley floor at Butte Creek. The climate of the Sacramento Valley Air Basin (SVAB) is Mediterranean in nature with mild, rainy winter weather from November through March, and warm to hot dry weather from April through October. The SVAB is bounded by the Coast Range to the west, the Sierra Nevada to the east, and the Trinity and Cascade Ranges to the north. These mountain ranges channel winds through the Sacramento Valley, yet also inhibit dispersion of airborne pollutants as the mountains can block pollutants from exiting the valley. The predominant winter weather pattern consists of northerly winds, while summer months see periodic southerly or Delta Sea breezes. Unlike the southern Sacramento Valley, the northern part of the Sacramento Valley Air Basin sees considerably less Delta breeze effects, as sea breezes diminish with distance inland from the Carquinez Straights. The calm conditions of summer can result in soaring temperatures, and stagnation of valley air. Conversely winter months have a high percentage of calm conditions where stagnation and inversion layers can hold pollutants near ground level. Air pollution problems in the northern SVAB are exacerbated by pollution migrating from the San Francisco Bay and Greater Sacramento areas to the more stagnant north, where it becomes trapped by the surrounding mountains.

5.2.2.2 Local Ambient Air Quality

Criteria pollutants

Federal, state and local government entities have set standards and thresholds for pollutants of concern. Ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀, PM_{2.5}), and lead (Pb) have been set by both the State of California (State) and the federal government (see Table 1). The State has also set standards for sulfate and visibility.

Currently, the Butte County Air Quality Management District (BCAQMD) is under State and federal non-attainment for ozone, PM₁₀, and PM_{2.5}. There were 2 days recorded above the State 8-hour ozone standard of 0.07ppm in 2009, and one in 2010, as recorded at the Manzanita Avenue monitoring station in Chico (Table 2). During 2011, there were four recorded days above the State 24-hour PM₁₀ standard of 20 µg/m³, and six recorded days above the federal 24-hour PM_{2.5} standard of 35 µg/m³.

Table 1. State and Federal Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Primary		Secondary
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ₃)	—	Same as Primary Standard	
	0.07 ppm (137µg/m ₃)				
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ₃	150 µg/m ₃	Same as Primary Standard	
	20 µg/m ₃				
Fine Particulate Matter (PM _{2.5})	24 Hour	—	35 µg/m ₃	Same as Primary Standard	
	Annual Arithmetic Mean	12 µg/m ₃	12.0 µg/m ₃	15 µg/m ₃	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ₃)	35 ppm (40 mg/m ₃)	—	
	8 Hour	9.0 ppm (10 mg/m ₃)	9 ppm (10 mg/m ₃)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ₃)	—	—	
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm (339 µg/m ₃)	100 ppb (188 µg/m ₃)	—	
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ₃)	0.053 ppm (100 µg/m ₃)	Same as Primary Standard	
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm (655 µg/m ₃)	75 ppb (196 µg/m ₃)	—	
	3 Hour	—	—	0.5 ppm (1300 µg/m ₃)	
	24 Hour	0.04 ppm (105 µg/m ₃)	0.14 ppm (for certain areas) ₁₀	—	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas) ₁₀	—	
Lead	30 Day Average	1.5 µg/m ₃	—	—	
	Calendar Quarter	—	1.5 µg/m ₃ (for certain areas) ₁₂	Same as Primary Standard	
	—				
Visibility Reducing Particles	8 Hour	See footnote 13	No National Standards		
Sulfates	24 Hour	25 µg/m ₃			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ₃)			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m ₃)			

Source: California Air Resources Board. 2014. For Full table and e see:<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>

Table 2. Ambient Air Quality at the East Avenue - Chico, Monitoring Station.

Pollutant	Standard	2015	2016	2017
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.6	1.7	1.9
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.3	1.4	1.4
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O₃)				
Maximum 1-hour concentration (ppm)		0.080	0.080	0.076
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.69	0.074	0.070
Number of days exceeded:	State: > 0.07 ppm	2	1	0
	Federal: > 0.08 ppm	0	1	0
Coarse Particulates (PM₁₀)				
Maximum 24-hour concentration (µg/m ³)		67.8	58.1	101.4
Number of days exceeded:	State: > 50 µg/m ³	8	8	14
	Federal: > 150 µg/m ³	0	0	0
Annual arithmetic average concentration (µg/m ³)		21.6	20.8	22.8
Exceeded for the year:	State: > 20 µg/m ³	Yes	Yes	Yes
	Federal: > 50 µg/m ³	No	No	No
Fine Particulates (PM_{2.5})				
Maximum 24-hour concentration (µg/m ³)		39.0	45.9	47.0
Number of days exceeded:	Federal: > 35 µg/m ³	2	1	2
Annual arithmetic average concentration (µg/m ³)		9.1	7.6	9.0
Exceeded for the year:	State: > 12 µg/m ³	No	No	No
	Federal: > 15 µg/m ³	No	No	No
Nitrogen Dioxide (NO₂)				
Maximum 1-hour concentration (ppm)		0.041	0.032	0.038
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.006	0.006	0.006
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO₂)				
Maximum 1-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.25 ppm	ND	ND	ND
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.04 ppm	ND	ND	ND
	Federal: > 0.14 ppm	ND	ND	ND
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	ND

ppm = parts per million; µg/m³ = micrograms per cubic meter; ND = No data. There was insufficient (or no) data to determine the value. Source: CARB 2017 and USEPA 2017.

Greenhouse Gases

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. Global surface temperatures have risen by $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$ over the last 100 years (1906 to 2005). The rate of warming over the last 50 years is almost double that over the last 100 years. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.

Green House Gases are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The following are the gases that are widely seen as the principal contributors to human-induced global climate change:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

These gases vary widely in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to carbon dioxide, the most abundant GHG. GHG emissions are typically measured in terms of pounds or tons of "CO₂ equivalents" (CO₂e). For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

5.2.3 REGULATORY SETTING

The proposed project site lies within the Sacramento Valley Air Basin and is under the jurisdiction of the Butte County Air Quality Management District (BCAQMD). The BCAQMD, along with other Northern Sacramento Air Districts, have developed the 2009 Air Quality Attainment Plan (AQAP). The Draft Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan describes air quality pollution control strategies that are to be implemented on a local level within the General Plan to bring the region into attainment for ozone standards.

5.2.3.1 Federal Regulations

Air pollutants emitted into the air by mobile and stationary sources are regulated by both federal and state law. The Environmental Protection Agency (EPA) has the authority to regulate CO₂ under the federal Clean Air Act.

5.2.3.2 State Regulations

The following regulations are applicable to air quality and greenhouse gas (GHG) emission for the project:

Executive Order S-3-05 established that GHG emissions in California should be reduced to 1990 levels by the year 2020, and be 80% below 1990 levels by 2050.

Assembly Bill (AB) 32 specifies that GHG emissions in California should be reduced to 1990 levels by the year 2020 and requires a Scoping Plan which outlines recommendations on how to achieve reductions through implementation of GHG emission reduction strategies related to energy efficiency, water use, recycling and solid waste, as well as alternative compliance and incentive mechanisms such as cap and trade among others. In addition, AB 32 directs the California Air Resources Board (ARB) and the newly created Climate Action Team to identify a list of “discrete early action GHG reduction measures.”

Senate Bill (SB) 97 requires the Office of Planning and Research to regulate GHGs and their impacts under CEQA.

Senate Bill (SB) 375 requires regional planning of growth and housing to be balanced and in line with AB 32 and GHG reduction efforts. In September 2008, Governor Schwarzenegger signed Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Change Act of 2008. Under SB 375, the Butte County Association of Governments (BCAG) has been designated to develop the area's Sustainable Communities Strategy (SCS). The SCS will include a regional land use plan and transportation network that accommodates the region's projected housing need while reducing greenhouse gas emissions.

5.2.3.3 Local Regulations

The BCAQMD, along with other Northern Sacramento Air Districts, have developed the 2009 Air Quality Attainment Plan (AQAP). The Draft Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan describes air quality pollution control strategies that are to be implemented on a local level within the general Plan to bring the region into attainment for ozone standards. The BCAQMD has implemented those aspects of the 2009 Attainment Plan that address air quality issues in Butte County. The BCAQMD has also set thresholds for criteria pollutants of concern (Table 3) to allow assessment of projects' effects on air quality under CEQA.

Table 3. Thresholds of Significance for Criteria Pollutants of Concern from BCAQMD's CEQA Handbook (2008).

Pollutant	Level A	Level B	Level C
NOx	≤ 25 lbs./day	> 25 lbs./day	> 137 lbs/day
ROG	≤ 25 lbs/day	> 25 lbs/day	> 137 lbs/day
PM10	≤ 80 lbs/day	> 80 lbs/day	> 137 lbs/day
Level of Significance	Potentially Significant Impacts	Potentially Significant Impacts	Significant Impacts
Environmental Document	Mitigated Negative Declaration (MND) or ND	Mitigated ND or EIR	EIR

At the current time, BCAQMD like many other air management district has not set project level thresholds for greenhouse gas production. Greenhouse gas policies are broader policies that are aimed at inventorying greenhouse gas production from various activities within the county and reducing them through programs that encourage use of “cleaner” technologies and building materials, for example.

Butte County General Plan

The Butte County General Plan has policies and guidelines related to air quality and greenhouse gases that are relevant to development projects within the County. The Butte County General Plan Conservation and Open Space Element, COS-A1.1 (Climate Action Plan) states:

“Within one year of adoption of General Plan 2030, coordinate with regional agencies to develop a Climate Action Plan, which, in combination with other existing policies and regulations by other agencies and business sectors of the economy, would achieve reduction consistent with State guidelines using methodology deemed appropriate at the time of quantification. Include the following as components in the Climate Action Plan:*

- a) Establish a detailed inventory of current (2006) GHG emissions in Butte County, including, but not limited to, residential, commercial, industrial and agricultural emissions.
- b) Forecast GHG emissions for areas within the jurisdictional control of the County for “business as usual” conditions in 2020.
- c) Identify methods to reduce GHG emissions to a level that would achieve reduction consistent with State guidelines at the time of quantification.
- d) Quantify the 2030 reductions in GHG emissions from the identified methods.
- e) Require monitoring and reporting of GHG emissions.
- f) Establish a schedule of actions for implementation through 2020.
- g) Identify a process to set a reduction goal for 2030 by 2020.
- h) Update the Climate Action Plan by 2020 to include reduction measures to achieve the

adopted 2030 reduction goal.

- i) Develop a Climate Change Preparedness Plan that will prepare for the impacts of climate change on the county's economic and natural ecosystems and promote a climate-resilient community."

GHG Policies of the Butte County General Plan related to air quality and developments include:

COS-P1.3: New development should use recycled content construction materials.

COS-P1.4: Project design shall provide above ground and natural storm water facilities and building designs and materials that promote groundwater recharge.

COS-P1.5: Internal project site street systems shall be designed to support the use of Neighborhood Electric vehicles (NEV).

COS-P2.2: New development shall comply with Green Building Standard adopted by the California Building Standards Commission at the time of building permit application, including requirements about low or no-toxicity building materials.

COS-P2.4: All new subdivisions and developments should meet green planning standards such as LEED for Neighborhood Design.

COS-P4.3: New development shall meet the guidelines of the California Energy Star New Homes Program and demonstrate detailed energy conservation measures.

COS-P4.4: New site and structure designs shall maximize energy efficiency.

On February 25, 2014, Butte County adopted the Butte County Climate Action Plan. The CAP is an implementation mechanism for the General Plan's climate-related goals. The Climate Action Plan supports the statewide GHG emissions reduction goals set forth in Assembly Bill (AB) 32 and Senate Bill (SB) 375 and provides GHG emissions reduction targets for both the unincorporated Butte County community and Butte County government operations. Many of the goals and policies of the Climate Action Plan for greenhouse gas reduction in the county are broad policies aimed at reducing agricultural, vehicular, and construction-related emissions and increasing energy efficiency of new developments and echo the General Plan policies related to climate. The following Climate Action Plan measures, however, apply specifically to new developments.

EN7: Encourage new nonresidential buildings to meet and exceed CALGreen standards for energy efficiency, water conservation, and passive design.

EN8: Expand distributed generation, renewable energy systems for new residential development.

F1: Expand the use of alternative and clean-fuel vehicles.

5.2.4 *STANDARDS OF SIGNIFICANCE*

According to the CEQA standards of significance for air quality, a project would be considered to have a significant adverse effect on air quality if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan,
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- c) 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),
- d) Expose sensitive receptors to substantial pollutant concentrations, or
- e) Create objectionable odors affecting a substantial number of people.
- f) Similarly, the project would be considered to have significant impacts related to greenhouse gases if it would:
- g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.2.5 *METHODS OF ANALYSIS*

LSA Associates, Inc., used URBEMIS v. 9 modeling software initially to estimate emissions generated by the project and CalEEMod V.1.1.1 air quality modeling software, which is replacing URBEMIS as the air quality model of choice for air quality and GHG analysis.

5.2.6 *IMPACTS AND MITIGATION MEASURES*

5.2.6.1 Assessment of Significance Standards

Significance Standard “a” for both air quality and greenhouse gases is used to assess whether a project conflicts with or obstructs any applicable air quality or greenhouse gas reduction plan. The project was not found to conflict with or obstruct any of the policies or directives in the Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan, which are aimed more at broad programs to reduce air quality impacts within the region, rather than specific air quality policies relating to developments. **No Impact.**

The air quality Standards of Significance “b” and “c” call for determining whether the project would contribute to an air quality violation or a net increase in any criteria pollutant for which the project region is already in non-attainment status. Results of the air quality model and data from the Air Resource Board were used to assess the project’s conformance with these standards. The BCAQMD is

currently under non-attainment status for ozone and particulate matter (PM₁₀, PM_{2.5}) for the California standards. The BCAQMD is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal PM_{2.5} standard.

The project can be expected to generate emissions of pollutants from use of certain building materials, operation of construction machinery, dust generation, and vehicle emissions over the long-term from increased traffic. The following sub-sections discuss potential for impacts for each of these areas of emissions.

Construction Equipment Exhaust Emissions

Construction period emissions would result from implementation of the proposed project in the form of organic gas emissions. Solvents in adhesives, non-water based paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

During construction, various diesel-powered vehicles and equipment would be in use. In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). Analysis of construction emissions associated with the proposed project was conducted using CalEEMod. The report by LSA found that the project would not exceed the maximum daily exhaust emissions 137 lbs/day threshold established by the BCAQMD for any criteria pollutant (i.e., ROG, NO_x, PM_{2.5}, PM₁₀; Table 2). Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the emissions occur within the project site. Because of its short duration, health risks from construction emissions of diesel particulate would be a less than significant impact. **Less Than Significant Impact.**

Particulate matter from construction from the project was found to be a less than significant health risk due to the short duration of operations where diesel fueled engines are required on site. Also, the transient nature of the equipment within the site reduces the likelihood of particulate “hotspots.” **Less Than Significant Impact.**

Table 4. Project Construction Emissions in Pounds Per Day.

Project Construction	ROG	NO_x	Exhaust PM_{2.5}	Fugitive Dust PM_{2.5}	Total PM_{2.5}	Exhaust PM₁₀	Fugitive Dust PM₁₀	Total PM₁₀
Maximum Daily Exhaust Emissions	47.3	54.7	2.2	10.0	12.2	2.4	18.20	20.6
BAAQMD Thresholds	137	137	NA	NA	80.0	NA	NA	80.0
Exceed Threshold? ^A	No	No	NA	NA	NO	NA	NA	No

NA = Not Applicable, the BCAQMD does not have threshold.

Source: LSA Associates, 2013.

Construction Fugitive Dust

Dust would affect local air quality at various times during construction of the proposed project. Construction activities would result in increased dust fall and locally elevated levels of particulates downwind of construction activity. Construction dust has the potential to create a nuisance at nearby properties. Dust emissions regulated under BCAQMD District Rule 200 “Nuisance” and 205 “Fugitive Dust Emissions” must be prevented from being airborne beyond the property line. Butte County is a non-attainment area for PM emissions. **Potentially Significant Impact.**

Therefore, implementation of the following mitigation measure would reduce construction related impacts to a less than significant level:

Dust Control Mitigation Measures AIR-1 shall be implemented by the project applicant during construction activities, in order to reduce construction impacts to less than significant levels.

Mitigation Measure AIR-1: Construction Requirements

Consistent with the guidance from the BCAQMD, the project applicant shall implement the following measures during construction of the project.

- Maintain all construction equipment in proper tune according to manufacturer’s specifications.
- To the extent feasible, maximize the use of diesel construction equipment meeting the ARB’s 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission.
- Haul vehicles transporting soil into or out the property shall be covered.
- A water truck shall be on site at all times. Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- On-site vehicles limited to a speed (15 mph) which minimizes dust emissions on unpaved roads.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with District Rule 200 & 205.
- Vehicles entering or exiting construction areas shall travel at a speed which minimizes dust emissions.
- Construction workers shall park in designated parking areas.
- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s).
- Limit dust producing construction activities during wind events exceeding 15 mph.

Operational Emission Impacts

The BCAQMD has established a significance threshold for ozone precursors, reactive organic gases (ROG) and nitrous oxide (NOx) at 25 lbs/day and particulate matter of 10 microns or less (PM₁₀) at 80 lbs/day. A significance threshold for PM_{2.5} has not been established; PM_{2.5} emissions are provided for informational purposes only. The emissions from the proposed project are shown in Table 4.

Long-term emission impacts associated with the proposed project were calculated with CalEEMod using the land code "Single Family Residential" and the specific project trip generation rates from the Traffic Impact Analysis. LSA noted that: "According to the CalEEMod Users Guide, the NOx and greenhouse gas emissions results from energy use when using the Retirement Community land use code in CalEEMod is off by three decimal places. Due to this error in the model, CalEEMod cannot accurately estimate energy use emissions that account for the project's solar installations; therefore, the similar land use code of Single Family Residential was used in the model (which would also represent a more conservative outcome)." Wood Burning fireplaces are prohibited under BCAQMD rule 207, and were therefore, not included in the proposed project or CalEEMod analysis. The results of the analysis by LSA Associates, Inc., concluded that long term emissions generated by the proposed project are not anticipated to exceed BCAQMD's thresholds (see Table 5) and, therefore, would have a less than significant impact on local and regional air quality. **Less Than Significant Impact.**

The project includes a bicycle/pedestrian path along Durham- Dayton Highway to the intersection of Midway. The project includes construction mitigation to reduce air emissions. The combination of these operational features would contribute to an overall reduction in greenhouse gas emissions.

A primary mobile source pollutant of local concern is carbon monoxide (CO). Traffic areas of vehicle congestion create pockets of high CO concentration or "hot spots" which have the potential to exceed the state 1-hour standard of 20 ppm and/ or the 8- hour standard of 9.0 ppm of CO. A screening approach was used by LSA, as recommended by the BCAQMD CEQA handbook, to estimate the potential of the proposed project's traffic impacts would cause a potential CO hotspot. A project is said to have potential to exceed CO standards if:

A traffic study for the project indicates that the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to an unacceptable LOS; or

A traffic study indicates the project will substantially worsen an already existing peak-hour LOS F on one or more streets or at one or more intersections in the project vicinity.

A traffic study prepared for the project by the firm of W-Trans indicates that most intersections in the project vicinity currently operate at an acceptable Level of Service (LOS) of C or better. Under future conditions, intersections would operate at an acceptable LOS of D or better. Implementation of the project would increase delay on the Durham-Dayton Highway by a fraction of a second, but LSA Associates found that the project would not generate CO hotspots, or cause the LOS to deteriorate to an unacceptable level which violates any air quality standard, or contribute substantially to an existing or projected air quality violation.

Substantial Pollutant Concentration Analysis

Significance Standard “d” requires assessment of the public exposure to substantial pollutant concentrations. The BCAQMD, through District Rule 300, Open Burning Requirements, regulates agricultural burning and requires that agricultural growers obtain an Air Quality Burn Permit for agricultural burning. Burning is allowed only on permissive burn days, when forecasted weather conditions create enough air movement to permit good smoke dispersal, thereby minimizing smoke concentrations that could impact sensitive receptors. Therefore, smoke from agricultural burning would not expose future residents of the project site to substantial pollutant concentrations.

Air pollution associated with the proposed project would be primarily vehicle related and would not necessarily be concentrated in the vicinity of the project sites. Furthermore, the proposed project would produce less particulate emissions than exist currently on site such as agricultural burning and dust generation and the diesel tractor emissions associated with orchard operations. Therefore, implementation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant Impact.**

Odors

Significance Standard “e” requires assessment of odors produced by projects. The project is a single-family residential subdivision, which would not contain any substantial sources of odor. Therefore, LSA found that the proposed project would not “create objectionable odors affecting a substantial number of people” and would have a less than significant impact relating to odors. **Less Than Significant Impact.**

Greenhouse Gases

A 2011/2012 study by the Almond board of California in conjunction with UC Davis calculated that 1 acre of California almonds produces 45.24 metric tons of CO₂ equivalent (CO₂ eq) annually without deductions from carbon credits, cogeneration from pruning, and co-products (Kendall 2011). The existing almond orchard does not cogenerate and burns woody biomass on site.

LSA associates calculated (using CalEEMod) that the proposed project would emit 1,449 metric tons of CO₂ eq annually. Calculations using values from Kendall 2011 project that the project’s remaining 69 acres of almond orchard would produce 3,121.56 MT/yr., making the total project emissions 4,570.56 MT/yr. Subtracting this value from the original 118 acre emissions yields a net reduction of CO₂ eq of - MT/yr. (Table 6).

The BCAQMD limits public exposure to toxic air contaminants through a number of programs including implementation of the Air Toxics “Hot Spots” (AB2588) Program, implementation of the Federal Title III program, and other rules aimed at specific types of sources known to emit high levels of TACs. The ARB has identified high volume freeways, distribution centers, rail yards, ports, refineries and gasoline dispensing facilities as sources of substantial pollutant concentrations. The proposed project is not located within 500 feet of a high volume freeway or within the vicinity of other sources of air pollutants.

Table 5. Regional Emissions in Pounds Per Day.

	Reactive Organic Gases	Nitrogen Oxides	PM₁₀	PM_{2.5}
Regional Emissions	15.98	20.51	7.47	0.75
BCAQMD Significance Threshold	25.0	25.0	80.0	NA
Exceed?	No	No	No	NA

Source: LSA Associates, Inc., 2013.

Table 6: GHG Emission Analysis- Comparison of Pre- and Post- Project Conditions.

