Addendum to
2005 Dutton Meadows Project Subsequent Environmental Impact Report

Prepared for

Trumark Homes for Submittal to City of Santa Rosa

December 2018

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Appendices

1.0 Introduction

This Addendum to the 2005 Dutton Meadows Project Final Subsequent Environmental Impact Report (2005 SEIR) and, for topics not addressed in that document, the 2000 Southwest Santa Rosa Redevelopment Project EIR has been prepared pursuant to the California Environmental Quality Act (CEQA) to address the change in environmental impacts associated with proposed revisions in housing types for portions of the Dutton Meadows Project (Project), as well as any substantial changes to existing environmental conditions. The overall Dutton Meadows development is a proposed 58-acre residential and commercial development in the southwestern portion of Santa Rosa. The proposed Project area is an 18.4-acre portion of the overall site that was approved for residential development in 2006. This Addendum includes an overview of the Project history and discusses to what degree it would have the potential to cause new significant environmental impacts on the site and vicinity.

Five sections follow this introductory section:

2.0 Project Description
3.0 Analysis of Environmental Impacts
4.0 Conclusions
5.0 Report Preparers
6.0 References

This Addendum also includes, and incorporates the findings of, the following technical appendices:

Appendix A: 2018 Air Quality and Greenhouse Gas Technical Report

Appendix B: 2018 Noise Technical Report

Appendix C: 2018 Cultural Resources Assessment

Appendix D: 2018 Biological Resource Analysis

Appendix E: 2018 Arborist Report

Appendix F: 2018 Phase I Environmental Site Assessment

Appendix G: 2018 Traffic Study

1.1 CEQA Guidelines for Preparing an Addendum

The CEQA Guidelines identify the decision-making process the City should use to determine the type of CEQA document appropriate for this modification to the 2005 Final SEIR (§15164(a) and §15162). The CEQA Guidelines (§15164(a)) specify that the lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred. According to Section 15162, a

subsequent EIR **shall not** be prepared for the Project unless the City determines, based on substantial evidence in light of the whole record, one or more of the following conditions are met:

- Substantial changes are proposed to the Project which will require major revisions to the 2005 SEIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects
- Substantial changes occur with respect to the circumstances under which the Project is undertaken which will require major revisions to the 2005 SEIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the 2005 SEIR was certified as complete, shows any of the following:
  - The Project will have one or more significant effects not discussed in the 2005 SEIR;
  - Significant impacts previously examined in the 2005 SEIR will be substantially more severe than shown in that SEIR;
  - Mitigation measures or Project alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant impacts on the environment, but the City declined to adopt the mitigation measure or alternative; or
  - Mitigation measures or Project alternatives which are considerably different from those analyzed in the 2005 SEIR would substantially reduce one or more significant impacts on the environment, but the City declined to adopt the mitigation measure or alternative.

1.2 Project and Environmental Impact Report Background

The Project is located in the City of Santa Rosa's Southwest Area Plan area. The City completed a Master EIR on development of the overall plan area (Southwest Area Plan Final Environmental Impact Report) in 1994, and updated that assessment in the Southwest Santa Rosa Redevelopment Project Final EIR in 2000. In 2005, the City certified a Subsequent EIR that assessed rezoning to add parcels to the Plan Area, adoption of a conceptual Master Development Plan, and proposed development of three of the projects within the Plan Area. That EIR was tiered off of the 2000 EIR, and incorporated and updated impacts and mitigation measures from that document, as well as revised and new impacts and mitigation measures. Potential impacts in the Dutton Meadows project area that were found to have been adequately addressed in those previous EIRs were not evaluated further, but were incorporated by reference into the

2005 SEIR Specific residential development projects for the Project parcels were approved in 2007, along with CEQA Findings of Overriding Consideration for the significant unavoidable impacts. In 2009, the City adopted a new 2035 General Plan accompanied by a new EIR for that plan. That General Plan and EIR included the previously approved plan and developments for the Plan Area.

The 1994 and 2000 EIRs found significant unavoidable impacts on the following topics:

- Loss of Farmland of Local Importance
- Addition of traffic to US 101
- Addition of traffic to local roadways
- Increased visual effects of urbanization
- Substantial increase in carbon monoxide and small particulate (PM10) air pollutants
- Increased traffic noise on existing land uses
- Loss of foraging area for sensitive bird species

The 2005 SEIR added detailed, project-specific, studies of traffic and circulation, utilities and public services, hazardous materials, historic and cultural resources, and biological resources for the Dutton Meadows area. That document carried over the earlier EIRs' findings of significant unavoidable impacts on loss of farmland, change in visual character, noise, and air quality degradation