Existing Almond Orchard GHG's	Proposed Project GHG's
1 acre almonds = 45.24 MT/yr.	Proposed Project (49 ac) = 1,449 MT/yr. MT/yr.
118 ac. x 45.24 MT/yr. = 5,338.32 MT/yr.	Proposed Remaining almond orchard (69 ac) = 3,121.56 MT/yr.
Existing Total 118 ac almonds = 5,338.32 MT/yr.	Project Total = 1,449 + 3,121.56= 4,570.56 MT/yr.
Existing - Project Total = Proposed Project net change	5,338.32 MT/yr. – 4,570.56 MT/yr. = a reduction of 767.76 MT/yr.

Project Greenhouse Gas Emissions Greenhouse gas emissions associated with the project were estimated by LSA using CalEEMod, as recommended by BCAQMD. LSA found that the proposed project would generate up to 1,449 tons of CO₂e emissions annually. The largest source of GHG emissions is motor vehicle emissions, at approximately 70% of the total. The next largest is combined energy use at 23% of CO₂e emissions. Solid waste accounts for approximately 5% and other sources, such as landscape equipment, constitute less than 1% of the operational CO₂e emissions.

The proposed project would develop residences on land currently used for agriculture. The project has the potential to increase local traffic, and therefore GHG emissions associated with vehicles. However, the location of the emissions would be transient resulting in a cumulative effect regionally.

Furthermore, the GHG volume associated with the increased vehicle miles would be less than is currently emitted onsite through almond orchard production. Implementation of General Plan 2030 would result in GHG emissions that contribute cumulatively to the region. **Potentially Significant Impact.**

The Conservation and Open Space Element of the General Plan was adopted for the purpose of reducing greenhouse gas emissions. To be consistent with both the General Plan and the Butte County Climate Plan, the project applicant shall implement the following mitigation measure.

Mitigation Measure GHG-1: The project applicant shall incorporate the following measures into project design and construction:

- Support expansion of renewable energy systems. Prewire all new residential development to support photovoltaic system installation;
- Support efficiency in vehicles and landscaping equipment. Install electrical vehicle outlets on external walls or in garages in all new residential development;
- Install electrical vehicle outlets on external walls or in garages in all new residential development. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minute. Use clean or alternative fuel equipment;

- Construction of the proposed project shall utilize recycled-content construction materials to the extent feasible;
- Project design shall comply with the Green Building Standards adopted by the California Standards Commission at the time of building permit application, including requirements about low- or no-toxicity building materials;
- The project shall meet all appropriate green planning standards; and
- The project design shall maximize energy efficiency and meet the guidelines of the California Energy Star New Homes Program and demonstrate detailed energy conservation measures.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-construction, Construction.

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions are met before a building permit is approved and shall verify compliance through their inspection processes.

Significance after Mitigation: Implementation of this measure will comply with the requirements for reduction of greenhouse gases to the extent feasible.

5.2.6.2 Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans

The project does not violate any air quality plan and with implementation of the mitigation measures will be consistent with the goals and policies related to air quality and greenhouse gases within the Butte County General Plan and the Butte County Climate Action Plan. With implementation of GCC-1 as identified in the Initial Study, the project will use recycled construction materials whenever possible (COS-P1.3) and provides ground and storm water facilities and building designs that promote groundwater recharge (COS-P1.4). The internal street systems are designed to support the use of Neighborhood Electric Vehicles (COS-P1.5; CAP F3). The project has been designed to be compliant with the Green Building Standards adopted by the California Standards Commission, including requirements about low- or no-toxicity building materials (COS-P2.2) and meets green planning standards (COS-P2.4; CAP EN7). Energy efficiency will be maximized through the subdivision's design, which will maximize southern exposures and proposes solar photovoltaic systems to be incorporated into the 139 residential units, will meet over 95 percent of the average home's annual electricity requirements and the building standards discussed above (COS P2.4; COS-P4.4; CAP EN8; CAP EN9).

Consistency with Greenhouse Gas Reduction Plans Analysis

GHG emissions within Butte County were analyzed in the General Plan EIR and the Butte County Climate Action Plan. Both the Climate Action Plan and Section I, Greenhouse Gases of the Land Use Element of the 2030 General Plan include numerous goals and policies related to circulation and transportation, land use development, green building design, techniques and construction, and sustainable energy supply and energy efficiency, that help reduce GHG production within the county. Although these goals and policies reduce GHG emissions, any production of greenhouse gases contributes to the cumulative impacts of GHG emissions. The General Plan EIR Greenhouse Gas Analysis indicated that, under the 2030 General Plan, GHG emissions would be greater than 85% of the 2006 conditions; thus, the County emissions reduction goal would not be met. Greenhouse gas impacts were therefore considered **Cumulatively Significant and Unavoidable**. Because of economic and social benefits of the 2030 General Plan and because feasible mitigations for greenhouse gases did not exist, the County adopted a Statement of Overriding Considerations regarding greenhouse gases in 2010 (Resolution 10-150) along with the General Plan.

The proposed project would be consistent with the General Plan land use designation for the site. Additionally, the proposed project would not conflict with any of the control measures designed to bring the region into attainment; therefore, the proposed project would not conflict with or obstruct the implementation of the applicable air quality plan.

5.2.6.3 Significant Environmental Effects of the Proposed Project

The project was found to have a potentially significant impact on generation of particulate matter in the form of fugitive dust. When implemented, a mitigation measure incorporating standard mitigations for reducing the impact of fugitive dust will reduce the impact of to a less than significant level.

5.2.6.4 Significant Environmental Effects That Cannot be Avoided with the Proposed Project

Residential developments contribute to air pollution and greenhouse gas production through construction, use of building materials and coatings that contain air contaminants, and through increases in vehicular traffic associated with the development; thus, a certain amount of air pollution cannot be avoided with such a project. Butte County adopted a Statement of Overriding Considerations with respect to greenhouse gases due to the Significant and Unavoidable Impact on greenhouse gas production that the 2030 General Plan implementation would have. With the implementation of mitigation measures designed to minimize impacts and adherence to rules and policies of BCAQMD, as well as conformance of the project design to General Plan policies to reduce production of air pollutants and greenhouse gases, the air quality and greenhouse gas effects related to the project are considered to be acceptable levels in line with the adopted 2030 General Plan and Climate Action Plan.

5.2.6.5 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

There are no environmental changes to air quality and greenhouse gases that were considered significant and irreversible. All impacts were considered less than significant with the implementation of mitigation measures.

5.2.6.6 Growth-Inducing Impacts of the Proposed Project

The project could result in growth if extension of the Durham Irrigation District's sphere of influence remove previous hurdles to growth and landowners with properties adjacent to the project decide to pursue development of their properties because of these changes. Such developments would have impacts on air quality and greenhouse gas production; however, any estimate of those impacts would be speculative.

5.2.6.7 Cumulative Impacts

Air pollution is primarily a cumulative impact whereby two or more individual effects, when considered together, are considerable, or which compound to increase the environmental impacts. The individual emissions of any project contribute to existing cumulatively significant adverse air quality impacts.

However a project does not, by itself, result in non-attainment of ambient air quality standards. Long-term emission estimates by LSA Associates indicate that with the implementation of mitigation measures AIR-1 and GCC-1, the proposed project would not result in a cumulatively considerable net increase of criteria air pollutants.

The draft northern Sacramento Valley planning Area 2012 Triennial Air Quality Attainment Plan addresses the progress made toward implementing the 2009 air quality Attainment Plan (AQAP) and proposes modifications to control strategies for regional compliance with air standards. The Butte County General Plan recognizes and has adopted these strategies, which makes any project consistent with the General Plan usually found to be consistent with the air quality plans.

The Butte County General Plan recognizes cumulative growth as having an impact on GHG emissions both locally and regionally. While growth itself may have cumulative impacts that cannot be easily mitigated, regulation of project design standards can help mitigate the cumulative impacts from individual projects. Operational design features reduce overall GHG emissions by reducing vehicle miles travelled for residents of proposed projects. The proposed project's solar installations, green building techniques, and prohibition of wood-burning fireplaces or woodstoves are consistent with the General Plan and the Butte County Climate Action Plan, and therefore would not result in a cumulatively considerable net increase of criteria pollutants such as ROG and NOx.

5.3 HYDROLOGY AND WATER QUALITY: FLOOD HAZARD POTENTIAL

5.3.1 INTRODUCTION

This section describes and assesses hazards specifically related to flooding within the project area and proposed construction of the Creekside Estates Subdivision. The project is assessed under both project-specific and cumulative conditions. Potential impacts are identified and mitigation measures designed to reduce these impacts to less than significant.

5.3.2 ENVIRONMENTAL SETTING

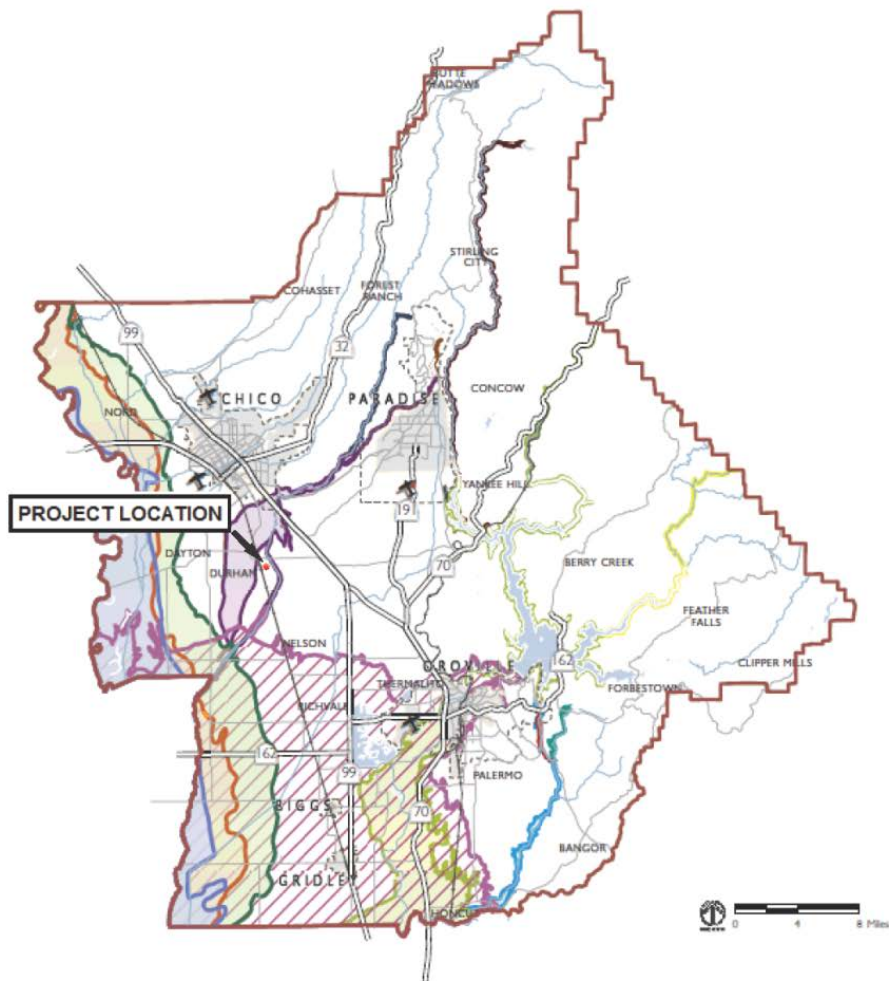
Durham, California, is located in the Sacramento Valley west of the Chico Monocline in the Great Valley Geomorphic Province between the Sierra Nevada and Coastal Range Geomorphic Provinces. The Great Valley formed from a series of geologic events of accretion, seduction and deposition beginning in the late Mesozoic Era, producing a thick sequence of marine sediments. Over time these sediments became randomly overlain by volcanic, alluvial and fluvial deposits into the Miocene to Holocene ages. The deposits that underlie the surficial geology in the area are the Lovejoy Basalt, Tuscan Formation, Riverbank Formation and Modesto Formation. Dynamic geologic processes that have formed the region, including earthquakes and faulting, are of special concern for any project.

Butte County has historically been subject to flooding from various rivers and creeks, most particularly from the Feather and Sacramento Rivers. The County has completed an assessment of flooding hazards as part of the Butte County Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan. Butte Creek and its designated floodplain are considered a principle flood hazard area in Butte County. The boundaries of this floodplain are delineated by FEMA and reviewable through the Flood Insurance Rate Map (FIRM) program.

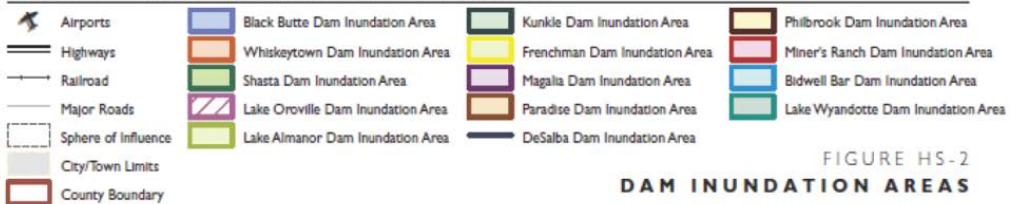
Several dams in Butte County also present potential flooding risk to residents who may or may not live in proximity to those structures. The County has prepared an analysis of these Dam Inundation Areas (Figure 5-2) and included this information in the General Plan for consideration when evaluating projects.

The project area is located within Flood Zone AO as designated by the Flood Insurance Rate Map (FIRM; Figure 5-3) administered by the Federal Emergency Management Agency (FEMA). The AO zone delineates areas that are subject to flood inundation in a 100-year event with an expected flood depth of 2 feet.

**BUTTE COUNTY
GENERAL PLAN 2030
HEALTH AND SAFETY ELEMENT**



Sources: Butte County Geographic Information Systems, 2009; California Office of Emergency Services, 2006.



**FIGURE HS-2
DAM INUNDATION AREAS**

Figure 5-2. Dam Inundation Areas in Butte County. Source: 2030 Butte County General Plan.

National Flood Hazard Layer FIRMette

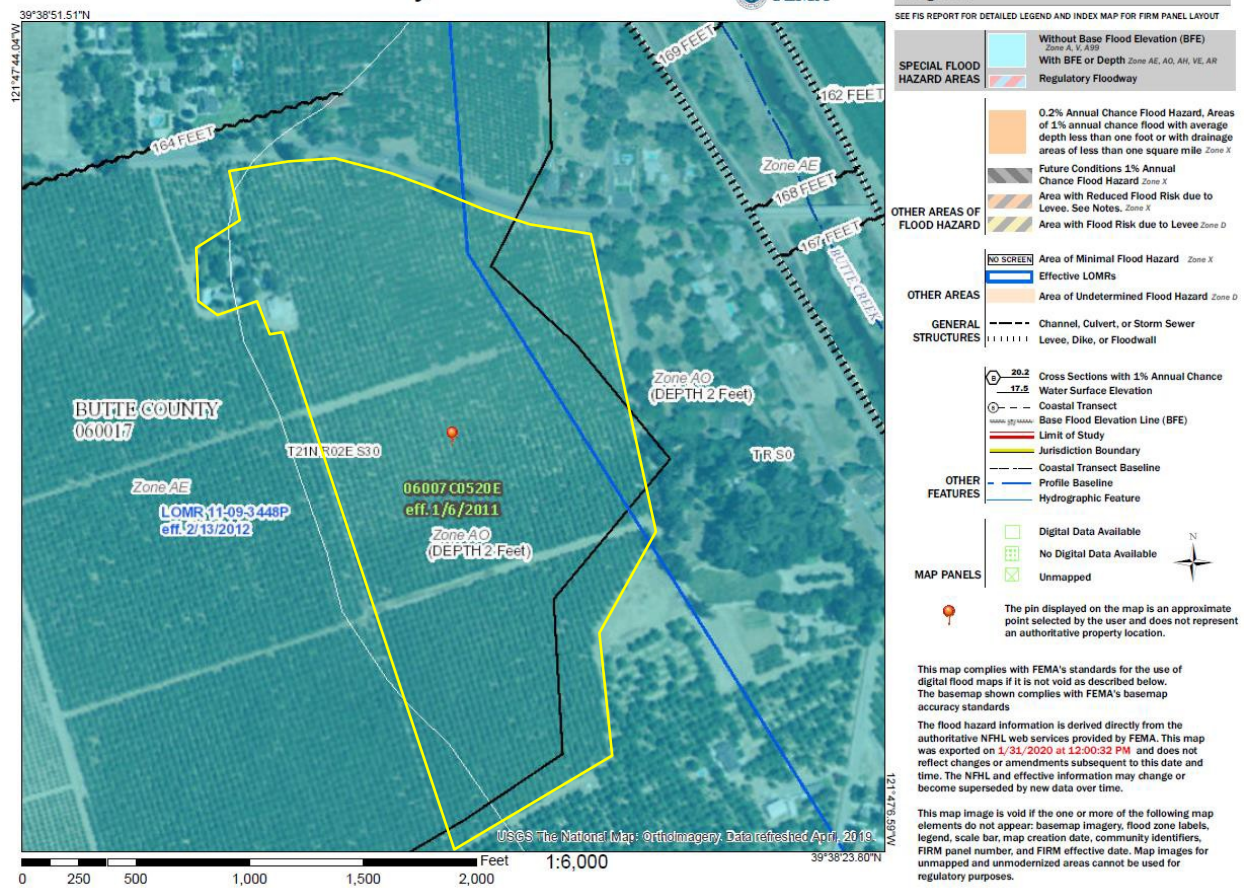


Figure 5-3. FEMA Flood Zones.

5.3.3 REGULATORY SETTING

The following local, state and federal agencies have responsibility for flood protection: US Army Corps of Engineers, Department of Water Resources (DWR), the Central Valley Flood Protection Board and Butte County Service Area 24. Butte County Service Area 24 is only responsible for the project levees on the Chico and Mud Creeks and Sandy Gulch (Sycamore to Mud Creek) Flood Control Project. DWR is responsible for operation and maintenance, including levee and channel maintenance, of all other project facilities on Butte Creek, Cherokee Canal, Chico Creek, Mud Creek, Sandy Gulch, Little Chico Creek, the Feather River and the Sacramento River, including Butte Basin. Developments or encroachment into Butte requires a permit from the Central Valley Flood Protection Board.

5.3.3.1 Federal Regulations

The Federal Emergency Management Agency provides guidance for floodplain management. FEMA manages the National Flood Insurance Program (NFIP), which provides insurance to communities that participate in the program, and works with state and local agencies to adopt floodplain management policies and flood mitigation measures. Federal flood insurance is required for any structure within a Special Flood Hazard Zone (Zone A, AE, AO and AH), for any property that has a federally insured loan.

FEMA mapping of flood hazards for all of Butte County has been completed with the most accurate and up-to-date information derived from the January 6, 2011 FIRM mapping. The Butte county Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan uses information from the January 6, 2011 FEMA data.

5.3.3.2 State Regulations

The Central Valley Flood Protection Act of 2008 directed the DWR to prepare the Central Valley Flood Protection Plan (CVFPP) for Central Valley Flood Protection Board adoption. According to California Government Code Sections 65302.9 and 65860.1, every jurisdiction located within the Sacramento-San Joaquin Valley is required to update its General Plan and Zoning Ordinance in a manner consistent with the CVFPP within 24 months after the CVFPP's adoption (June 29, 2012). In addition, the locations of the state and local flood management facilities, locations of flood hazard zones, and the properties located in these areas must be mapped and consistent with the CVFPP.

California Government Code (Sections 65865.5, 65962 and 66474.5) requires certain flood safety findings be made prior to the granting of permits within an identified flood hazard area. Specifically, the County must find that a flood management facility protects the property to an urban level according to FEMA standards or that progress has been made toward constructing a flood protection system that will provide an urban level of flood protection. The County must also require conditions of approval that will protect the property to an urban level of flood protection according to FEMA standards.

5.3.3.3 Local Regulations

Butte County has addressed hazards and hazardous materials in the Health and Safety Element (Chapter 11) of the 2010-2030 Butte County General Plan. Butte County's regulations concerning development in flood plains are contained in Article IV of Chapter 26 of the Butte County Code. Specific goals, policies, and actions have been.

Flood hazards are specifically considered in the General Plan, and several goals and policies relating to flood hazards have been adopted. Section 5.3.4 of this report compares the Creekside Estates project to each of the goals and policies related to Flood Hazards to determine if the project conforms well to the policies or poses an increased or unreasonable risk to the project area or surrounding lands and residences.

2010-2030 Butte County General Plan

The following Goals, Policies, and Objectives of the Health and Safety Element of the General Plan relate to flood protection and development:

Goal HS-2 Protect people and property from flood risk.

HS-P2.4 Development projects on lands within the 100-year flood zone, as identified on the most current available maps from FEMA (the most current available map at the time of the

publication of General Plan 2030 is shown on Figure HS-1), shall be allowed only if the applicant demonstrates that it will not:*

- a) Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads and intended use.
- b) Create difficult emergency vehicle access in times of flood.
- c) Create a safety hazard due to the height, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.
- d) Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.
- e) Interfere with the existing water conveyance capacity of the floodway.
- f) Substantially increase erosion and/or sedimentation.
- g) Require significant storage of material or any substantial grading or substantial placement of fill that is not approved by the County through a development agreement, discretionary permit, or other discretionary entitlement; a ministerial permit that would result in the construction of a new residence; or a tentative map or parcelmap.
- h) Conflict with the provisions of the applicable requirements of Government Code Sections 65865.5, 65962 or 66474.5.

These sections of California Code describe the responsibilities of cities and counties related to flood management and flood protection facilities, FEMA standards, permitting requirements, and project review (Appx X – California Government Code Sections 65865.5, 65962 or 66474.5). The previous policies, most centrally HS-P2.4(a-g), reflect those requirements. In summary, any project within a flood management zone must substantially demonstrate FEMA standards for flood protection to be approved by the County.

HS-P2.5 The lowest floor of any new construction or substantial improvement within Flood Zones A, AE, AH, AO and shaded Zone X, as shown in Figure HS-1 or the most current maps available from FEMA, shall be elevated 2 feet or more above the 100-year flood elevation (County Flood Ordinance Sec. 26-22). Within urban or urbanizing areas, as defined in Government Code 65007, the lowest floor of any new construction or substantial improvements shall be elevated a minimum of 2 feet above the 200-year flood elevation.

HS-P2.6 After General Plan 2030 and the Zoning Ordinance are amended to be consistent with the Central Valley Flood Protection Plan, scheduled for adoption in July 2012, the County shall make specific findings prior to approval of a development

agreement, subdivision or discretionary permit or other discretionary entitlement, or any ministerial permit that would result in the construction of a new residence. The County shall make findings that it has imposed conditions that will protect the property to the urban level of flood protection, as defined in Government Code Section 65007, in urban and urbanizing areas, or to the national Federal Emergency Management Agency standard of flood protection in non-urbanized areas.

Durham, Dayton, Nelson Specific Plan (D2N)

Goal D2N-7 Limit potential threats to human health and property which may result from natural environmental hazards.

D2N-O7.2 Avoid hydrologic hazards.

Promote urban development outside of existing floodplain, and contain the floodplain within their current boundaries.

D2N-P7.5 Protect the capacity of floodplain and prevent flood damage and associated public relief expenditures created by construction of residential structures in the floodplain.

D2N-P7.6 Identify areas subject to localized ponding and lacking adequate drainage facilities.

D2N-P7.7 Require correction of local storm water ponding conditions prior to development in such areas, either through off-site improvements provided by land developers, or through community storm drain facility capital improvements projects.

Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans

HS-P2.4 through HS-P2.6 of Goal HS-2 may be evaluated on a project level. HS-P2.1 through HS-P2.3 do not apply to project-level policies, but, rather, guidance intended for the County.

The project is situated within the AO and AE zones, but primarily in the AO zone, of the 100-year flood plain as shown on the most recent FEMA Federal Insurance Rate Maps (FIRMs). HS-P2.4 establishes a policy requiring certain conditions be met for properties within the 100-yr floodplain prior to approval. The proponent must not do the following:

- a) Create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads and intended use.
- b) Create difficult emergency vehicle access in times of flood.
- c) Create a safety hazard due to the height, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.

- d) Create excessive costs in providing governmental services during and after flood conditions, including maintenance and repair of public facilities.
- e) Interfere with the existing water conveyance capacity of the floodway.
- f) Substantially increase erosion and/or sedimentation.
- g) Require significant storage of material or any substantial grading or substantial placement of fill that is not approved by the County through a development agreement, discretionary permit, or other discretionary entitlement; a ministerial permit that would result in the construction of a new residence; or a tentative map or parcel map.
- h) Conflict with the provisions of the applicable requirements of Government Code Sections 65865.5, 65962 or 66474.5.

The project conflicts with policies of General Plan Goal HS-2. Potential conflicts exist with the requirements of Policy HS-P2.4 of the General Plan. Mitigation Measures that are designed to reduce the effects of the potential impact to a less than significant level have been developed. The following impacts have been identified:

The project will place residences within an area currently indicated as being within the 100-year flood plain, thereby exposing residents to flooding hazards during a 100-year flood event. This flood zone designation does not take into account the levees situated along Butte Creek that have protected this area from Butte Creek flooding. Efforts are currently underway to accredit those levees and re-designate the area as outside of the 100-year flood zone. Mitigation Measure HYD-1: FEMA Flood Zone Redesignation has been designed to ensure that the developer meets FEMA requirements for the designated flood zone prior to issuance of building permits.

2010-2030 Butte County General Plan

5.3.4 STANDARDS OF SIGNIFICANCE

A project would be considered to have a significant impact on flood hazards according to CEQA, if it would:

- a) Violate any water quality standards or waste discharge requirements;
- 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 preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- 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;

- 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;
- e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- f) Otherwise substantially degrade water quality;
- 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;
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- i) Expose people or structures to a significant risk or loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- j) Result in inundation by seiche, tsunami, or mudflow.

Potential impacts are categorized as “No Impact,” “Less Than Significant Impact,” or “Potentially Significant Impact.” For areas in which “No Impact” or “Less Than Significant Impacts” have been identified, no actions are warranted and the project is considered consistent with the goal, policy, or area of concern. For areas in which as Potentially Significant Impact has been identified, Mitigation Measures have been developed designed to reduce those impacts to Less Than Significant or below.

5.3.5 *METHODS OF ANALYSIS*

Information contained within the project description was compared to the Standards of Significance and assessed for conformity with the 2010-2030 Butte County General Plan, including the Durham Urban Reserve area, the D2N Specific Plan, and General Plan Action AG-A2.1 (Statement of Overriding Considerations).

5.3.6 *IMPACTS AND MITIGATION MEASURES*

5.3.6.1 Assessment of Significance Standards

The project will have no impact on Significance Standard “a,” i.e., it will not violate any water quality or waste discharge requirements. The project proposes installation of individual septic tanks for each lot. The geotechnical study conducted on this property did not find groundwater in test hole dug to 10 feet in depth. All wastewater discharge will be in compliance with discharge requirements of the CVRWQCB.
Less Than Significant Impact.

Significance Standard “b,” evaluates if the project “substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which

permits have been granted).” The project proposes to abandon an existing agricultural well and install a new well that will be constructed to domestic water standards to provide residential drinking water and water available for fire protection. Although a new well will be added, current levels of water usage will not be significantly altered due to concurrent abandonment of an existing agricultural well that utilizes higher water volumes than the proposed subdivision. The impact of the new well on water supply is assessed in detail in Section 5.5 Public Services: Domestic Water Supply.

Although the project will add new impervious surfaces to the area in the form of streets, driveways, and structures, this is not anticipated to significantly impact the local groundwater table because storm water will be conducted to a subterranean infiltration system. **Less Than Significant Impact.**

Significance Standard “c” is not met if the project “creates or contributes runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.” The project will create new impervious surfaces (roads, driveways, and roofs) that will increase the rate of surface runoff during storm events. Roads and driveways create new sources for polluted runoff water. However, project design serves to minimize this impact by incorporating a flood control area designed to control, redirect, and store excess storm waters and flood waters. The developer has provided a detailed drainage plan for review by the Department of Public Works, which must approve the plan before the Final Map is recorded. Street side storm drains will direct excess storm water into a subterranean storm water collection and infiltration system.

Infrastructure within the public right of way will be maintained by a County Permanent Road Division (PRD). If storm drainage facilities serve new public roads, the developer must complete the formation of a County Service Area (CSA), Zone of Benefit within a Permanent Road Division (PRD), or other Department of Public Works approved entity prior to recordation of the Final Map. The formation process will require the developer to fund the service until the beginning of the first fiscal year in which service charges can be collected and agree to an annual maximum service charge to ensure continued operation of the facilities. In addition, a construction storm water permit shall be acquired from the State Water Resources Control Board prior to initiation of construction or grading. With formation of the CSD and PRD, conformance with standard conditions (construction storm water permit and approved drainage plan), the project is not anticipated to provide significant impacts to water quality or waste discharge. **Less Than Significant Impact.**

With conformance to the permit requirements specified above, the project will not result in substantial erosion or siltation on- or off-site (Significance Standard “c”) or an increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site (Significance Standard “d”). **Less Than Significant Impact.**

The project does not include any additional sources of water usage other than residential and landscape uses. No additional source of discharge is identified. The project will not otherwise substantially degrade water quality as assessed by Significance Standard “f.” **No Impact.**

Standard of Significance “” requires analysis to consider if projects will “expose people or structures to a significant risk or loss, injury, or death involving flooding, including flooding as a result of the failure of a

levee or dam.” Minor berms approximately 5 feet above surrounding ground elevations are situated along both sides of Butte Creek in the area near the project site. Failures or breaches in this berm would not appreciably alter the direction, stage, or intensity of flooding events. With adherence to the Mitigation Hyd-1, the project’s impact in this category is considered Less Than Significant Impact.

The project is not situated in an area prone to seiches, tsunamis(coastal areas), or mudflows (steep slopes). **No Impact.**

Significance Standards “g” and “h” relate to placing homes or structures within 100-year flood hazards zones. The project area does lie within Zone AO, which is defined as a special flood hazard area subject to inundation by the 1% annual chance flood (100-year flood). AO flood zones typically are inundated to depths between 1 and 3 feet; this area is indicated as having a 2 foot flood depth. Flooding in this area is described as usually sheet flow on sloping terrain. This description corresponds well with the topography of the site and expected flood water characteristics, including sheet flow on flat, gently sloping lands.

The levees on Butte Creek downstream of Skyway are not currently accredited by FEMA as providing the necessary level of flood protection for 100-year flood events. However, the project engineer has evaluated the levees in the vicinity of the project area and has found that they likely meet FEMA’s criteria for accreditation. To certify the levee, a registered engineer must provide documentation levee meets the requirements of 44 CFR, Section 65.10 (the government code that provides the minimum design, operation, and maintenance standards levee systems must meet and continue to meet in order to be recognized as providing protection from the base flood on a Flood Insurance Rate Map), that the data is accurate to the best of the certifier’s knowledge and that the analyses are performed correctly and in accordance with sound engineering practices. Once it is shown that the levee meets the specific criteria to provide risk reduction from at least the one percent annual chance of flood, FEMA can accredit the levee and show the area behind it as being in moderate risk on a FIRM. After the FIRM is revised, the project area and other areas in the vicinity that are protected by the same section of levee will be effectively removed from Zone AO. In that case, the significance standards “g” and “h” would no longer apply to this project. If levee certification, accreditation and FIRM map revision cannot be accomplished or completed within a timely manner, the County may still allow the project, if the project applicant has demonstrated that the development will meet the goals of its Health and Safety policies designed to protect people and property from flood risks. The County may require the developer to submit a flood analysis for the site, showing that structures would not be impacted by 100-year flood conditions under the current design or a modification of the current design that meets all other project requirements. **Potentially Significant Impact**

In order for potential impacts relating to place houses and structures within a flood hazard zone to be considered less than significant, the following mitigation must be followed:

Mitigation Measure HYD-1: Adherence to Butte County standards for development within a flood zone. The project will be built in accordance with Butte County standards and requirements for construction within the designated flood zone.

Potentially significant volumes of excavated material will be present on site during construction of the water, septic, and storm water detention systems. Temporary stockpiling of excavated material will occur. Temporary stockpiles in the floodplain may increase the hazard of loose sediment becoming entrained in flood flow if a flood event were to occur during construction activities. **Potentially Significant Impact.**

This hazard may be reduced to less than significant through appropriate timing of soil stockpiling outside of the season of greatest flood risk. Remedial actions, such as off-site storage, should be required if excess stockpiled material is present after the construction window closes.

Mitigation Measure HYD-2: Timing of Excavation

Construction requiring excavation of material and temporary on-site storage of excavated material shall be limited to the dry season, or between April 15 and October 15 of the construction year.

Mitigation Measure HYD-3: Remedial Off-site Storage of Excavated Material

All excess material excavated during construction shall be transported off site and outside of the currently designated flood zone. Stockpiling of soil shall not occur on site outside of the designated construction window of April 15 through October 15.

<p>Goal HS-3 Prevent and reduce flooding.</p>
--

HS-P3.1 Watersheds shall be managed to minimize flooding by minimizing impermeable surfaces, retaining or detaining storm water and controlling erosion.

HS-P3.2 Applicants for new development projects shall provide plans detailing existing drainage conditions and specifying how runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility and shall provide that there shall be no increase in the peak flow runoff to said channel or facility.

HS-P3.3 All development projects shall include storm water control measures and site design features that prevent any increase in the peak flow runoff to existing drainage facilities.

HS-P3.4 Developers shall pay their fair share for construction of off-site drainage improvements necessitated by their projects.

The project creates new impenetrable surfaces associated with streets, driveways, sidewalks, and other paved surfaces, and the project applicant has prepared a drainage plan that describes the drainage design for the development area, including storm drains and below-street detention basins. A Storm water Pollution Prevention Plan (SWPPP) will be prepared and any resulting best management practices required by the plan will be implemented.

Impacts to the peak flow runoff to Butte Creek are not anticipated to be significant because the project will provide increased retention of storm water and no new source of runoff is created.

The developers will pay their share of construction costs for any off-site improvements necessitated by their project. No off-site improvements have been identified in relation to flood control facilities, drainage facilities, or water conveyance structures that would be necessitated by the project.

The project is considered consistent with the policies associated with Goal HS-3.

Goal HS-4 Reduce risks from levee failure.

HS-P4.1 The County supports the efforts of regional, State or federal agencies to study levee stability throughout the county, particularly levees that were designed and constructed to provide a minimum 100-year level of protection.

HS-P4.2 The County supports the efforts of levee owners and regional, State, or federal agencies to design and reconstruct levees that do not meet flood protection standards (200-year for urban or urbanizing areas, 100-year for all other areas) to bring them into compliance with adopted State and/or federal standards.

HS-P4.3 New development proposals in levee inundation areas shall consider risk from failure of these levees.

The project is considered to be consistent with the policies established by Goal HS-4. A central feature of the project is the study and accreditation of the levees along the west bank of Butte Creek in the Durham area. These levees have prevented and reduced the severity of flooding in the area since their construction. However, their lack of accreditation through FEMA has resulted in lands along this levee being considered within the 100-year flood plain and within the Butte Creek Flood Hazard Area.

The risk of levee failure is considered higher for non-accredited levees. However, preliminary analysis of the levees along the west bank of Butte Creek in the vicinity of the project by the project engineer suggests they were constructed to and meet the criteria for FEMA accreditation and do, in fact, effectively reduce the flooding risk to that area for a 100-year flood event. Accreditation of these levees will establish the basis for removal of the project area and surrounding lands from the FEMA designated 100-year floodplain.

Goal HS-5 Reduce risks from dam inundation.

HS-P5.1 New development proposals in dam inundation areas, as mapped in Figure HS-2 or the most current available mapping, shall consider risks from failure of these dams.

HS-P5.2 Risk of failure on new development proposals in the dam inundation areas for the Black Butte, Whiskeytown and Shasta dams shall be coordinated between the Bureau of Reclamation, Butte County Department of Development Services and Butte County Office of Emergency Management.

The project is considered consistent with the policies adopted in support Goal HS-5. According to the Health and Safety Element of the Butte County General Plan (Figure 6), the project area lies nearby but outside of the Magalia Dam Inundation Area. As such, the project area is considered safer from dam inundation than the majority of Durham properties situated to the east of the proposed project area. Because the project does not lie within the Black Butte, Whiskeytown, or Shasta dam inundation area, no additional coordination with the agencies listed in HS-P5.2 is required.

Goal D2N-7 Limit potential threats to human health and property which may result from natural environmental hazards.

The D2N Plan considers natural environmental hazards to be both geologic and hydrologic in nature. Objective D2N-O7.2 considers hydrologic hazards.

D2N-O7.2 Avoid hydrologic hazards.

a. Promote urban development outside of existing floodplain, and contain the floodplain within their current boundaries.

D2N-P7.5 Protect the capacity of floodplain and prevent flood damage and associated public relief expenditures created by construction of residential structures in the floodplain.

D2N-P7.6 Identify areas subject to localized ponding and lacking adequate drainage facilities.

D2N-P7.7 Require correction of local storm water ponding conditions prior to development in such areas, either through off-site improvements provided by land developers, or through community storm drain facility capital improvements projects.

Objective D2N-O7.2 is similar to Goal HS-2 and HS-3 discussed above. Avoidance of hydrologic hazards is demonstrated through Mitigation Measure HAZ-1: FEMA Flood Zone Redesignation.

5.3.6.2 Significant Environmental Effects of the Proposed Project

Potentially Significant Impacts have been identified regarding hydrology, which may be mitigated to Less Than Significant through adoption of Mitigation Measures provided. With the adoption of those Mitigation Measures, there is no identified impact that would cause significant environmental effects. Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

There are no unavoidable significant environmental effects regarding hydrological hazards with the proposed project. All potentially significant environmental impacts are reduced to less than significant through the mitigation measures provided.

5.3.6.3 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

There are no significant environmental changes in the areas of hydrology and water quality considered to be irreversible with implementation of the proposed project.

5.3.6.4 Growth-Inducing Impacts of the Proposed Project

The project would create both direct and indirect growth inducing impacts. The project proposes 47 lots, one of which is already developed with a residential dwelling. The project would add 46 residential dwellings, or about 120 people (2.6 people per home; 2000 US Census results). The accreditation of the levee along Butte Creek and the Redesignation of portions of the Durham Area as outside of the FEMA 100-year flood plain would have additional unspecified growth inducing impacts by removing what has previously been a hurdle to development. Infrastructure improvements for this project are not designed to handle additional development.

5.3.6.5 Cumulative Impacts

The project is not considered to have cumulative impacts on flood hazards potential with the implementation of the mitigation measures provided.

5.4 LAND USE AND LAND PLANNING: ZONING & AGRICULTURAL CONVERSION

5.4.1 INTRODUCTION

This section describes and assesses existing and proposed land use within the vicinity of Creekside Estates Subdivision. The project is assessed under both a project-specific and cumulative conditions. Potential impacts are identified and mitigation measures designed to reduce these impacts to less than significant are provided.

Analysis is based on the revised project description, the Butte County General Plan Chapter 4: Land Use Element, Chapter 13: Neighborhood and Area Plans Element, Appx. A: Goals.

5.4.2 ENVIRONMENTAL SETTING

The parcel is designated Very Low Density Residential in the Butte County General Plan as and is currently zoned VLDR (Very Low Density Residential 1-acre minimum parcel size) in the current Butte County Zoning Ordinance. It is surrounded by other properties designated VLDR as well as AG-20 (Agricultural 20-acre minimum) and is separated from the core of downtown Durham by a strip of General Industrial (GI) along the railroad.

The project area is also located within the existing General Plan's boundaries for the "Urban Reserve" portion of Durham and the community boundaries as identified in the 1992 Durham Dayton Nelson Plan and incorporated into Section I of the Area and Neighborhood Plans Element of the Butte County General Plan 2030. An urban reserve policy has been adopted for the Durham Dayton Nelson Planning Area due to the planning and developing interrelationships involved and recognition of the need to balance competing land uses such as agricultural versus residential.

5.4.3 *REGULATORY SETTING*

5.4.3.1 *Federal Regulations*

Land use regulation is traditionally the domain of local governments and municipalities. Use of one's land within the limitations imposed by local land use designations is a basic private property right.

However, two major federal acts do serve to limit use of land. These are the National Historic Preservation Act (1966) and the National Environmental Policy Act (1970).

5.4.3.2 *State Regulations*

The California Environmental Quality Act (1970) is the state equivalent of NEPA. The requirements of this Act are met through the environmental studies, assessment, and reporting that comprise this Environmental Impact Report. The State of California regulates land use through Title 7 of the California Government Code [65000. - 66499.58.], which contains many of the laws pertaining to the regulation of land use by local governments, including the general plan requirement, specific plans, subdivisions, and zoning. The State is not typically involved in specific land use decisions, having relegated that authority to cities and counties.

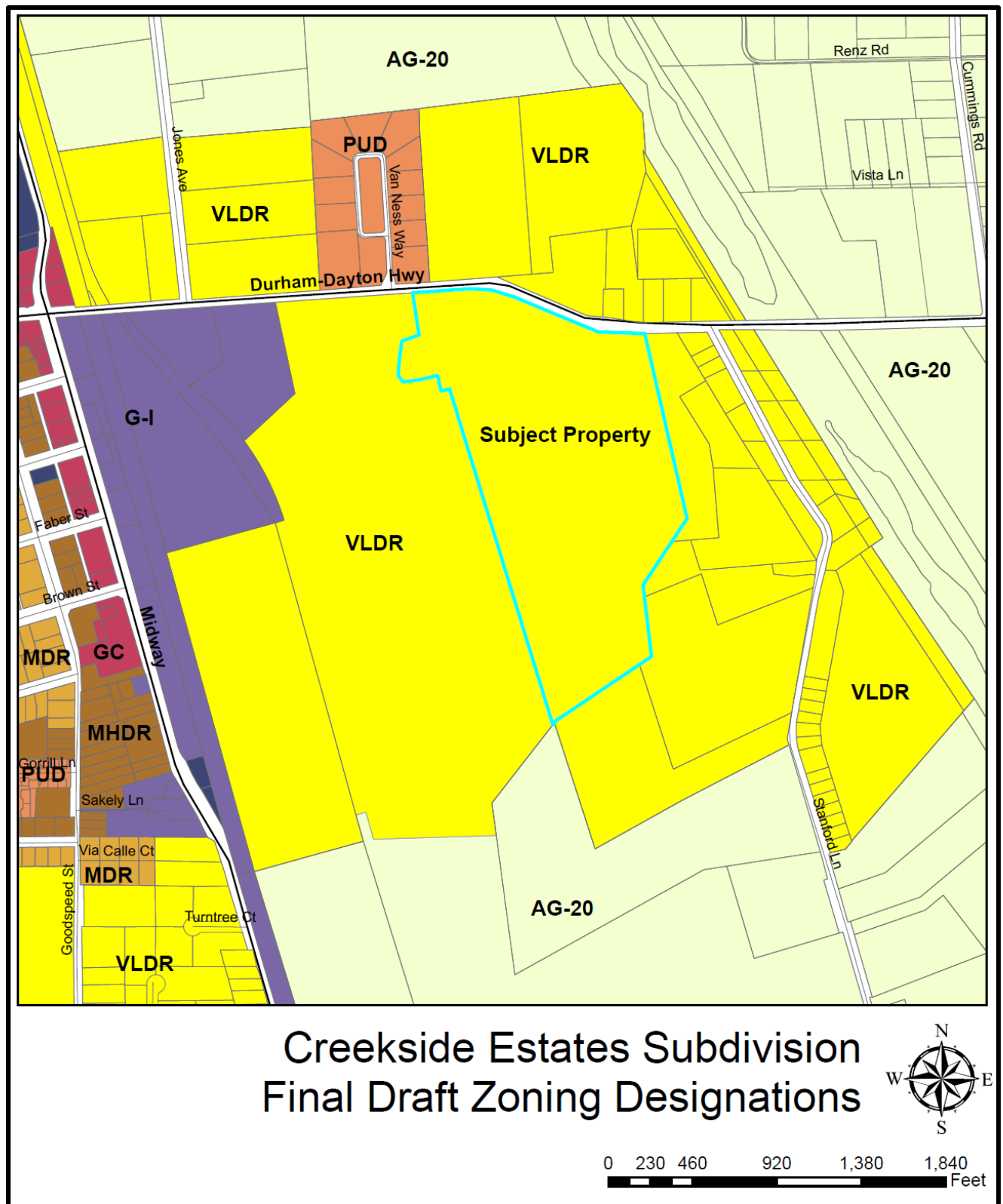


Figure 5-4. General Plan Zoning Designations of Creekside Estates Property and Adjacent Properties. Source: Butte County Planning Division.

5.4.3.3 Local Regulations

Zoning is a municipal property right exercised through community development and adoption of local and municipal land use ordinances and general plans.

Butte County General Plan 2030

The Land Use Element (Chapter 4) of the Butte County General Plan establishes goals and policies addressing land use for rural areas and unincorporated communities within Butte County as required by California Government Code Section 65302(a) and Public Resources Code Section 2762(a). The Land Use Element addresses the distribution, location and extent of the uses of land in the planning area and establishes standards of population density and building intensity for the various land use designations.

The Area and Neighborhood Plans Element (Chapter 13) of the General Plan includes Specific Plans adopted by some unincorporated communities within Butte County and includes the Durham-Dayton-Nelson Plan (D2N Plan). The goals, objectives, and policies of the D2N Plan were adopted with the General Plan and the Land Use Ordinance. General Plan Amendments, rezones, subdivision approvals and subsequent urban development must adhere to the additional criteria of development outlined in Section I of the Area and Neighborhood Plans Element. These additional criteria include the following:

- A water plan establishing service area and describing facilities and lines;
- A park and open space plan identifying locations and standards;
- An environmental plan identifying critical areas to protect, if applicable;
- A street and transportation plan describing the system and impacts;
- Health department standards for control of septic systems and water wells;
- A fiscal plan identifying reimbursements from the subdivision for their proportion of public facility costs;
- A capital improvement plan indicating where and when physical improvements are to be made; and
- A description of improvements and how they will be financed.

The goals, policies, and objectives of both the General Plan and the D2N Plan are implemented through the Butte County Zoning Ordinance, adopted November 2012.

D2N Specific Plan

The Durham-Dayton-Nelson Plan addresses issues related to land use for three unincorporated communities within Butte County. The following policies relate to land use:

- Policy D2NP4.4 Foster a compact rather than a scattered development pattern in order to discourage urban sprawl, to reduce the extension and cost of public services, and to preserve open space within the Planning Area and;
- Policy D2N-P8.1 Concentrate future residential uses within or near existing developed communities.

Urban Reserve Policy

The Durham–Dayton–Nelson Planning Area Urban Reserve Policy (Butte County General Plan, Area and Neighborhood Plans Element, pg. 368) establishes lands held in reserve for future development as a way to guide growth in an orderly fashion through the 2010-2030 planning period. The Policy allows for the preponderance of lands surrounding these rural communities, including Durham, to remain rural in character by promoting growth in concentrated areas of mixed uses and discouraging growth elsewhere.

Development of the Urban Reserve Policy and adoption of the Policy within the Butte County General Plan is the result of years of planning efforts that took into account the diverse interests of stakeholders within the county, sound planning strategies, and the County’s obligations that exist through state and federal planning regulations.

The Durham–Dayton–Nelson Planning Area Urban Reserve Policy is as follows (Butte County General Plan, Area and Neighborhood Plans Element, pg. 368):

- The County's land use policy, zoning and subdivision regulations shall be coordinated with the Urban Reserve policies and regulations; and
- All property located in the planning area shall be managed as an “URBAN RESERVE,” not permitting rural residential development and uses on parcels less than 3 acres until such time as they are needed for development and adequate services are available to serve this area; and
- Any proposal for a General Plan Amendment, rezoning or subdivision which would permit parcels of less than 3 acres to be created for residential use shall be coordinated with all public agencies which provide utility and public services for extension of water, circulation, and drainage, and shall be required to submit the following plans prior to or concurrently with the adoption.
 - A capital improvement plan/program that indicates where and when physical improvements are to be made, the size of these improvements, standards, and lines to service the area, and how they will be financed. This plan should be based on the desired land pattern for future growth, the costs of initial service, and the continued operation costs to the designated area.
 - An environmental plan that identifies critical areas that should be protected from development if applicable.

- A street and transportation plan that indicates the location, capacity and nature of the system and off-site transportation impacts.
- Health department standards for control of septic systems, and water wells. Areas where wells and septic systems are not permissible should be identified.
- A fiscal plan that identifies the proportion of costs of public facilities and services that is to be reimbursed from new subdivisions.
- Any parcel which is now less than 20 acres which was legally created, preexisting and non-conforming may be developed according to its zoning and the provisions of Butte County Code Section 24-35.
- Development standards of the County utilized in other urban areas for developments less than 1 acre shall be utilized for all residential development projects within the Urban Reserve Area.

5.4.4 *STANDARDS OF SIGNIFICANCE*

A project would be considered to have a significant impact on land use according to CEQA if it would result in any of the following actions:

- a) Physically divide an established community;
- b) Conflict with an applicable land use plan, policy, or regulations of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or,
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan

5.4.5 *METHODS OF ANALYSIS*

The project was assessed according to pertinent federal, state, and local regulations as adopted by locally applicable planning authorities to determine the potential impact level the proposed project will have with a focus on land use and agricultural conversion. Agricultural conversion was also considered separately under the Agricultural Resources section of this document. Analysis is based on the information provided in the revised project description and the Butte County General Plan Chapter 4: Land Use Element and Chapter 13: Neighborhood and Area Plans Element, Appx. A: Goals. Project characteristics were assessed for conformance with the specific goals, objectives, and policies of those plans.

5.4.6 *IMPACTS AND MITIGATION MEASURES*

5.4.6.1 *Assessment of Significance Standards*

The Creekside Estates project will not physically divide an established community, as assessed by Significance Standard “a.” The project is located in an area that is designated and zoned, Very Low

Density Residential. It is in close proximity to the downtown core area of Durham and has been targeted through the Durham Urban Reserve Policy and the General Plan as an area appropriate for residential growth because of its adjacency to the downtown area, among other reasons. **Less Than Significant Impact.**

Standard of Significance “b” requires assessment of the compatibility of the project with County goals and policies relating to land use and asks if a project will cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? The discussion of compatibility with land use goals and policies follows the discussion of assessment against CEQA Significance Standards because of its lengthiness and redundancy with the section in which assessment of consistency with local goals and plans is made. The project was found to be consistent with County policies and goals related to land use. **No Impact.**

5.4.6.2 Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans

Butte County General Plan goals and numerous policies relate to land use and are pertinent to development projects either directly, as they dictate conditions to which developers must adhere, or more tangentially, as they guide efforts of the County in the planning process that affect where and how development projects are carried out.

The following selection of land use goals and policies were found to be most relevant to the Creekside Estates project or planning relating to similar development projects in the Durham area and were used to evaluate the consistency of the project with County policies.

Goal LU-1 Continue to uphold and respect the planning principles on which the County’s land use map is based.

LU-Policy 1.1 The County shall protect and conserve land that is used for agricultural purposes, including cropland and grazing land.

LU-P1.3 The County shall minimize potential conflicts between agricultural and urban uses.

LU-P1.6 The County shall conserve important habitat and watershed areas, while protecting the public safety of County residents.

LU-P1.8 The County shall support community planning efforts by and for unincorporated communities.

Goal LU-2 Provide for orderly, well-planned, and balanced growth that maintains private property rights.

LU-P2.1 The County shall allow reasonable “freedom of choice” of sites and facilities for the population growth of the county, both in the county as a whole and targeted to specific areas.

LU-P2.2 Economic use and value of private property shall be maintained.

LU-P2.3 The County shall support planning efforts in unincorporated communities by providing knowledge, time and materials to community efforts.

LU-P2.4 As resources become available, the County shall engage willing and interested unincorporated communities in community planning processes to set a community vision and develop Area Plans. Urban growth boundaries, community boundaries and spheres of influence may be developed as part of such processes.

LU-P2.6 The General Plan 2030 Environmental Impact Report (EIR) assumes the following maximum development projections for the year 2030 for the lands located within unincorporated Butte County:

- 13,600 new homes.
- 1.7 million square feet of new retail and office space.
- 1 million square feet of new industrial space.

Goal LU-3 Create communities where there is a sense of well-being where families and neighbors can socialize, interact, and play.

LU-P3.2 Newly-developed neighborhoods shall include parks and recreation facilities. Sidewalks, bike paths, and other routes shall provide circulation to surrounding areas.

LU-P3.3 Newly-developed neighborhoods shall create a safe environment by providing adequate lighting and clearly marked crosswalks.

Goal LU-7 Promote public participation in the County’s planning processes.

LU-P7.3 Sponsors of new development projects shall have early and frequent communication with affected citizens and stakeholders.

LU-P8.2 The County shall direct projected growth to areas where the appropriate level of transportation infrastructure is or will be available during the planning period.

Goal LU-8 Promote development near existing infrastructure and services, and within already- developed areas.

LU-P8.3 Applicants intending to develop sites served by existing public facilities shall be encouraged to develop at the highest allowable density and intensity.

LU-P8.5 Stores providing goods and services to support daily life in neighborhoods should be located within walking distance to the majority of neighborhoods.

Goal LU-9 Coordinate land development with provision of new services and infrastructure.

LU-P9.1 The County shall work with municipalities and service providers to ensure that services are available for new development and consistent with master plans.

LU-P9.2 The County shall balance development densities with the traffic-carrying capacities of existing and proposed circulation plans.

LU-P9.3 The County shall work cooperatively with the Local Agency Formation Commission (LAFCO), municipalities and all irrigation districts if annexation of agricultural areas is proposed for urban development to ensure the integrity of irrigation structures that serve off-site landowners.

LU-P9.4 Applicants shall provide evidence of adequate infrastructure capacity to serve the projected buildout of proposed development projects.

LU-P9.5 New development projects shall provide their own infrastructure or tie in to existing infrastructure as it is built.

LU-P9.6 Large development projects, as determined by the Department of Development Services that may not be served at adequate levels by existing public services (e.g. staffing, equipment and facilities) shall be subject to additional fiscal review before gaining full entitlements to develop. The applicant shall prepare a fiscal impact analysis that identifies any fiscal mitigation measures needed to ensure that the County will be able to maintain adequate service levels and fiscal sustainability.

Goal LU-10 Ensure that services and infrastructure are adequately funded.

LU-P10.1 The County shall consider the creation of additional assessment districts, county service areas and/or special districts to fund and manage new and improved infrastructure.

LU-P10.2 New development projects shall pay their fair share of public improvement costs for countywide infrastructure, facilities, and services, and shall fund needed

infrastructure and facilities proportionately to the cost of providing infrastructure and services.

LU-P10.3 Applicants for new development projects that will not be adequately served by existing infrastructure and facilities and/or through the adopted countywide impact fee program shall prepare a public facilities financing plan that identifies the needed public improvements and establishes a plan to pay for and develop the required public improvements.

Goal LU-15 Direct development to existing urbanized areas.

LU-P15.1 The County shall prevent scattered development patterns and encourage development in existing urbanized areas, and in particular areas that have access to public services and infrastructure.

LU-P15.2 New urban development shall be primarily located in or immediately adjoining already urbanized areas.

LU-P15.3 The County shall encourage efficient urban infill development within municipal limits, municipal spheres of influence, and existing unincorporated communities where development can readily be served by public infrastructure facilities.

Goal D2N-2 is subdivided into two separate objectives, assessed below with their associated policies.

D2N-O2.1 Housing supply.

- a) Ensure an adequate supply of housing to meet the needs of all segments of the Planning Area.

D2N-O2.2 Housing standards.

- b) Ensure that housing for all segments of the community is safe, sanitary and of the highest possible quality.

Goal D2N-8 Ensure that the area's growth is in accordance with the desires and needs of the community, that future developments are safer and healthier as human habitats, more resilient to deteriorating forces and more consistent or harmonious with natural processes.

D2N-O8.1 Manage existing and future land use.

Promote a growth rate which reflects a well-planned and controlled expansion of the area.

D2N-P8.1 Concentrate future residential uses within or near the existing developed communities.

D2N-P8.2 Control the direction and amount of growth through the planning and regulation of public facilities.

D2N-P8.3 Establish appropriate growth guidelines which will achieve a balance and relationship between urban expansion and the natural environment.

D2N-P8.7 Encourage and maintain agriculture as the predominant land use of the Planning Area.

Designation of the Durham Urban Reserve Area was the result of years of community effort and input regarding the appropriate growth levels and the areas within the county to which future growth would be best directed. The establishment of the Urban Reserve Area and the associated change in land use designation to VLDR with the adoption of the General Plan were part of a dual-pronged planning strategy to preserve the rural character of Durham area and protect its important agricultural lands while still allowing for some growth and economic development. The Urban Reserve is an important element of the D2N Plan and is intended to minimize potential conflicts between agricultural and urban uses, as directed by LU-P1.3, by concentrating growth in these designated areas. The project is consistent with Goal LU-1 and reflects the planning efforts of the adopted Butte County Land Use Plan, including the D2N Plan and the Durham Urban Reserve.

The Creekside Estates property is currently under agricultural production. Development of Creekside Estates helps to maintain the value of the lands that are currently operating at lowered productivity due to an *Armillaria* fungus infection. The decision to remove a compromised agricultural parcel from production and maintain property values through development is an important exercise of reasonable “freedom of choice” for the property owner, as supported by policies, LU-P2.1 and LU-P2.2.

The project meets the multiple requirements for developments within the Durham Urban Reserve. (LU-P1.2, LU-P1.9, D2N-P8.4)

The project is consistent with Goal LU-3 and associated policies through design elements that incorporate bicycle path interconnectivity, sidewalks, and adequate lighting.

Consistent with policies relating to the Goal LU-7, which directs the County to promote public participation in the County’s planning process, the project applicants have redesigned the project to address concerns raised by public during the Public Hearing on the previous project proposed, Durham Villas. They have also worked with neighbors with affected orchards to develop a mutually agreeable buffer design.

Goal LU-9 and associated policies seek to coordinate development with provision of new services and infrastructure. In accordance with LU-P9.1 and LU-P9.3, the County and project developers have worked with Durham Irrigation District to ensure provision of water to the development. The project includes establishment of a Permanent Road Division for maintenance of the projects roads, drainage and lighting. Traffic carrying capacities of the existing road system was analyzed with a traffic study, as

directed by LU-P9.2) and found to be able to support additional traffic generated by the project. Additional analysis of the project's impact on existing public services is found in Section 5.5 of this EIR.

Consistent with Goal LU-10 and related policies, which seek to ensure adequate funding for developments and related infrastructure improvements, the project applicant will be required to pay fees to cover a proportion of public improvement costs.

In summary, the proposed project was found to be consistent with the goals and policies of the General Plan. No significant adverse impacts were identified and no mitigation measures developed.

5.4.6.3 Significant Environmental Effects of the Proposed Project

There are no environmental effects in the category of land use from the project and planning that were considered to be significant.

5.4.6.4 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

No irreversible environmental changes relating to land use and planning would result from the project.

5.4.6.5 Growth-Inducing Impacts of the Proposed Project

The project is not expected to produce significant levels of growth that will adversely affect land use and planning. Rather, the project is in keeping with the County's desired planning for growth within the Durham area and is consistent with General Plan goals and policies related to land use and planning.

5.4.6.6 Cumulative Impacts

The project is consistent with the County's desired planning strategies for the Durham area, which have taken into account the cumulative impacts of growth through the General Plan planning process.

.

5.5 PUBLIC SERVICES: DOMESTIC WATER SUPPLY

5.5.1 INTRODUCTION

The project is consistent with the County's desired planning strategies for the Durham area, which have taken into account the cumulative impacts of growth through the General Plan planning process.

5.5.1.1 Domestic Water

Water is to be delivered to the site by the Durham Irrigation District, which currently serves customers in Durham. The Durham Irrigation District will extend their main waterline located west of the project site. The project proposes to abandon an existing agricultural well and install a new well to support Durham Irrigation District's water supply. The well will be constructed to domestic water standards to provide residential drinking water and water available for fire protection. Although a new well will be added, current levels of water usage will not be significantly altered due to concurrent abandonment of an existing agricultural well that utilizes higher water volumes than the proposed subdivision. Water supply will be under the control of the Durham Irrigation District (DID).

5.5.1.2 Wastewater/Septic

The project proposes installation of individual septic tanks for each lot. All wastewater discharge will be in compliance with discharge requirements of the County with oversight by the Butte County Public Health Division. Central Valley Regional Water Quality Control Board (CVRWQCB).

5.5.1.3 Storm water

The project will create new impervious surfaces (roads, driveways, and structures) that will increase the rate of surface runoff during storm events. Roads and driveways create new sources for polluted runoff water; however, the project design serves to minimize this impact. A construction storm water permit shall be acquired from the State Water Resources Control Board prior to initiation of construction or grading.

Project design incorporates a flood control area designed to control, redirect, and store excess storm waters and flood waters associated with a 200-year storm event. Street side storm drains will direct excess storm water into a subterranean storm water collection and infiltration system. The storm drain collection and disposal system will consist of approximately 4,450 linear feet of storm drain leach trenches installed beneath the sidewalks. The proposed conceptual storm drain plan will contain and dispose of all runoff within the proposed development, thereby eliminating storm water runoff from the property.

Infrastructure within the public right of way is to be maintained by a County Permanent Road Division (PRD).

5.5.2 ENVIRONMENTAL SETTING

The project area is situated in the community of Durham within the Butte Creek watershed of northern California. The channel of Butte Creek is located approximately 500 feet east of the eastern boundary of the project area. The creek is channelized along this stretch and bordered by agricultural lands and rural

residences. There are no permanent watercourses, ditches, or wetland features within the project boundaries. Project lands are characterized as flat and leveled, supporting a mature almond orchard.

5.5.2.1 Butte Basin

The Butte Basin lies south of Chico and west of the Feather River and is characterized by an expansive, flat topography. Prior to flood control on the Feather and Sacramento Rivers, it was subject to extensive seasonal flooding. Slow-moving floodwater deposited the fine silt and clay that now comprises rich agricultural soil.

5.5.2.2 Durham Dayton Sub-Inventory Unit of the Butte Basin

The Durham Dayton Sub-Inventory Unit (SIU) covers an area of about 40,000 acres in the heart of the West Butte Inventory Unit. It is bordered by Big Chico Creek to the north, Butte Creek and the Western Canal SUI to the south, Sierra Nevada/Cascade foothills to the east, and the M&T and Llano Seco SIUs to the west. Many agricultural wells in the area draw a significant amount of water from the Tuscan aquifer. In a normal year, 67% of the Durham Dayton SIU in summer agricultural production is supported by groundwater. In addition, 18% of the SIU is within the California Water Service Company area and uses groundwater as a municipal water source. Durham Irrigation District also uses groundwater from the SIU as a municipal source.

In the Sacramento Valley Region of Butte County, fresh groundwater-bearing units include, from youngest (shallowest) to oldest (deepest), the Modesto, Riverbank, Laguna, Tehama and Tuscan Formations. Those included in the Durham Dayton SIU are: Modesto Formation, Tuscan Unit C (Upper Tuscan), and Tuscan Unit B (Lower Tuscan).

5.5.2.3 Water-bearing Properties

The Tuscan Formation exposed in the Foothill Region acts as a recharge area for the aquifer system in the Sacramento Valley. In addition, the Tuscan Formation is the primary source of fresh groundwater to wells in Butte County. Groundwater in Sacramento Valley area of the formation is confined under pressure by layers of impermeable clays and tuff-breccia (DWR 1978).

5.5.2.4 Water Supply Reliability/Sustainability

Aquifer performance tests have been conducted in several areas of Butte County. These tests were used to evaluate the water-bearing characteristics of the Tuscan Formation. Transmissivity (the rate at which water flows horizontally through an aquifer) values within the Butte Basin portion of the East and West Butte Inventory Units ranged from 97,000 to 182,000 gallons per day (gpd) per foot in depth (see Fig. 5.4). Storativity is the volume of water released from storage per unit decline in hydraulic head in the aquifer, per unit area of the aquifer. Storativity values ranged from .0003 to .0015. Specific capacity measurements made for wells in this study provided a range of 45.7 to 104.7 gpm per foot of drawdown (DWR Memorandum Report, 1991, Summary Hydrogeology of Butte County).

Durham is an area of the Tuscan aquifer with high summer demand from agricultural wells. Groundwater levels typically fluctuate seasonally and from year to year. These fluctuations of groundwater levels occur in response to recharge and extraction or natural discharge. Monitoring by the DWR demonstrates that groundwater levels in the Durham area have been relatively consistent over 40 years (Basin Management Objectives for Durham Dayton Sub-inventory Unit 2013). Annual drawdown and recharge patterns have shown a general decline in aquifer levels associated with drought periods and recharge to pre-drought levels during wet years. In recent years, the water levels have shown declines (approximately 2 feet per year) as a result of recharge lagging behind the drawdown over a period with several droughts (Figure 8), a trend that has continued to present.

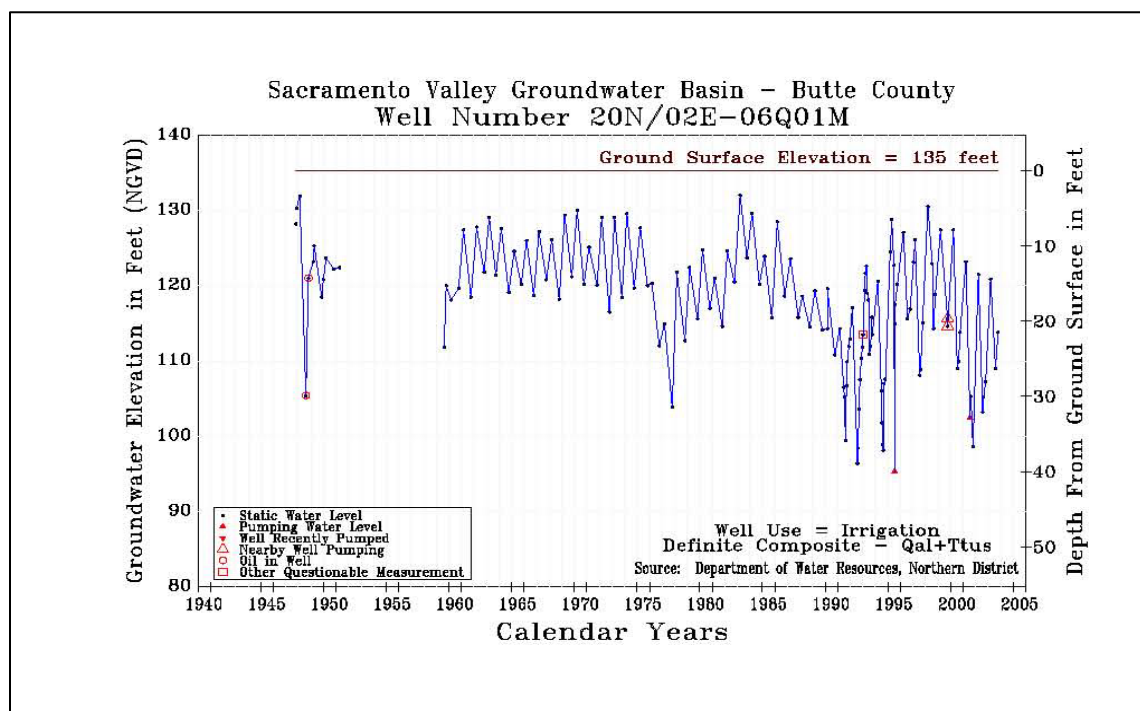


Figure 5-5. Long-term Change in Groundwater Elevation in Durham Dayton Sub-area.
Source: Butte County Water Commission 2004.

Butte County Department of Water and Resource Conservation has done studies within the Lower Tuscan Aquifer to better understand aquifer characteristics and recharge and has five monitoring wells within 2.25 miles of the project site. It is generally understood that recharge occurs through precipitation, infiltration from surface waters, and ubiquitously across the foothill region where the Tuscan Unit A is overlain by alluvial deposits.

Water System

The project area is situated in the rural community of Durham within the Butte Creek watershed of northern California. Durham residents have one drinking water source, with two modes of access: groundwater from personally maintained wells and groundwater from Durham Irrigation District (DID).

The project area is not currently served by a domestic water service provider and surrounding residents are reliant upon individual wells for domestic water. The project area has recently been added to the service boundaries and Sphere of Influence of Durham Irrigation District (DID), the closest domestic water service provider.

The wells and water delivery system of the Durham Irrigation District are operated by Cal Water Chico. The District has three wells that are drawing water; these wells furnish water on demand. One well has a backup generator system that allows it to continue pumping during power outages. There is no storage within the District's system. The water delivery piping is aging and should be replaced in the near future. There are also some pipelines in the system that are difficult to access. The District's domestic water infrastructure is such that service must be interrupted to make repairs or new service connections. The District is in the planning stages, in conjunction with Cal Water Chico, for a series of capital improvements to the water supply system.

Expansion/ Improvements

The DID will supply water for domestic and fire use onsite under an agreement signed in October 2020. Improvements to the water system consist of the installation of a new well and pump with associated filters and a backup generator. The well for the project will be drilled and cased to depths below the surrounding residential water wells to exclude interference from pumping. Additionally, the well(s) will be sited in accordance with the setbacks prescribed by Butte County Code Section 23B-5c, "Well Spacing Requirements." The existing wells will be abandoned and filled in accordance with the Butte County Department of Health standards.

Improvements of the domestic water supply system also include pipelines of 10", 8", and 6" beneath the streets to insure adequate flows for fire hydrants at 500' intervals and fire sprinklers to each residence. The well will be capable of pumping 1500 GPM, in order to meet the maximum demand from fire suppression flows. Residential water usage was calculated by W. Gilbert Engineering Inc. as approximately 288,000 GPD or 200 GPM.

5.5.2.5 Water Quality

Water quality reports provided by Cal Water Chico indicate contaminant levels well below the regulated limits for all contaminants, including arsenic and nitrates. The arsenic in the District's wells ranged from undetectable to 5 ppb (parts per billion). This indicates that the wells are below the limit of 10 ppb, which is the new MCL (maximum contaminant level) that went into effect on January 23, 2006. Water is treated with chlorine at the well prior to delivery (DID Municipal Services Review June 2006).

5.5.3 REGULATORY SETTING

5.5.2.1 Federal Regulations

The Federal Safe Drinking Water Act (SDWA), which was enacted in 1974, gives the United States Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The SDWA was amended in 1986 and amended and reauthorized in 1996. For each of

the 83 contaminants listed in the SDWA, the EPA sets a maximum contaminant level or treatment technique for contaminants in drinking water.

5.5.2.2 State Regulations

The State Water Resources Control Board and the California Department of Public Health (CDPH) are the primary agencies in California responsible for regulating public drinking water. There are many state laws and regulations that have been developed and adopted to assure that public drinking water is safe for human consumption. The majority of these statutes are contained in the Safe Drinking Water Act (Chapter 7 of the California Health and Safety Code). The adoption of implementing regulations and the enforcement of the drinking water laws of California are the responsibility of the California Department of Public Health (CDPH). Although the laws and regulations governing the operation of a public water system are quite detailed, the basic responsibilities of an owner or operator of a public water system are the following:

- Knowledge of and compliance with all drinking water regulatory requirements;
- Obtaining a domestic water supply permit;
- Obtaining and maintaining an adequate source and quantity of water;
- Providing appropriate treatment of the water supply;
- Providing a distribution system that complies with the Waterworks Standards;
- Hiring certified water system operators;
- Providing continuous monitoring of the quality of the water;
- Keeping the consumers informed;
- Responding to emergencies.

A key feature of the Safe Drinking Water Act is the requirement that no person may operate a public water system without having secured a domestic water supply permit from the CDPH. Incorporation of the project area with Durham irrigation District will require appropriate review and approval of the water supply system and ensure appropriate system design and permitting, including CDPH permitting, to minimize impacts.

The State Water Resources Control Board (SWRCB) manages all water rights and water quality issues in California under the terms of the Porter-Cologne Water Quality Control Act (1969). The California Department of Health Services (DHS) has been granted primary enforcement responsibility for the SDWA (see above). Title 22 of the California Administrative Code establishes DHS authority and stipulates drinking water quality and monitoring standards. These standards are equal to or more stringent than the federal standards.

Additionally, two Senate Bills, Senate Bill 610/ Senate Bill 221 (SB 610/221), require assessment of ability of projects to supply water to new developments. SB 610 requires a water supplier to prepare water supply assessment within 90 days if proposed project is defined as a “project” by water code §10912.

SB 221 requires the county or water supplier to provide written verification of sufficient water supply based on substantial evidence. The General Plan prepared by the County Planning Division and the urban water management plan prepared by a water supplier are the critical source documents used to substantiate the information required by SB610 and SB221 at the local level.

Water Code section 10912:

For the purposes of this part, the following terms have the following meanings: (a) “Project” means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections..

The Creekside Estates project does meet the definition of a “project” under SB610 because, though it will include less than 500 residents, it will increase the number of service connections for the public water system. The water supplier, Durham Irrigation District, will ensure compliance regarding documentation of water supply sustainability and reliability.

5.5.2.3 Local Regulations

Several local plans contain goals, policies, and objectives relative to water supply, including the Butte County General Plan, and the Durham Dayton Nelson Area Plan. Specific goals from the General Plan include:

Goal W-1 Maintain and enhance water quality.

W-P1.2 The County shall cooperate with State and local agencies in efforts to identify and eliminate or minimize all sources of existing and potential point and non-point sources of pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling, dump sites, sanitary waste systems, parking lots, roadways and logging and mining operations.

W-P1.3 Regulations that protect water quality from the impacts from agricultural activities shall be maintained.

W-P1.4 Where appropriate, new development shall be Low Impact Development (LID) that minimizes impervious area, minimizes runoff and pollution and incorporates best management practices.

W-P1.5 Pest-tolerant landscapes shall be encouraged to minimize the need for pesticides.

GOAL W-2 Ensure an abundant and sustainable water supply to support all uses in Butte

W-P2.3 Water resources shall be planned and managed in a way that relies on sound science and public participation.

W-P2.4 The County's State Water Project allocation should be fully utilized within Butte County.

W-P2.5 The expansion of public water systems to areas identified for future development on the General Plan land use map is encouraged.

W-P2.6 The County supports water development projects that are needed to supply local demands.

W-P2.9 Applicants for new major development projects, as determined by the Department of Development Services, shall demonstrate adequate water supply to meet the needs of the project, including an evaluation of potential cumulative impacts to surrounding groundwater users and the environment.

Goal W-3 Effectively manage groundwater resources to ensure a long-term water supply for Butte County.

W-P3.3 The County shall protect groundwater recharge and groundwater quality when considering new development projects.

GOAL W-4 Promote water conservation as an important part of a long-term and sustainable water supply.

W-P4.1 Agricultural and urban water use efficiency shall be promoted.

W-P4.6 New development projects shall adopt best management practices for water use efficiency and demonstrate specific water conservation measures.

Goal W-5 Protect water quality through effective stormwater management.

W-P5.2 New development projects shall identify and adequately mitigate their water quality impacts from storm water runoff.

W-P5.3 Pervious pavements shall be allowed and encouraged where their use will not hinder mobility.

W-P5.4 Temporary facilities shall be installed as necessary during construction activities in order to adequately treat storm water runoff from construction sites.

W-P5.5 Storm water collection systems shall be installed concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

In addition, the Durham Dayton Nelson Plan contains the following goals:

Goal D2N-4 Locate, extend and phase community facilities and services to provide for orderly development and economical utilization of resources. Ensure that growth is orderly and does not result in a significant burden to existing levels of public services and facilities.

5.5.3 STANDARDS OF SIGNIFICANCE

An impact is considered significant, as identified by Appendix G of the State CEQA Guidelines, if the proposed project would result in any of the following:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- d) Have insufficient water supplies available to serve the project from existing entitlements and resources, or require expanded entitlements;
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that capacity is inadequate to serve the project's projected demand in addition to the provider's existing commitments;
- f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- g) Be out of compliance with federal, state, and local statutes, and regulations related to solid waste.

5.5.4 *METHODS OF ANALYSIS*

W. Gilbert Engineering calculated the amount of groundwater used by the existing almond orchard on the 49.423-acre project parcel, which would be converted from orchard to housing, and the amount of groundwater consumed by the proposed uses in the Creekside Estates project to help determine potential impacts on water supply (see report in Appendix E). In addition, the project was assessed for consistency with pertinent federal, state, and local regulations as adopted by locally applicable planning authorities to determine the potential impact level the proposed project will have, specifically regarding water supply and discharge.

5.5.5 *IMPACTS*

5.5.5.1 *Existing Orchard Demand versus Project Demand*

The amount of groundwater used by a typical almond orchard is monitored annually by the University of California Cooperative Extension and the information published for use by the public. The analysis Gilbert Engineering used a value of 39" annually, distributed in accordance with published pan evaporation data for the Durham area. For the existing orchard, this amounted to 160.23 acre-feet per year. The amount of groundwater drawn for the residential uses in the Creekside Estates Project was computed using data collected from California Water Service Company for similar uses in the Chico area. For the project, this amounts to 107.68 acre-feet, which equates to a 33% annual reduction in

groundwater usage in the area converted from orchard to residences, or a 14% reduction in usage over the entire property.

The orchard water usage over the months of April through October exceeds project water usage by 53.421 acre-feet. Results from the analysis demonstrate that the project will not result in an increase in demand for water on the project site and will lessen the amount drawn during the dry summer months of greatest demand on the aquifer.

5.5.5.2 Assessment Relative to CEQA Standards

Significance Standard “a” requires evaluation of whether the project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. Each building in the subdivision will be connected to an individual septic tank and leach field areas consistent with the requirements of Chapter 19 of the Butte County Code. **Less Than Significant Impact.**

Significance Standard “b” is used to assess if a project requires construction or expansion of water or wastewater treatment facilities that would cause significant adverse environmental effects. The project will result in the construction of septic tanks, individual leach fields, and a new well. The placement and adherence to requirements of the County and Health Department will ensure there are not significant environmental effects. **Less Than Significant Impact.**

Significance Standard “c” assesses whether the project will require or result in the construction or expansion of storm water drainage and cause environmental impacts. The project will entail construction of under street storm drains that will not have a significant impact on the environmental resources on site. **Less Than Significant Impact.**

The Durham Irrigation District (DID) will supply domestic water and fire suppression for the project development. As part of the development, a new onsite well for DID will be installed. The DID has indicated that the proposed resources are expected to be sufficient to serve the project development. Therefore, the project is found not to have insufficient water supplies to serve the project as per Significance Standard “d.” **Less Than Significant Impact.**

Wastewater

Significance Standard “e” is used to assess if the project will result in a determination by a wastewater treatment provider which serves or may serve the project that capacity is inadequate to serve the project’s projected demand in addition to the provider’s existing commitments. The wastewater will be treated on site through individual septic tanks and individual leach line systems. **Less Than Significant Impact.**

Assessment of the sufficiency of the landfill capacity to serve the project is accomplished through evaluation of Significance Standard “f.” Sufficiency of landfill capacity to serve the project was assessed by the Initial Study and the impact was considered less than significant. Solid waste collection services are divided among three companies, Recology, Waste Management and North Recycling and Waste Services. The project site area is served by Recology. **Less Than Significant Impact.**

Finally, significance standard “g” asks if a project would be out of compliance with federal, state, and local statutes and regulations related to solid waste. The Solid Waste Division of Butte County Public Works is responsible for operating the Neal Road Recycling and Waste Facility, regulating the local waste collectors, providing safe disposal opportunities for household hazardous waste and universal waste, enforcement of illegal dumping, administering grant programs, coordinating solid waste and recycling education programs, and implementing programs that divert waste from landfills. Review of this project by Butte County Public Works and compliance with all conditions of approval provided by the County will ensure the project is in compliance with all federal, state, and local statutes and regulations in regards to solid waste. **Less Than Significant Impact.**

5.5.5.3 Consistency with the Goals, Objectives, and Policies of the Butte County General Plan and Other Plans

The project conforms well to the applicable goals and policies of the Butte County General Plan that relate to water quality and supply. Specific policies that apply to aspects of the project design being discussed are referenced in parentheses throughout the discussion.

Goal W-1 Maintain and enhance water quality.

Implementation of the project will result in a reduced use of groundwater when compared to current agricultural water usage. Water quality impacts arising from agricultural activities will be reduced (W-P1.3). Best management practices related to water runoff and storm water retention have been applied to the project and a Storm water Pollution Prevention Plan has been designed for the project (W-P1.2), (W-P1.4).

The proposed development will result in residential parcels that utilize onsite sewage disposal systems built in accordance with regulation found in the Butte County Local Agency Management Program (LAMP). This regulation was established in accordance with the 2012 California Onsite Wastewater Treatment System Policy and approved by the State Regional Water Quality Control Board in 2016 for, amongst other things, providing minimum standards for the protection of groundwater from contaminants found in onsite wastewater. Several construction standards exist in the LAMP that are protective of groundwater from Nitrate contamination. One is the minimum vertical separation distance of 36 inches between the bottom of a standard leach trench and the highest extent of seasonal groundwater. Another is that a standard leach trench cannot be constructed deeper than 36 inches into native soil. The proposed development is conditioned on designer specifications that the leachfield trenches will be shallower than this standard found in the LAMP, at a maximum depth of 24 inches. This shallow leach trench design is considered a further protective measure against groundwater contamination. In addition, this proposed development conforms to onsite wastewater system standards prescribed in a building moratorium imposed by the State Water Board in 1990 for the area south of this development known for high Nitrate groundwater contamination. This 1990 State Prohibition Order, now associated with the Chico Urban Area Nitrate Compliance Program (CUANCP), requires a minimum one-acre size for residential parcels that will be developed with onsite wastewater systems. This one-acre standard was deemed protective by the State for groundwater that was already

burdened with high nitrate levels caused from past agricultural practices or onsite wastewater system use. With the proposed drainage and wastewater systems , the project is consistent with the policies of Goal W-1.

Goal W-2 Ensure an abundant and sustainable water supply to support all uses in Butte

Groundwater in the Tuscan aquifer beneath Durham is abundant, showing annual response to summer pumping and winter recharge(W-P2.3). The expansion of DID sphere of influence will supply the proposed project (W-P2.5). The installation of a new DID operated well on site and associated delivery pipes will expand the public water system to meet the local demand without impacting other customers. (W-P2.6). The project will not significantly impact present water quantity available in the aquifer and is consistent with the policies of Goal W-2.

Goal W-3 Effectively manage groundwater resources to ensure a long-term water supply for Butte County.

An active almond orchard currently exists on the project site which uses water drawn from agricultural wells on site. The proposed project will use water provided by DID, which plans to install a new domestic water well on site. Implementation of the proposed project would trade an agricultural water demand for a residential demand on the same property with a net reduction of 30%.(W-P3.3) The proposed project would reduce the demand for water from the Tuscan aquifer and is consistent with the policies of Goal W-3

Goal W-4 Promote water conservation as an important part of a long-term and sustainable water supply.

As part of the green building practices in the project plan, the proposed project will conserve water through the installation of low-flow plumbing fixtures and adherence to state ordinances. The State's Model Water Efficient Landscape Ordinance (MWELo) was updated on July 15, 2015. The purpose of the MWELo is to promote the values and benefits of landscaping practices that integrate conservation and efficient use of water. The MWELo establishes a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects. The Landscape Documentation Application Packet is to provide procedural and design guidance for project applicants proposing landscape installation or rehabilitation projects that are subject to the requirements of MWELo.Wastewater will be collected and treated on site using septic tanks and leach fields, contributing to groundwater recharge through infiltration. Water conservation practices for the proposed project are consistent with the policies of Goal W-4

Goal W-5 Protect water quality through effective stormwater management.

Storm runoff within the subdivision will be mitigated with storm drain leach trenches. Storm water will be routed to catch basins and directed into storm drain leach trenches beneath the sidewalk for

infiltration (W-P5.2) The storm drain trenches will be designed to handle runoff from a 200-year storm. Onsite storm water drainage will not discharge to waterways from construction or operational runoff (W-P5.4; W-P5.5). With these design features, the proposed project is consistent with the policies of Goal W-5.

From the Durham Dayton Nelson Plan:

Goal D2N-4 Locate, extend and phase community facilities and services to provide for orderly development and economical utilization of resources. Ensure that growth is orderly and does not result in a significant burden to existing levels of public services

The General Plan Land Use Map designates the project site as VLDR (Very Low Density Residential, up to 1 unit per acre). The zoning designation on project site is consistent with the General Plan. The project area is located within the existing General Plan's boundaries for the "Urban Reserve" portion of Durham and the community boundaries as identified in the 1992 Durham Dayton Nelson Plan (D2N) and incorporated into Section I of the Area and Neighborhood Plans Element of the Butte County General Plan 2030.

Annexation of the project area by the DID provides for the growth in the Urban Reserve portion of the D2N Plan, discouraging sprawl. Expansion of services to the east of the railroad tracks may allow for connection by existing residents and future developments in this area. The proposed project design is consistent with the policies of Goal D2N-4.

Goal D2N-5 Protect and maintain areas of native vegetation which include riparian forest, valley freshwater marsh, valley oak woodland, vernal pools, annual grasslands and designated natural areas. Such areas deserve protection as part of the heritage of the communities, for the way such areas add to the aesthetic environment, and as important examples of the diversity of habitats and the wildlife they support within the Planning Area

The proposed project replaces part of an existing almond orchard with a residential subdivision. The project will not impact existing areas of native vegetation or habitats, due to the fact that as an active almond orchard, the project site contains no native vegetation or habitats. In addition, landscaping associated with the project is likely to provide better habitat for local wildlife than exists presently onsite. Therefore, the proposed project is consistent with the policies of Goal D2N-5.

Goal D2N-6 Utilize and develop natural resources so as to protect those resources and eliminate exposure of persons and property to environmental hazards.

The proposed project will minimize soil erosion by covering bare soils with landscaping or hard surfaces, and managing stormwater. The stormwater system will maintain groundwater recharge in the area by directing waters to an infiltration system beneath the sidewalks (P-6.7). By incorporating within the DID, the project is consistent with P-6.8 where subdivisions adjacent to existing water systems are required

to connect to them. The project would reduce water demand from the property, conserving the quality water resources in the aquifer below.

5.5.5.4 Significant Environmental Effects of the Proposed Project

There were no impacts from the project relating to public services and domestic water supply that were found to be significant.

5.5.5.5 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

None of the project impacts on public services were found to be significant and irreversible.

5.5.5.6 Growth-Inducing Impacts of the Proposed Project

The expansion of DID's service area to include the project property could have slight growth-inducing impacts in that it extends the system to an area where adjacent properties may more easily be considered for tie into the DID system in the future. These adjacent properties also fall within the Urban Reserve and are considered to be area appropriate for future growth by the General Plan so any growth-inducing effect is not considered significant.

5.5.5.7 Cumulative Impacts

The proposed project will not impact other DID customers, because the improvements to the DID service system are in addition to existing infrastructure. The development of a new DID well and service lines may improve water supply service to the immediate vicinity. Cumulative effects of installing and pumping from the new well are mitigated by the reduction of pumping onsite by 33% from the current agricultural demand.

The project will not impact water quality by discharging storm waters or wastewaters off site. All wastewater and stormwater is to be infiltrated into the soil on site. Development of the property will include landscaping and/or paving. The reduction of bare soils will reduce erosion and dust.

Cumulatively, the aquifer has enough water to sustain current water use regime, yet it is a somewhat limited resource. With the reduction of the agricultural water demand on the project site and the implementation of water conservation practices such as low flow fixtures, etc., there will be a reduction of water drawn from the aquifer, annually. The overall reduction of groundwater demand from this site due to the proposed project's conversion of the existing orchard to non-orchard related uses would cumulatively have a positive effect on local groundwater levels, by significantly reducing summer pumping volumes on site. Therefore, the proposed project will have a less than significant cumulative impact on regional or local supply through aquifer drawdown.

5.6 TRANSPORTATION AND TRAFFIC: TRAFFIC SAFETY

5.6.1 INTRODUCTION

This section describes and assesses existing and proposed transportation and traffic systems within the vicinity of the proposed, 46 single family residential units, Creekside Estates subdivision. The project is assessed under both project-specific and cumulative conditions. Potential impacts are identified and mitigation measures designed to reduce these impacts to less than significant levels.

Analysis was based on the project description, the Creekside Estates Traffic Impact Study conducted by Whitlock and Weinberger Transportation, Inc. (June 13, 2018), requirements of the Butte County General Plan 2030, other adopted Plans, visual field observations, and additional data made available by the County of Butte and the California Department of Transportation (CalTrans). An earlier traffic study was completed for a PUD project (Alternative 1) in 2013, and data from that study was also used in the current assessment.

In addition, a Vehicle Miles Travelled (VMT) impact analysis was conducted by Fehr & Peers in compliance with CEQA Guidelines Section 15064.3.

The project was assessed under the 2012 Initial Study/MND for all CEQA categories, including Traffic and Transportation Systems. The proposal was found not to conflict with any applicable plans, ordinances or policies regarding transportation or circulation systems. The proposal was also found to have a less than significant impact on levels of service of surrounding roadways, changes to air traffic patterns, and adequacy of emergency access.

The project applicants modified the design of this project to address the line of sight deficiencies in the earlier proposal. The revised site plan (see Figure 2-3) for Creekside Estates includes roadway placement that maintains adequate line of sight distances along Durham-Dayton Highway.

5.6.2 ENVIRONMENTAL SETTING

5.6.2.1 Study Area

Transportation systems in the surrounding Durham area are characterized by local residential streets and rural arterial roadways linking the area to other nearby communities and larger transportation corridors. A railway is situated centrally within the community and lies west of the project area. No State or federally maintained highways or freeways lie within the community. Rather, county- maintained roads provide for high speed travel to destinations outside of the Durham area.

5.6.2.2 Vehicles Miles Traveled (VMT)

This section discusses the environmental setting relevant to VMT impact analysis for the Creekside Estates project. The project is located in an unincorporated area of Butte County known as Durham and proposes to construct 46 single-family residential units. To forecast VMT for the project and for the associated VMT impact significance threshold, this analysis applied modified version 1.1-3.17.21 of the BCAG RTP/SCS travel demand model.

BCAG RTP/SCS Travel Demand Model

The modified BCAG RTP/SCS model was recently updated as part of the 2020 BCAG RTP/SCS and continues to be refined through various on-going studies and project applications. The model was developed for regional planning and analysis purposes associated with the RTP/SCS. It has a 2018 base year and forecast years of 2020 and 2040. The 2018 base year model represents pre-Camp Fire conditions while the 2020 version represents post-Camp Fire conditions.

While the primary purpose of the model is to support the RTP/SCS analysis, the model was designed with sufficient detail for local and project scale applications including VMT impact analysis. Prior to application for this project, the model was reviewed and modified to improve its sensitivity for project-scale VMT analysis. This included a review of the model in the project vicinity and testing to verify its responsiveness to small land use changes. The traffic analysis zone (TAZ) map is shown below in Figure 5-6 to help visualize the level of detail in the overall model. The TAZs are polygons that represent areas with similar land use and travel characteristics. Land use, demographic, and socioeconomic variables for each TAZ are used to estimate and forecast trips that travel between the TAZs. By tracking these trips across the network, VMT can be measured for each TAZ, any aggregation of TAZs, or for any physical network boundary. Project effects on VMT can be forecast by changing the TAZ inputs to represent the addition of the project and re-running the model to isolate changes in vehicle trips across the network.

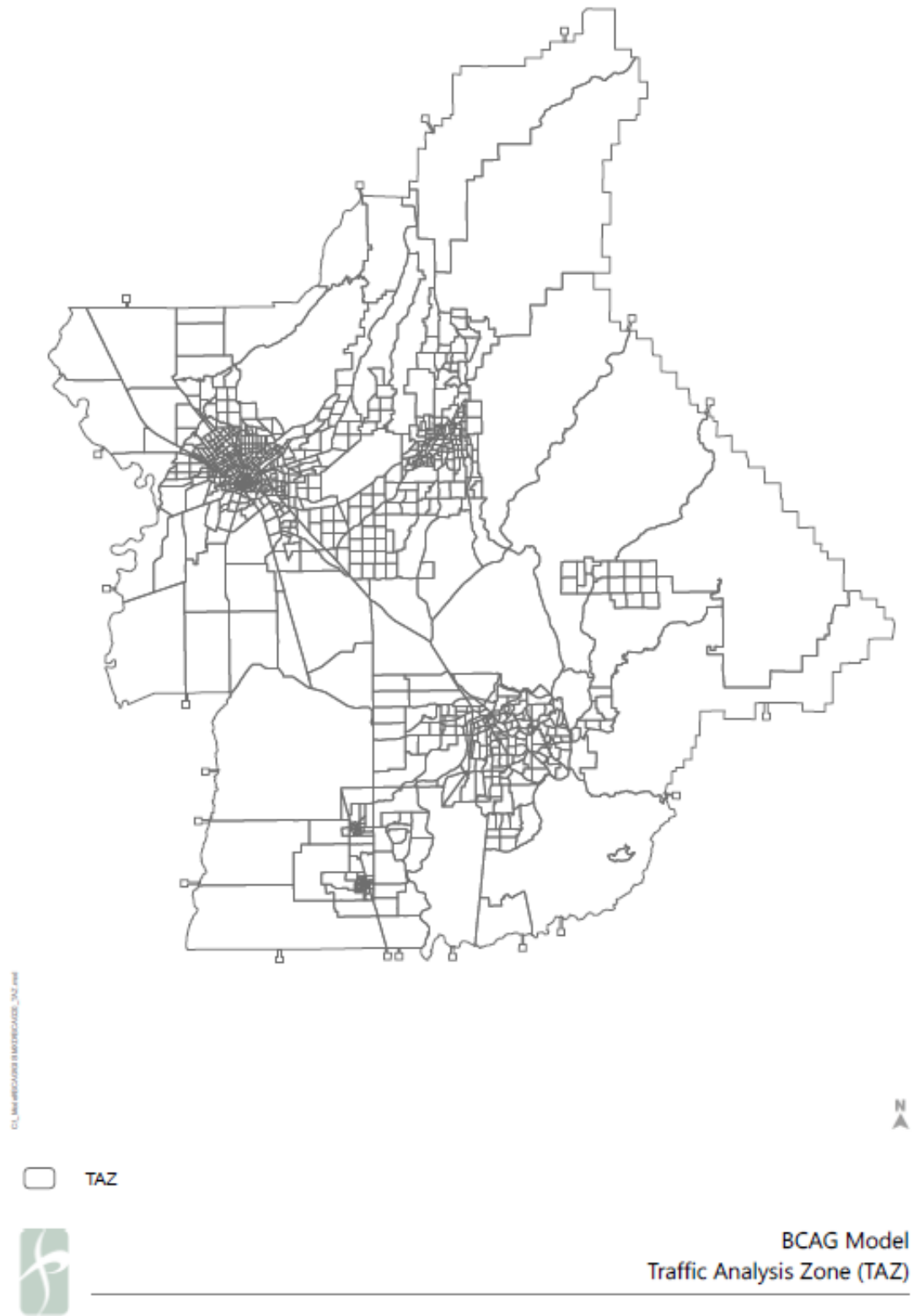


Figure 5-6. BCAG RTP/SCS Model TAZ System

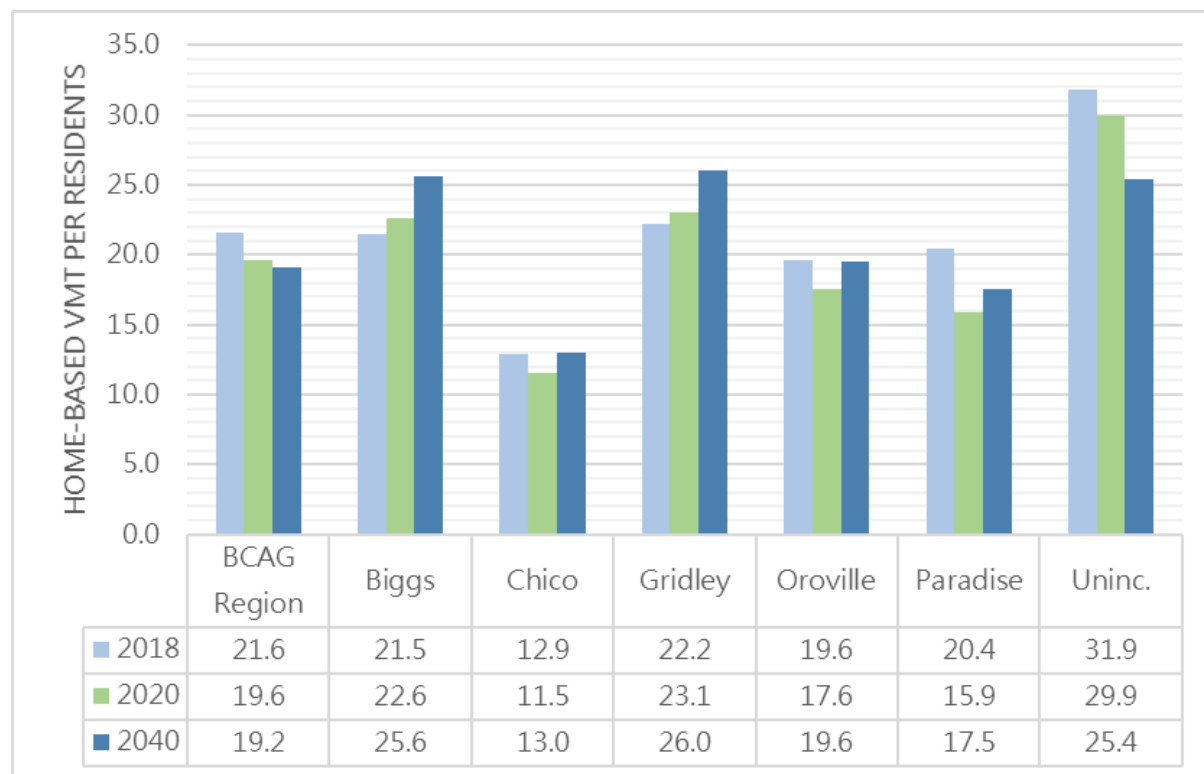
More details about the model’s development and a user’s guide are available at the following BCAG website.

- <http://www.bcag.org/Planning/Transportation-Forecasting/index.html>

Baseline VMT

For purposes of this VMT impact analysis, baseline conditions are represented by 2020 forecasts from the model. Baseline is normally defined as the analysis year when the notice of preparation (NOP) is released or when environmental impact analysis is commenced. Release of the NOP occurred in July 2019, which is after the 2018 Camp Fire. Therefore, the year 2020 version of the model was used for this study. It reflects conditions after the Camp Fire and prior to COVID-19. As such, it represents, the best available data for estimating baseline VMT as well as forecasting the VMT attributable to the proposed project.

The residential land uses in this area of the county generate VMT at a higher rate than the BCAG region average. This is also true of the unincorporated area in general as shown in Figure 5-7 below due to the low land use density and long distances between trip origins and destinations.



Source: Modified version 1.1-3.17.21 of the BCAG RTP/SCS model.

Figure 5-7. Homebased VMT per Resident by Jurisdiction

As shown in Figure 5-8, the specific VMT metric used in this study to determine VMT impact significance is home-based VMT per resident. This is a residential land use specific VMT metric and is estimated and forecast using a modified version of the BCAG RTP/SCS travel demand model. Home-based trips are those made by residents of the home using passenger vehicles, so this metric complies with methodology and metric recommendations contained in the CEQA Guidelines and OPR Technical Advisory. This metric does not include commercial vehicle trips that may be generated by the project's residential units (i.e., internet shopping deliveries) and passenger vehicle trips made by non-residents of the home (i.e., food deliveries). Another limitation of only measuring home-based VMT is that the project may influence VMT generation of neighboring land uses. Therefore, this study also produced forecasts of total VMT within Butte County and total VMT generated by the project. These additional VMT metrics are provided for informational purposes and may be used in the analysis of other impact subjects that rely on VMT as an input. A visualization of the metric differences is provided below in Figure 5-8.




Metric	Definition	Visualization
Total VMT	All vehicle-trips (i.e., passenger and commercial vehicles) or passenger only vehicle-trips are assigned on the network within a specific geographic boundary (i.e., model-wide, region-wide, city-wide). Vehicle volume on each link is multiplied by link distance.	
Total VMT generated by a project	All vehicle-trips are traced to the zone or zones of study. This includes internal to internal (II), internal to external (IX), and external to internal (XI) trips. May use final assignment origin-destination (OD) trip tables or production (P) and attraction (A) estimates multiplied by distance skims.	
Home-based VMT per resident	All automobile (i.e., passenger cars and light-duty trucks) vehicle-trips that start or end at the home are traced, but non-home-based trips made by residents elsewhere on the network are excluded.	

Figure 5-8. VMT Metric Definition and Visualization

5.6.2.3 Roadways

Durham is served by two major roadways trending north-south (Midway) and east-west (Durham-Dayton Highway) and several minor residential roadways. Roadways in the project area have a generally high level due to the relatively low population of Durham and the proximity of Highway 99, which relieves major roadways in the Durham area from regional commuter traffic. Displaced residents from Paradise have purchased or rented available vacant units since the Camp Fire in November 2018.

Durham-Dayton Highway is an east-west trending arterial highway connecting to Dayton to the west and Highway 99 to the east. This highway borders the northern boundary of the project area. Project access is proposed via Durham-Dayton Highway.

Midway is a north-south trending arterial roadway connecting downtown Durham to the community of Chico to the north and agricultural lands to the south. The Midway lies approximately ½ mile west of the project area.

Minor residential roadways assessed include Jones Avenue, Lott Road, Stanford Lane, and the Project Access roadway A.

5.6.2.4 Intersections

There are seven intersections in the vicinity of the project that were considered in the traffic studies (Figure 9; descriptions and figure from the Traffic Study, Appendix D of the EIR).

Midway/Jones Avenue is a “tee” intersection with westbound Jones Avenue stop-controlled and both Midway approaches uncontrolled. The southbound approach on Midway includes an 80-ft left-turn lane.

Durham-Dayton Highway/Midway is an all-way stop intersection located within the town center of Durham, with single lane approaches. Crosswalks are located on three approaches to the intersection.

Durham-Dayton Highway/Jones Avenue is a “tee” intersection with Durham-Dayton Highway uncontrolled and the approach of Jones Avenue stop-controlled. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

Durham-Dayton Highway/Project Access A is one proposed entrance to the project site. The proposed intersection will be a “tee” intersection with the new Project Access A approach stop-controlled. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

Durham-Dayton Highway/Lott Road is two-way stop-controlled on the Lott Road approaches. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

Durham-Dayton Highway/Stanford Lane is a “tee” intersection with Durham-Dayton Highway uncontrolled and the approach of Stanford Lane stop-controlled. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

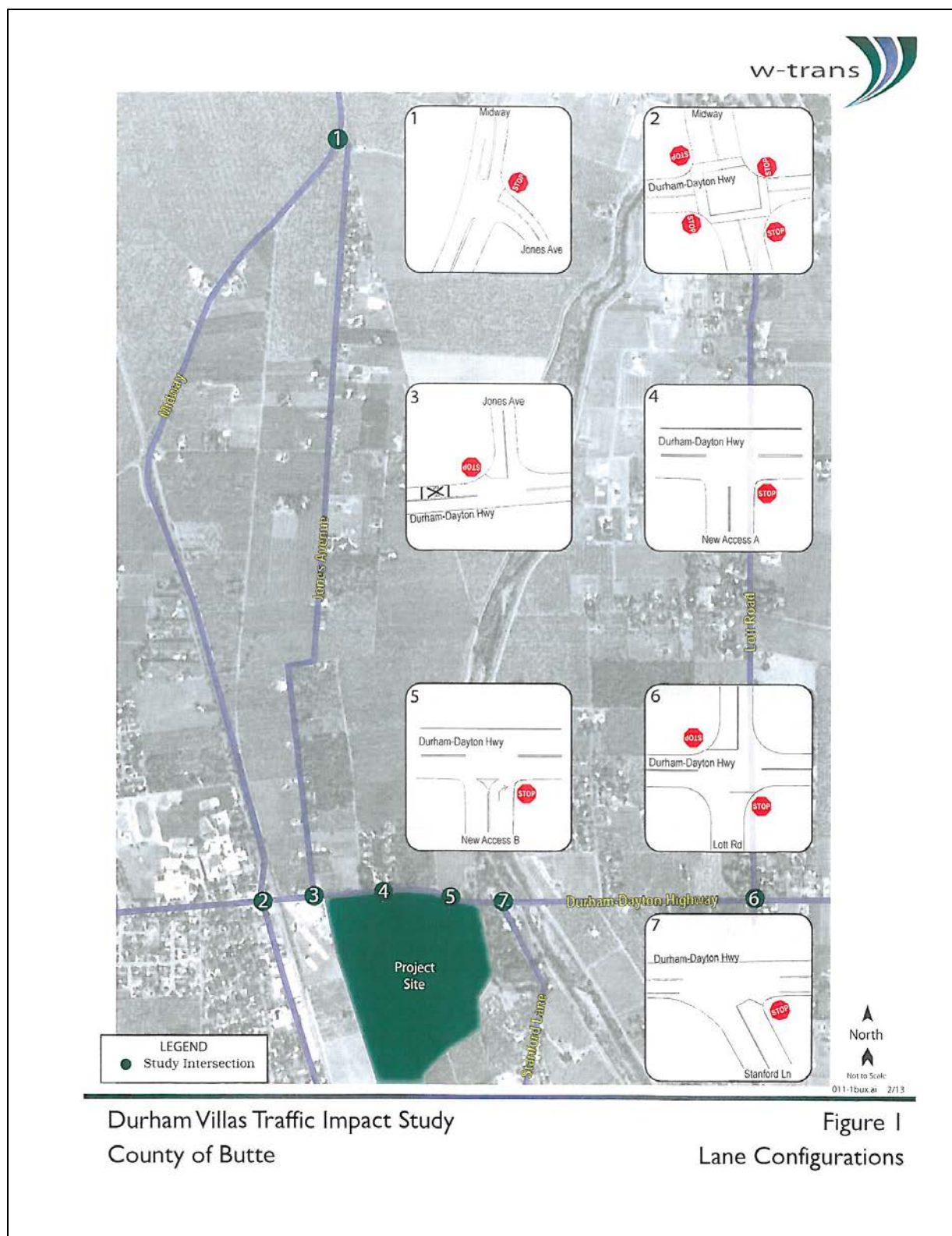


Figure 5-9. Lane Configurations from Creekside Estates Traffic Study by W-Trans.

5.6.2.5 Freeways

No freeways exist in proximity to the project area. Highway 99 is located approximately 3.7 miles east of the project area and is the nearest State highway to the project area. Durham-Dayton Highway is a County-maintained roadway.

5.6.2.6 Public Transportation Systems

Transit service in Butte County is provided by the B-Line (Butte Regional Transit) operated by the Butte County Association of Governments, which provides fixed-route bus service as well as flexible route paratransit for seniors and those with disabilities. The B-Line's bus Route 32 operates Monday through Friday and stops at the intersection of Durham-Dayton Highway/Midway. This route offers transit service to Chico, Biggs, and Gridley five days a week, twice a day, once in the morning and once in the evening. Bike racks are available on all B-Line buses on a first come first served basis.

5.6.2.7 Pedestrian and Bicycle Routes

Pedestrian facilities located within the study area are focused on Durham-Dayton Highway and Midway as follows (from the Traffic Study):

Durham-Dayton Highway – A continuous sidewalk is provided on Durham-Dayton Highway west of the intersection with Midway. Crosswalks are located on the north, south, and west legs at the Midway intersection.

Midway – A continuous sidewalk extends south from the intersection with Durham-Dayton Highway on the west side of the road. A short segment (less than 0.1 mile long) exists on the west side of the road just north of Durham-Dayton Highway.

Class II bicycle lanes exist within the project area on Durham-Dayton Highway between Midway and Lott Road. Class II bikeways are described by the Highway Design Manual (Caltrans, 2006) as “striped and signed lanes for one-way bike travel on a street or highway.” Table 4 summarizes the existing and planned bicycle facilities in the project vicinity, as described by the Butte County Bicycle Plan.

Table 7. Bicycle Facility Summary.

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing <i>Durham-Dayton Hwy</i>	II	2.8	McAnarlin Ave	Esquon Rd
Planned <i>Jones Ave</i>	III	2.2	Durham-Dayton Hwy	Midway
<i>Lott Rd</i>	II	2.1	Durham-Dayton Hwy	Oroville Chico Hwy
<i>Midway</i>	II	10.9	Durham-Dayton Hwy	Richvale Hwy

Source: 2011 Butte County Bicycle Plan, County of Butte 2011.

5.6.2.8 Railway Systems

Union Pacific Railroad Company owns and maintains the 100+ miles of track in Butte County, with Amtrack providing service to the Chico station. There are no boarding stations in the Durham area; residents must travel to Chico to board at the nearest station.

The railway lies directly adjacent to the downtown Durham area and approximately ¼ mile west of the project area. The crossing is controlled by electronic crossing gates on both sides of the railway on Durham-Dayton Highway. The railway lies on a raised berm that increased visibility to traffic and pedestrians.

Residents throughout the Durham area experience train-related noise levels normal for communities situated directly adjacent to railways.

5.6.3 REGULATORY SETTING

5.6.3.1 Federal Regulations

The U.S. Department of Transportation (DOT) oversees federal highway, air, railroad, and maritime and other transportation administration functions. This agency is responsible for enforcing and administering a number of important legislative acts, including the Transportation Act (1958), the Federal Aviation Act (1958), the National Mass Transportation Assistance Act (1974), and other legislation related to our interstate highway system's uses, maintenance, and security. Because the project does not lie in proximity to any interstate highway or other federally managed transportation system, DOT regulations have limited regulatory oversight of the proposed project or similar residential developments.

5.6.3.2 State Regulations

The State of California has enacted several pieces of legislation that outline the state's commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and contribute to reductions in greenhouse gas (GHG) emissions in line with state climate goals. Legislation that is potentially applicable to VMT impact analysis for the Creekside Estates project is listed below.

- Assembly Bill (AB) 32 (2006)
- Senate Bill (SB) 375 (2008)
- SB 743 (2013)

Assembly Bill 32

AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that "(a) the statewide GHG emissions limit shall remain in effect unless otherwise amended or repealed; (b) it is the intent of the Legislature that the

statewide GHG emissions limit continues in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020; (c) the CARB shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020.”

Senate Bill 375

SB 375 requires metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their regional transportation plans (RTPs). The SCS demonstrates how the region will meet its GHG reduction targets through integrated land use, housing and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

In 2017, the State Legislature passed SB 150, which requires CARB to prepare a report beginning in 2018 and every four years thereafter analyzing the progress made by each MPO in meeting regional GHG emission reduction targets.

Senate Bill 743

SB 743 created or encouraged several statewide changes to the evaluation of transportation and traffic impacts under CEQA. First, it directed the Governor’s Office of Planning and Research (OPR) to amend the CEQA Guidelines to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allowed OPR to extend use of the new metrics beyond TPAs. In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric and applied their discretion to recommend its use statewide. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018.

The amended CEQA Guidelines contain the following relevant expectations for VMT impact analysis.

- “Generally, vehicle miles traveled is the most appropriate measure of transportation impacts.”
- “...vehicle miles traveled refers to the amount and distance of automobile travel attributable to a project.”
- “Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact.”
- “Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.”

Second, SB 743 establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment.

Third, SB 743 added Section 21099 to the Public Resources Code, which states that automobile delay, as described by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the CEQA Guidelines by the California Natural Resources Agency. Since the amended CEQA Guidelines were certified in December 2018, LOS or similar measures of vehicular capacity or traffic congestion are not considered a significant impact on the environment.

Lastly, SB 743 establishes a new CEQA exemption for a residential, mixed-use, and employment center project a) within a TPA, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with an SCS. This exemption requires further review if the project or circumstances changes significantly.

To aid in SB 743 implementation, OPR released a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to lead agencies on how to implement SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

Specific to residential projects and considering the land use context for Butte County and project area, the Technical Advisory contains the following recommendations related to assessing VMT impacts.

- Small projects—projects consistent with a SCS and local general plan that generate or attract fewer than 110 vehicle trips per day may be presumed to have a less than significant impact.
- Projects in low-VMT areas—residential projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT (i.e., already below the VMT impact significance threshold) will tend to exhibit similarly low VMT and may be presumed to have a less than significant impact.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential projects, as described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). With respect to VMT impact analysis, Caltrans has published the *Vehicle Miles Traveled-Focused Transportation Impact Study Guide (VMT-TISG)*, May 20, 2020. This guide outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and GHG emission reduction goals. The

VTM-TISG emphasizes that VMT analysis is Caltrans' primary review focus, and references OPR's Technical Advisory as a basis for the guidance in the TISG. Notably, the VMT-TISG endorses the recommended thresholds in the Technical Advisory for land use projects. Since Caltrans routinely comments on local land use projects and is also the owner and operator of the state highway system, their endorsement of the OPR VMT thresholds creates a potential 'state' VMT threshold especially when they function as a responsible agency in local development review and have direct authority over a part of project approval such as an encroachment permit for access to the state highway system.

5.6.3.3 Local Regulations

BCAG RTP/SCS

The Butte County Association of Governments (BCAG) serves as the MPO for Butte County. As the MPO, the most relevant responsibility of the agency related to VMT impact analysis for local land use projects is through the development of the RTP/SCS. The Butte County 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020-2040), BCAG, December 10, 2020 (2020 RTP/SCS) is the most recent version. It reflects the population and employment growth anticipated by local governments and includes a financially constrained list of transportation improvement projects. As noted above under the SB 375 discussion, the SCS has specific GHG reduction targets set by CARB. The RTP also must demonstrate compliance with federal air quality conformity. Therefore, RTP/SCS performance is influenced by VMT growth so new land use projects should be consistent with the RTP/SCS to avoid jeopardizing the air quality conformity for the county or the ability to achieve GHG reduction goals. The 2020 RTP/SCS complies with federal and state performance requirements and the specific SCS performance is reported below.

RTP/SCS per Capita CO₂ Emission Reductions for Passenger Vehicles from 2005

Target Year	ARB Target (2018)	BCAG RTP/SCS
2020	6% reduction	15% reduction
2035	7% reduction	10% reduction

Source: Page 4-2, *Butte County 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020-2040)*, BCAG, December 10, 2020

The 2020 RTP/SCS does not contain a specific VMT reduction goal but VMT per capita reductions did contribute to the SCS performance. As documented in Table 4.9-1 of the 2020 RTP/SCS SEIR, total VMT generated in the county was projected to increase from 4,705,417 under 2018 baseline conditions to 5,332,327 under 2040 conditions with the proposed plan. This represents a 13.3 percent increase although total VMT per capita was projected to decline about 3.4 percent from 20.7 to 20.0 between 2018 baseline and 2040.¹

Butte County General Plan 2030, October 26, 2010 (Amended November 6, 2012)

¹ The VMT forecasts exclude trip lengths external to the county and total VMT includes commercial vehicles.

The general plan does not contain quantitative VMT reduction goals. However, multiple policies are supportive of achieving VMT reduction through increasing vehicle occupancies, sharing rides, promoting transit and active transportation, and supporting work-at-home programs.

- *CIR-P2.1 Carpooling shall be encouraged by providing additional carpool pickup and park-and-ride locations near transit centers and at freeway interchanges.*
- *CIR-P2.2 Trip reduction among County employees shall be encouraged. Specific measures to encourage trip reduction could include providing subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking for carpools/vanpools.*
- *CIR-P2.3 Home occupations shall be encouraged through streamlined application processes that are appropriate to the intensity and proposed uses of the home business.*
- *CIR-P2.4 Employers shall be encouraged to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking for carpools/vanpools.*

Despite the policy support, the daily VMT was projected to increase from 4,126,991 to 6,397,512 between 2006 and 2030 with the proposed plan. A 2012 general plan amendment increased the 2030 daily VMT by 1,511.

Butte County Climate Action Plan (CAP), Butte County, February 25, 2014

The Butte County CAP sets community GHG reduction targets for 2020 and 2040 compared to baseline 2006 levels but does not establish a specific VMT reduction goal. Under 2020 conditions, the CAP expected only about 0.2 percent of GHG emissions reduction to come from transportation measures. Annual VMT was largely expected to continue increasing from 464,302,660 in 2006 to 567,121,185 in 2020, and 677,283,969 in 2030 representing a total increase of 46 percent between 2006 and 2030.

5.6.4 STANDARDS OF SIGNIFICANCE

Butte County has not selected VMT impact significance thresholds for residential projects. The county is participating in an SB 743 implementation study sponsored by BCAG to assess VMT impact analysis methodology, thresholds, and mitigation options. This study is scheduled to be completed in June 2021. The County intends to make final threshold decisions after completion of the BCAG study. Until that time, the CEQA Guidelines and OPR Technical Advisory recommendations below are used to assess VMT impact significance for this project.

- The proposed project would have a significant VMT impact if it generates more than 110 vehicle trips per day and it generates home-based VMT per resident exceeding 16.7, which is 15 percent below the average BCAG region home-based VMT per resident in 2020.

For potential impacts to other modes and safety, the following thresholds would apply.

- a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities
- b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- d) Result in inadequate emergency access.

5.6.5 *METHODS OF ANALYSIS*

VMT

As described above, the VMT analysis for baseline conditions and the proposed project relied on VMT forecasts from modified version 1.1-3.17.21 of the BCAG RTP/SCS model. The specific steps followed to incorporate the project into the model and to generate the relevant VMT metrics are described below.

The Creekside Estates project proposes to construct 46 single family dwelling units. To model the VMT effects of these additional residential units, a new TAZ was added to the model that matched the boundary of the project site. This included a new connection from the TAZ to Durham-Dayton Highway to represent the project's Street A access point. When inputting residential land uses into the model, the units are converted to households and assigned demographic and socioeconomic characteristics including household size (e.g., number of persons per household) and income level (e.g., low, medium, or high). These parameters influence the vehicle trips generated by each household. The household size was set at 2.82 based on estimates used in the model for the surrounding area. Reviewers should note that a higher household size is possible and would tend to produce higher VMT levels. The income levels of the households were presumed to be high given the income necessary to afford new single-family homes on one- to two-acre lots in this area.

Analysis Limitations

This analysis was performed in March 2021 during the COVID-19 pandemic. The COVID-19 response has dramatically changed human activities and associated travel patterns. Performing more activities from home was already a trend due to the internet, but COVID-19 accelerated transitions to working and shopping from home. In addition, other disruptive trends related to demographic changes, new travel choices such as Uber and Lyft, and the potential for autonomous vehicle (AV) travel make predicting future travel demand and outcomes less certain. The modified version 1.1-3.17.21 of the BCAG RTP/SCS model does not yet include these effects and it would be speculative to account for them until sufficient data and evidence is available to make reasonable adjustments or updates to the model.

Consistency with Traffic and Circulation Goals and Policies

The project design was also assessed for how well it conforms with adopted policies, goals and plans relating to automobile, mass transit, bicycle and pedestrian circulation in the county.

5.6.6 IMPACTS AND MITIGATION MEASURES

5.6.6.1 Assessment of Significance Standards

As shown in Table 8, the proposed project is forecast to generate home-based VMT higher than the threshold. This is largely due to the rural land use context with low density and limited mix of land uses. Residents in this area must travel further to work, school, shopping, and other destinations. **Potentially Significant Impact.**

Table 8. Baseline Plus Project VMT Analysis.

VMT Metric	Threshold(1)	Proposed Project (2)	Above or Below Threshold	Impact Significance
Home-based VMT per resident	16.7	24.4	Above	Significant
Notes: (1) Threshold value is based on 15 percent the BCAG regional average estimated using modified version 1.1-3.17.21 of the BCAG RTP/SCS model. (2) The proposed project value is based on a new run of the modified version 1.1-3.17.21 BCAG RTP/SCS model. Source: Fehr & Peers, 2021				

In addition to the VMT impact analysis results in Table 8, the modified model was used to produce the following VMT results as noted above.

- Total VMT (all VMT generated by TAZs in Butte County including travel outside the county)
 - Baseline = 10,745,859
 - Baseline plus project = 10,750,646
 - Project effect = Increase of 4,787
- Total VMT generated by the project = 3,175

Impact: The project will generate home-based VMT per resident above the threshold level.

No feasible mitigation was identified. The impact is significant and unavoidable.

This mitigation finding is based on a review of VMT mitigation strategies evaluated for the BCAG SB 743 Implementation Study. As part of that study, the mitigation strategies contained in *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, 2010 (<http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>) were evaluated for applicability to land use projects in Butte County (see Appendix A). The only feasible mitigation strategies that may have been applicable to the proposed project are CAPCOA strategies 3.2.1 and 3.2.2. These strategies involve the development of complete bicycle and pedestrian networks. The project description already includes this type of improvement with its proposed multi-use path between the project site and Midway in Durham. This facility will improve the existing walking and bicycling environment to help encourage project residents to walk or bike to destinations in Durham versus

driving. Since this improvement was included in the project description and its effects already accounted for in the VMT forecasting, no further mitigation actions were identified.

Collision History

Review of the collision data for intersections in the study revealed that one intersection, Durham-Dayton/Lott Rd had collision rates significantly greater than the statewide average. The traffic study showed the intersections had collisions resulting from a DUI and unsafe speed, which indicates that the collisions are not likely the result of intersection geometries. All other study intersections had calculated collision rates that were lower than the statewide average PPP for similar facilities.

Table 9. Collision Rates at the Study Intersections.

Study Intersection	Number of Collisions (2013-2017)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Midway/Jones Ave	1	0.08	0.16
2. Durham-Dayton/Midway	4	0.30	0.32
3. Durham-Dayton/Jones	1	0.11	0.14
4. Durham-Dayton/Stanford Ln	1	0.12	0.16
5. Durham-Dayton/Lott Rd	2	0.31	0.23

Note: c/mve = collisions per million vehicles entering; Bold indicates a calculated collision rate significantly greater than the statewide average.

Project access road was designed to minimize any traffic safety hazards based on the results of the traffic studies. The project's roadway, cul-de-sac, exceeds what is allowed per Butte County Cod 20-133, but per consultation with Butte County Fire/California Department of Forestry, proposed Street "A" has been designed to include a wider roadway (three lanes), and therefore, determined to be equivalent to two points of access. Adequate line of sight distances were maintained in the positioning of the project access roads.

The public voiced concerns over traffic safety particularly relating to increasing traffic volumes in an area with a high number of farming operations that need to move slow-moving farming equipment on roads in the vicinity. Significance Standard "d" relates to increases in safety hazards due to design features or incompatible uses. There is potential for an increase in incompatible uses, i.e., farm equipment and residential traffic near the project site. **Potentially Significant Impact.**

The use of signage in order to reduce the potential impact on safety to a level that is less than significant, the following mitigation is recommended.

Impact: The project may increase incompatible uses of the roadways; i.e., residential vehicular traffic and farm equipment.

Mitigation Measure TT-1: Line of Sight Maintenance. Areas within the line of sight along Durham-Dayton Highway, which extends 25 feet south of the edge of the pavement, must be kept clear of vegetation, signage, and other obstacles to maintain the adequate sight distance.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: Construction, Post-construction.

Monitoring: The Butte County Department of Development Services and Department of Public Works.

Mitigation Measure TT-2: Signage to Minimize Conflicts with Farm Equipment. Provide signage indicating “turning vehicles” near access points and tractor symbol signage.

With all the project features and the above mitigation, the project is considered to have a less than significant impact with regard to Significance Standard “d,” an increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) and to provide adequate emergency access to the development, as measured by Significance Standard e.

The project does not include and does not lay in close proximity to any air travel facilities; therefore, Significance Standard c does not apply and there will be no impact on air traffic patterns. **No Impact.**

5.6.6.2 Consistency with Local Goals, Policies, and Objectives

To further assess the Significance Standards “a” and “c,” the following goals, policies, and objectives relating to traffic and circulation were found to be relevant to the project. From Butte County General Plan Circulation Element (Chapter 9 BCGP) and:

<p>Goal CIR-3 Design new neighborhoods, and improve existing neighborhoods, to accommodate and promote alternative modes of transportation.</p>
--

CIR-P3.1 The County supports improved connections to other regional transportation services, such as rail and regional/national bus lines, and to connect Butte County communities with each other.

CIR-P3.2 A safe, continuous, integrated and accessible pedestrian network shall be provided in urbanized areas, so as to encourage walking as a viable transportation mode and as a form of recreation and exercise.

CIR-P3.3 Travel modes shall be interconnected to form an integrated, coordinated and balanced multi-modal transportation system.

CIR-P3.4 Major new development projects, as determined by the Department of Development Services, shall consider provisions for alternative modes of transportation.

CIR-P3.5 New development projects shall consider providing adequate pedestrian, bicycle and multi-use facilities in a way that integrates circulation and recreational use.

CIR-P3.6 New neighborhoods shall provide bike and pedestrian connectivity between streets.

CIR-P3.7 Arterial and collector streets shall be designed to enhance the integrity and cohesiveness of urban neighborhoods

CIR-P3.8 Major residential development projects shall be designed with interconnected collector street patterns and short block lengths. Cul-de-sac and dead-end streets shall conform to County design standards.

CIR-P3.9 Public facilities shall be located and designed to allow for convenient access from public transit and/or bicycle and pedestrian facilities.

CIR-P3.10 Trees located along urban streets shall be protected. If maintenance or upgrading requires tree removal, the trees shall be replaced.

The project design is consistent with the specific policies of Circulation Goal- 3 of the General Plan. It proposes a design that maximizes access to alternate modes of transportation, including a bicycle and walking path, bus stop, and sidewalks. These amenities will not only benefit the development but will connect surrounding residences in the area of the Durham Urban Reserve to the downtown area.

In conformance with CR-P3.1, a bus turn-out area will be reserved along Durham-Dayton Highway for the future use of the B-Line bus system and school buses. Transit service will be provided when the demand for transit service is demonstrated. The project design is consistent with circulation policies, CIR-P3.2, CIR-P3.3, CIR-P3.5 and P3.9. A pedestrian/bicycle path will be constructed along the south side of Durham-Dayton Highway along the parcel frontage.

Goal CIR-5 relates to bicycle transportation, and the project conforms well with the policies associated with Goal CIR-5 that apply to development projects:

<p>Goal CIR-5 Provide a safe, continuous, integrated and accessible bicycle system, so as to encourage the use of the bicycle as a viable transportation mode and as a form of</p>

CIR-P5.1 Bicycle facilities shall be developed in accordance with the County's adopted Bicycle Master Plan.

CIR-P5.2 New bicycle routes and paths shall create a safe bicycle environment.

CIR-P5.3 The bicycle system shall be integrated with other transportation modes by connecting bicycle routes and transit stops, providing secure bicycle parking facilities and supporting efforts to expand accommodation of bicycles aboard buses.

CIR-P5.6 Residential development projects shall incorporate internal circulation networks that encourage bicycle use and that connect to the external bicycle circulation system.

CIR-P5.7 Owners of apartment complexes and major commercial, office, industrial and educational sites shall provide safe, plentiful and centrally located bicycle parking facilities.

The Butte Master Bicycle Plan contains the following objectives and policies:

GOAL 1: Provide a safe and efficient bikeway system.

Objectives:

- Minimize potential conflicts between autos, bikes, and pedestrians.
- Minimize or eliminate safety hazards.

Policies:

- Require new bikeways and roadways to be designed to current Caltrans bikeway design guidelines (Caltrans Highway Design Manual, Fourth Edition, and Chapter 1000).
- Identify and prioritize projects which mitigate and/or eliminate safety hazards for bicyclists.
- Incorporate standard signage and traffic controls in accordance with Caltrans bikeway design guidelines.
- Optimize safety conditions for bicyclists through traffic engineering and law enforcement efforts.
- Encourage greater animal control on bike routes to minimize bicyclist-canine conflicts.
- Strive to maintain bikeways free of debris.
- Monitor bikeways for potential safety hazards.
- Goal CIR-6 and supporting policies relate to maximizing efficiency and safety of the road network.

Goal CIR-6 Support a balanced and integrated road and highway network that maximizes the mobility of people and goods in a safe, efficient manner.

CIR-P6.1 The level of service for County-maintained roads within the unincorporated areas of the county but outside municipalities' sphere of influences (SOIs) shall be level of service (LOS) C or better during the PM peak hour. Within a municipality's SOI, the level of service shall meet the municipality's level of service policy.

CIR-P6.2 The level of service on State Highways should at least match the concept level of service for the facility, as defined by Caltrans.

CIR-P6.3 Project approval shall be conditioned on the provision of roadway improvements to meet the level of service standards in policies CIR-P6.1 and CIR-P6.2. Exceptions to satisfying the level of service standards and/or constructing transportation facilities to the County's design standards may be allowed on a case-by-case basis where reducing level of service or not constructing a transportation facility to County standards would result in a clear public benefit. Such circumstances may include, but are not limited to the following:

- a) Conserving agricultural or open space land.
- b) Enhancing the agricultural economy.
- c) Protecting scenic roadways or highways.
- d) Preserving downtown community environments.

CIR-P6.4 Parcels adjacent to highways and significant roadways shall have only limited access to these facilities as a means to accommodate regional traffic and preserve public mobility.

CIR-P6.5 Street improvements within the sphere of influence of an incorporated municipality shall conform to the street standards of that municipality.

CIR-P6.6 Major new development projects and subdivisions, as determined by the Department of Development Services, shall prepare and implement traffic studies to assess and mitigate adverse impacts to local and regional transportation facilities.

As discussed previously under Assessment of Significance Standards, the project conforms to County LOS standards. The parcels within the project site have one access point to Durham-Dayton Highway via an ingress/egress road, consistent with CIR-P6.4. Appropriate traffic studies have been conducted to assess impacts on traffic in conformance with CIR-P6.6. A VMT analysis was performed subsequently and revealed that no mitigations available for a relatively small rural residential project.

Goal CIR-8 related to road financing and maintenance.

Goal CIR-8 Provide an adequate road system that is within the County's ability to finance and maintain.
--

CIR-P8.1 The cost of new roads shall be borne equitably among benefiting property owners.

CIR-P8.3 Approval of new development projects shall be conditioned on payment of established traffic impact fees as a means to fund construction and improvement of affected roadways.

CIR-P8.4 Urban and rural arterials and collectors shall be considered major thoroughfares for the purpose of collecting appropriate fees allowed under Section 66484 of the Subdivision Map Act.²

CIR-P8.5 As funding is available, prioritize improvements and resolve safety and dust issues on rural gravel roads that provide access for residential areas.

The project does not propose or create conditions that will require County financing, construction, or improvement of any affected roadways (CIR-P8.1). The existing traffic levels on Durham-Dayton Highway are low and able to accommodate project-related traffic without exceeding acceptable Level of Service standards. The developer will pay all established traffic impact fees (CIR-8.3).

Safety is also addressed by General Plan Goal CIR-9, which states the following:

Goal CIR-9 Provide a circulation system that supports public safety.

CIR-P9.1 All new road systems, both public and private, shall provide for safe evacuation of residents and adequate access to fire and other emergency services by providing at least two means of emergency access to an interconnected collector system. New road systems will include reduction and maintenance of roadside vegetation.

CIR-P9.2 New development projects shall include safe routes to school where appropriate.

Impact: The project may house school-age children who may walk to local schools or bus stops along project roadways.

The project will include a sidewalk and bike lane along the project's frontage on Durham-Dayton Highway. It also includes an all-weather path from the western project boundary to the existing sidewalk near the corner of Midway and Durham-Dayton Highway.

The Durham Dayton Nelson Plan (Chapter 13 BCGP) also contains numerous goals and policies that support and reiterate the General Plan Circulation Element goals, objectives and policies. The following goals and policies of the D2N Plan relate to development projects and vehicular and/or bicycle and transportation.

Goal D2N-1 Provide a circulation and transportation system coordinated with land use to ensure streets and roads are safe, efficient and enhance the Planning Area's overall design and appearance.

D2N-O1.1 Maintain highways and roads, with appropriate street patterns and designs.

- a) Establish and design the street system to reflect more effectively the classification concept (arterial, collector, local) and the desired land use objectives of the community.
- b) The circulation system should support the collective mobility goals of the residents of the Planning Area as identified in the Butte County Regional Transportation Plan.

D2N-P1.1 Design local residential streets for access to properties and for discouraging through, non-local traffic.

D2N-P1.2 Utilize effective traffic control devices which would regulate flow provide adequate turning movements and promote pedestrian and bicycle safety.

D2N-P1.3 Develop subdivision street design strategies aimed at mitigating traffic hazards.

D2N-P1.4 Minimize conflicts between vehicular, pedestrian and bicycle traffic.

D2N-P1.5 Restrict residential development from locating adjacent to streets carrying or expected to carry 10,000 vehicles per day because of adverse noise levels.

D2N-P1.6 Seek means to restrict the routes for hazardous toxic materials and fuel trucks by restricting routes that go through populated areas.

D2N-P1.7 Require traffic studies on any residential development which will have significant impacts on transportation to evaluate the placement of traffic control devices.

D2N-P1.8 Where possible, new development shall plan arterial roadways on all section lines and collector roadways on all half-section lines to provide for efficient circulation.

D2N-P1.9 An east-west interlink between Durham-Dayton Highway and the Midway shall be adopted prior to any subdivision approvals for property located north of the school. In addition, a north-south route shall be considered as part of the circulation system to the area north of the school.

D2N-P1.11 Encourage new residential subdivisions to implement bicycle and pedestrian facilities in the subdivision design.

D2N-P1.12 Conduct traffic safety studies in connection with residential development, and identify pedestrian/traffic conflicts.

D2N-P1.19 Locate noise-sensitive uses a sufficient distance from railroads or provide appropriate mitigation measures to avoid adverse effects from trains passing through the Planning Area.

D2N-O1.2 Bicycle and pedestrian safety.

a. Provide policies and programs to ensure safer conditions for the bicyclist and pedestrian.

The Project includes bicycle and pedestrian facilities within the design (D2N-P1.11) and is consistent with Objective D2N-O1.2.

The noise analysis performed for the draft Initial Study found that the project will not result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. A Union Pacific Railroad track passes within 1,000 feet of the western edge of the project. The noise contribution from the railroad (58.7dB) is within the acceptable limits for interior and exterior noise exposure in the Butte County General Plan 2030. Building code requirements help reduce the interior noise levels to less than 45 dB or include a mitigation to reduce to the noise level to 45 dB or less. No mitigations are required for railway noise.

D2N-O1.4 Public transit.

a. Provide public transportation to that segment of the population within the community which is transit dependent, and continue to support public transit for area residents.

D2N-P1.20 Require new subdivisions to incorporate transit design characteristics in street designs.

D2N-P1.21 Require large subdivisions to provide a transportation system management plan which incorporates public transit as an element.

The proposal reserves space for a B-line bus stop to provide future access to public transit for the residents.

5.6.6.3 Significant Environmental Effects of the Proposed Project

The project was found to have one significant and unavoidable effect on traffic and circulation. Potential impacts included an increase in incompatible use between vehicular traffic and farm equipment and lack of a clearly designated safe route to school and school bus stops. Two mitigations were developed to reduce the impacts to less than significant levels. One impact remains significant and unavoidable.

5.6.6.4 Significant Environmental Effects That Cannot be avoided with the Proposed Project

There will be two significant and unavoidable impacts: agricultural resources and VMT in relation to reduction in greenhouse gas emissions.

5.6.6.5 Significant Irreversible Environmental Changes Involved in Implementing the Proposed Project

There will be no significant irreversible changes on traffic and circulation systems by implementing the proposed project.

5.6.6.6 Growth-Inducing Impacts of the Proposed Project

The proposed project is not anticipated to induce significant growth with the community.

5.6.6.7 Cumulative Impacts

The VMT impact would be significant under cumulative conditions. The same mitigation measures recommended under baseline plus project conditions would also apply for the cumulative impact.

Table 8. Future Intersection Levels of Service from Creekside Estates Traffic Study

Table 4
Summary of Future Peak Hour Intersection Level of Service Calculations

Study Intersection Approach	Future Conditions				Future plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Midway/Jones Ave <i>Westbound Jones Ave Approach</i>	0.4 <i>10.7</i>	A B	0.9 <i>10.1</i>	A A	0.5 <i>10.7</i>	A B	0.9 <i>10.1</i>	A B
2. Durham-Dayton Hwy/Midway	15.1	C	12.5	B	15.8	C	13.1	B
3. Durham-Dayton Hwy/Jones Ave <i>Southbound Jones Ave Approach</i>	0.7 <i>10.7</i>	A B	0.7 <i>10.3</i>	A B	0.7 <i>10.9</i>	A B	0.7 <i>10.7</i>	A B
4. Durham-Dayton/Project Access A <i>Northbound Project Access Approach</i>	**	**	**	**	0.6 <i>13.4</i>	A B	0.7 <i>11.8</i>	A B
5. Durham-Dayton/Project Access B <i>Northbound Project Access Approach</i>	**	**	**	**	0.1 <i>9.2</i>	A A	0.0 <i>9.7</i>	A A
6. Durham-Dayton Hwy/Lott Rd <i>Northbound Lott Rd Approach</i> <i>Southbound Lott Rd Approach</i>	3.1 <i>10.2</i> 9.3	A B A	3.1 <i>11.3</i> 9.9	A B A	3.0 <i>10.3</i> 9.3	A B A	3.0 <i>11.5</i> 10.0	A B A
7. Durham-Dayton Hwy/Stanford Ln <i>Northbound Stanford Ln Approach</i>	1.1 <i>11.4</i>	A B	0.7 <i>10.9</i>	A B	1.1 <i>11.5</i>	A B	0.6 <i>11.0</i>	A B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; ** Intersection to be created by the project

6 MANDATORY FINDINGS OF SIGNIFICANCE

The EIR analysis identified potential for cumulative impacts in each of the areas of the environment that were assessed in the EIR except for Land Use and Planning. Agricultural conversion, air quality and greenhouse gas impacts, impacts on groundwater supply, and increased traffic are all unavoidable effects of growth and development. The Butte County General Plan EIR recognized that both conversion of agricultural lands and production of greenhouse gases would be significant and unavoidable with the implementation of the 2030 General Plan and future growth, and Butte County has adopted statements of overriding considerations with respect to these environmental impacts.

The cumulative impacts expected from the project were mitigated to the extent possible with the project design, and any residual impacts are in line with acceptable limits as defined by the applicable Butte County General Plan goals and policies. Conversion of agricultural lands would occur on a small portion of economically unproductive orchard and in an area that has been targeted by the County as appropriate for residential expansion for the community of Durham. Air quality impacts and greenhouse gas production would be partially offset by standard mitigations of the Butte County Air Quality Management District. There would be a net reduction in production of greenhouse gases and groundwater usage with replacement of a portion of the orchard with a compact residential development. The traffic study showed that intersections within the project vicinity can be expected to operate at LOS of A or B. BCAG growth models project a minor decrease in LOS to C under future conditions, except for one peak PM hour period at one intersection. The proposed project will have a significant VMT impact since it generates more than 110 vehicle trips per day and it generates home-based VMT per resident exceeding 16.7, which does not meet the 15 percent below the average BCAG region home-based VMT per resident in 2020.

6.1 CUMULATIVE IMPACTS

Cumulative development in the long-term is assumed to be in accordance with buildout of the General Plan 2030. The General Plan 2030 EIR projected that buildout of the General Plan would result in the development of approximately 13,700 residential units in unincorporated areas by 2030, along with industrial and commercial space. This level of development in unincorporated areas of Butte County would result in extensive conversion of rural and agricultural lands to urban uses. Although the General Plan EIR 2030 found that goals, policies, actions and regulations of General Plan 2030 would reduce and partially offset the conversion of farmland, a significant and unavoidable impact would occur because of the approximately 4,700 acres of farmland would be designated for non-agricultural uses. The project site is 49.4 acres of that land that was re-designated to a non-agricultural use.

6.2 GROWTH-INDUCING IMPACTS

The EIR analysis suggests that the project could have slight growth-inducing impacts. Annexation of the project site into the Durham Irrigation District's service area that poses a hurdle to development could increase the ease of development of adjacent properties; however, the likelihood of development occurring and an estimation of its impacts would be speculative.

6.3 SIGNIFICANT ENVIRONMENTAL EFFECTS

A draft Initial Study (2019) found significant environmental effects in a number of areas and developed mitigations to minimize the impacts and reduce them to less than significant levels. The redesigned project evaluated in this EIR included many of these mitigations as aspects of the project design.

Potentially significant environmental effects were found in this focused EIR in the areas of Air Quality and Greenhouse Gases, Biological Resources, Hydrology and Water Quality, and Transportation and Traffic. Mitigations were developed and included in the EIR to minimize the impacts in these areas (see Section 7 Mitigations for summary). When implemented, these mitigations should reduce potential impacts to a level of less than significant.

The proposed project exceeds the more than 110 vehicle trips per day and it generates home-based VMT per resident exceeding 16.7, which does not meet the 15 percent below the average BCAG region home-based VMT per resident in 2020, which will have a significant effect on air quality and greenhouse gas emissions.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

With development of the project, the 49.4 acres will be irreversibly lost to agricultural use. The loss of the land for agricultural production in the long-term is assumed to be in accordance with buildout of the General Plan 2030. This level of development in unincorporated areas of Butte County would result in extensive conversion of agricultural lands to urban uses. Although the General Plan EIR 2030 found that goals, policies, actions and regulations of General Plan 2030 would reduce and partially offset the conversion of farmland, a significant and unavoidable impact would occur because of the approximately 4,700 acres of farmland would be designated for non-agricultural uses.

7 MITIGATION AND MONITORING PROGRAM

The mitigation requirement of state and federal agencies requires the development of a formal mitigation monitoring program to ensure that monitoring is carried out in all stages. Monitoring is divided into three (3) categories related to the timing of activities and implementation of mitigations.

Before Construction (Pre-Construction Mitigations). These are activities that precede any actual land disturbance. Included among these mitigations is the development of drainage, erosion control, and agricultural management plans. Also included are pre-construction establishment of Environmentally Sensitive Areas (ESAs) or Zones (ESZs) around archaeological sites and mature trees to be preserved.

Construction-Related Mitigations. These include implementation of the drainage and erosion control plans and all other measures required to reduce the impacts of construction and development on the site lands.

Post-Construction Mitigations. These include the maintenance programs necessary to ensure long-term control of erosion, protection of surface water quality in runoff, and management of the waste water, lighting, and road enhancements programs.

The mitigations proposed for the Monitoring Program are a combination of specific and general measures appropriate to a construction project and maintenance of the proposed project.

Monitoring will be the responsibility of Butte County, as well as some state agencies. Physical inspections may be delegated to a private company or individuals chosen by those agencies. The monitor will be on-site during construction to ensure compliance with required mitigations.

7.1 MITIGATION MEASURES FROM FOCUSED EIR ANALYSIS

Mitigation Measure AIR-1: Construction Requirements

Consistent with the guidance from the BCAQMD, the project applicant shall implement the following measures during construction of the project.

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- To the extent feasible, maximize the use of diesel construction equipment meeting the ARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission.
- Haul vehicles transporting soil into or out the property shall be covered.
- A water truck shall be on site at all times. Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- On-site vehicles limited to a speed which minimizes dust emissions on unpaved roads.

- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with District Rule 200 & 205.
- Vehicles entering or exiting construction areas shall travel at a speed which minimizes dust emissions.
- Construction workers shall park in designated parking areas.
- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s).
- Limit dust producing construction activities during wind events exceeding 15 mph.

Plan Requirements: The Butte County Department of Development Services and Department of Public Works shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. The contractor(s) shall be responsible for implementing the above mitigation conditions.

Timing: Measures above, shall be enforced through all construction activities.

Monitoring: The Building Division of Butte County Department of Development Services and the inspection staff shall monitor this condition for compliance. Violations of District Rules shall be reported to BCAQMD immediately.

Significance after Mitigation: Implementation of this measure will reduce construction impacts to a level which would not violate air quality standards.

Mitigation Measure BIO-1

If the project will include vegetation removal (including grasses) or earthwork of any kind during the nesting season (February 1 through August 31), CDFW recommends a pre-construction nesting bird survey be conducted by a qualified biologist to identify the absence or presence of active (i.e. with eggs or young) nests. The survey area should include the project site and a minimum 300-foot buffer around the project site. To minimize the chance of nests becoming established between the time the survey is conducted and when construction begins, CDFW recommends the preconstruction survey be conducted no more than three (3) days before the start of vegetation removal and/or ground disturbing activities. Please also note that Fish and Game Code section 3503 protects the nests and eggs of all birds, not just migratory birds and birds of prey. If active nests are observed during the pre-construction survey a species-appropriate no-disturbance buffer should be established to protect the active nest. Nesting birds' tolerance of disturbance varies greatly depending on species, intensity of disturbance, whether the nesting pair is accustomed to disturbance, the location of the nest, the stage of development of nestlings, etc. Disturbance too close to the nest may impact the parents' ability to forage effectively and reduce nestlings' chances of survival. In some cases, disturbance can cause the parents to abandon the nest completely. For these reasons the size of the no-disturbance buffer should be determined by the qualified biologist. CDFW is available to provide comments and feedback on nesting bird avoidance strategies if desired. However, it should be noted that CDFW cannot guarantee that any specific buffer

width will be sufficient to completely avoid take in any given situation, and therefore CDFW cannot approve or disapprove specific buffer proposals.

Plan Requirements: Perform protocol-level surveys for migratory birds protected by the California Department Fish & Game Code and the Migratory Bird Treaty Act. This measure shall be recorded on an additional map sheet to the Parcel Map.

Timing: Requirements of the condition shall be adhered to prior to and during construction activities planned to occur during nesting seasons for CDFC and MBTA species (between February 1 and August 31).

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is recorded on an additional map sheet of the Parcel Map. Department of Development Services shall ensure the condition is met at the time of construction activities.

Mitigation Measure BIO-2

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "Any ground disturbance or vegetation removal within the project area should be conducted during the non-breeding season (September 16 through February 28). If construction activities occur during the breeding season (March 1-September 15) then a pre-construction raptor survey will be conducted by a qualified biologist to identify any active Swainson's hawk nests within and in the vicinity of the BSA. The pre-construction survey will take place in accessible areas within a 0.5-mile radius of the area where construction activities would occur. The required survey radius may be reduced on a case-by-case basis if approved by CDFW, but in no case will be less than 500 feet. At least one survey will be conducted no more than one week prior to the initiation of construction. If no active nests are located, no further measures are necessary to avoid impacts to Swainson's hawk nests. If active nests are identified, the following measures will be implemented:

3. A no-disturbance buffer zone will be established around the nest. The width of the buffer will be determined by a qualified biologist in coordination with CDFW. Determination of the required width will consider the distance of the nest from construction activities, existing level of disturbance, etc.
4. A qualified biologist will monitor active nests within 500 feet (or the width of the buffer zone) of construction activities. The first monitoring event will coincide with the initial implementation of construction activities and monitoring will continue at least once a week until the young have fledged. If the biologist determines that construction is disturbing the birds and nest failure is possible, CDFW will be notified immediately. Measures to avoid nest failure will be implemented in coordination with CDFW and may include halting some or all construction activities until the young have fledged. For monitored nest sites, a monitoring report will be submitted to CDFW within two weeks after termination of monitoring activities.

Plan Requirements: The above referenced mitigation shall be placed on a separate document which is to be recorded concurrently with the final map or an additional map sheet.

Timing: Requirements of the condition shall be adhered to prior to construction activities.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Department of Development Services shall ensure the condition is met at the time of development and during construction activities.

Mitigation Measure CUL-1: Cultural Resource Protection.

Place a note on a separate document, which is to be recorded concurrently with the Final Map or on an additional map sheet and on all building and site development plans, that includes the following:

The project engineer shall create a map of based on the Jensen and Associates 1991 Cultural Resources Report that indicates the area of the prehistoric site of potential historical significance with a 100-foot buffer and labeled “Environmentally Sensitive Area.” No ground- disturbing work shall be allowed within this area.

The note shall include the following language: “A qualified archaeological monitor shall be hired and be present to inspect all ground-breaking activities including tree removal. Should grading activities reveal the presence or prehistoric or historic cultural resources (i.e. artifact concentrations, including arrowheads and other stone tools or chipping debris, cans glass, etc.; structural remains; human skeletal remains) work within 50 feet of the find shall immediately cease until a qualified professional archaeologist can be consulted to evaluate the find and implement appropriate mitigation procedures. Should human skeletal remains be encountered, State law requires immediate notification of the County Coroner. Should the County Coroner determine that the remains are in an archaeological context, the Native American Heritage Commission in Sacramento shall be notified immediately, pursuant to State law, to arrange for Native American participation in determining the disposition of any remains.” The provisions of this note shall be followed during construction of all subdivision improvements, including land clearing, road construction, utility installation, and building site development.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: This measure shall be implemented during all site development activities involving ground disturbance.

Monitoring: Should cultural resources be discovered, the landowner shall notify the Planning Division and a professional archaeologist. The Planning Division shall coordinate with the developer and appropriate authorities to avoid damage to cultural resources and determine appropriate action. State law requires the reporting of any human remains.

Mitigation Measure GHG-1: Greenhouse Gases Construction Codes.

The project applicant shall incorporate the following measures into project design and construction:

- Support expansion of renewable energy systems. Prewire all new residential development to support photovoltaic system installation;
- Support efficiency in vehicles and landscaping equipment. Install electrical vehicle outlets on external walls or in garages in all new residential development;
- Install electrical vehicle outlets on external walls or in garages in all new residential development. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minute. Use clean or alternative fuel equipment;
- Construction of the proposed project shall utilize recycled-content construction materials to the extent feasible;
- Project design shall comply with the Green Building Standards adopted by the California Standards Commission at the time of building permit application, including requirements about low- or no-toxicity building materials;
- The project shall meet all appropriate green planning standards; and
- The project design shall maximize energy efficiency and meet the guidelines of the California Energy Star New Homes Program and demonstrate detailed energy conservation measures.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-construction, Construction.

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions are met before a building permit is approved and shall verify compliance through their inspection processes.

Significance after Mitigation: Implementation of this measure will comply with the requirements for reduction of greenhouse gases to the extent feasible.

Mitigation Measure HYD-1:

Adherence to Butte County standards for development within a flood zone. The project will be built in accordance with Butte County standards and requirements for construction within a flood zone. Building will occur at 3 feet above the flood. Increases in any runoff from the site will be addressed within the project design.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-construction

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions are met before a building permit is approved and shall verify compliance through their inspection processes.

Significance after Mitigation: Less than Significant.

Mitigation Measure HYD-2: Timing of Excavation

Construction requiring excavation of material and temporary on-site storage of excavated material shall be limited to the dry season, or between April 15 and October 15 of the construction year.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Construction

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions shall verify compliance through their inspection processes.

Significance after Mitigation: Less than Significant.

Mitigation Measure HYD-3: Remedial Off-site Storage of Excavated Material

All excess material excavated during construction shall be transported off site and outside of the currently designated flood zone. Stockpiling of soil shall not occur on site outside of the designated construction window of April 15 through October 15.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Construction

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions shall verify compliance through their inspection processes.

Significance after Mitigation: Less than Significant.

Mitigation Measure TT-1: Line of Sight Maintenance.

Areas within the line of sight along Durham- Dayton Highway, which extends 25 feet south of the edge of the pavement, must be kept clear of vegetation, signage, and other obstacles to maintain the adequate sight distance.

Plan Requirements: This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: Construction, Post-construction.

Monitoring: The Butte County Department of Development Services and Department of Public Works.

Mitigation Measure TT-2: Signage and Shoulder to Minimize Conflicts with Farm Equipment.

Provide signage indicating “turning vehicles” near access points and tractor symbol signage.

Plan Requirements: The Building Division of Butte County Department of Development Services and Department of Public Works shall ensure that a note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet.

Timing: Pre-Construction, Construction

Monitoring: The Building Division of the Butte County Department of Development Services and Department of Public Works shall ensure that the above mitigation conditions shall verify compliance through their inspection processes.

Significance after Mitigation: Less than Significant.

8 PERSONS AND ORGANIZATIONS CONTACTED

Name	Association	Division	Position
Dick Jones	Creekside Estates Project		Project Manager
Wes Gilbert	W. Gilbert Engineering		Project Engineer
Mark Adams	Durham Irrigation District		District Engineer
Lloyd Web	Durham School District		Superintendent
	BUTTE COUNTY		
Paula Daneluk	Dept. of Development Services	Planning	Director
Peter Calarco	Dept. of Development Services	Planning	Assistant Director
Dan Breedon	Dept. of Development Services	Planning	Manager
Mark Michelena	Dept. of Development Services	Planning	Senior Planner
Brian Lasagna	Butte County Assoc. of Governments		Regional Analyst
Stephen Lucas	Local Agency Formation Commission		Executive Officer
Kory L. Honea	Butte Co. Sheriff's Department		Sheriff
William Allen	County GIS Support		
	TEHAMA COUNTY		
Scott Timboe		Planning	Senior Planner
	STATE OF CALIFORNIA		
Scott A. Zeitz	Central Valley Regional Water Quality Water Board		Environmental Scientist
Nancy Gonzalez-Lopez	Native American Heritage Commission		Staff Service Analyst
Nima Kabirinassab	Caltrans		Associate Transportation Planner
Julia Kingsley	California Transportation Commission		Assistant Deputy Director

9 EIR PREPARATION PERSONNEL

Eco-Analysts

Albert J. Beck, Ph.D. - Principal Analyst

Anita Grey, B.S – Administrator

10 LIST OF ACRONYMS

AB	Assembly Bill
AG-20	Agricultural 20 acre lots
AQAP	Air Quality Attainment Plan
ARB	Air Resources Board
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Management District
BCFD	Butte County Fire Department
BCGP	Butte County General Plan
BCSO	Butte County Sheriff's Office
BRCP	Butte Regional Conservation Plan
c/mve	collisions per million vehicles entering
CAHP	California Advanced Homes Program
CalEEMod	California Emission Estimator Model
CALFIRE	California Department of Forestry and Fire
CalTrans	California Department of Transportation
CEQA	California Environmental Quality Act
CDPH	California Department of Public Health
CH ₄	methane
CIR-P	Circulation Element Policy
COS-P	Conservation and Open Space Element Policy

CSA	County Service Area
CFPP	Central Valley Flood Protection Plan
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CVFPP	Central Valley Flood Protection Plan
CVRWCB	Central Valley Regional Water Quality Board
D2N	Durham Dayton Nelson Plan
DID	Durham Irrigation District
DOT	United States Department of Transportation
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gases
GC	General Commercial
GI	General Industrial
GPD	gallons per day
GPM	gallons per minute
GWP	global warming potential
HCP/NCCP	Habitat Conservation Plan/Natural Communities Conservation Plan
HFCs	hydrofluorocarbons
LAFCO	Local Agency Formation Commission

LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
LU	Land Use Element
m	meter
m ³	cubic meter
MCL	maximum contaminant level
mg	milligrams
µg	micrograms
MDHR	Medium High Density Residential
MDR	Medium Density Residential
MND	Mitigated Negative Declaration
N ₂ O	nitrous oxide
NEV	Neighborhood Electric Vehicles
NFIP	National Flood Insurance Program
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
O ₃	ozone
Pb	lead
PFCs	perfluorocarbons
PM ₂	particulate matter less than 2 microns in size
PM ₁₀	particulate matter less than 10 microns in size
ppb	parts per billion
ppm	parts per million
PRD	Permanent Road Division
PUD	Planned Unit Development

ROG	Reactive Organic Gases	
SB	Senate Bill	
SDWA	Safe Drinking Water Act	
SF ₆	sulfur hexafluoride	
SIU	Sub-inventory Unit	
SO ₂	sulfur dioxide	
SOI	Sphere of Influence	
SVAB	Sacramento Valley Air Basin	
SWPPP	Stormwater Pollution Prevention Plan TAC	toxic air contaminant
URBEMIS	Urban Emissions Model	
USACE	United States Army Corps of Engineers UPA	Urban Permit Area
USC	United States Code	
VLDR	Very Low Density Residential	
WM	North Valley Waste Management	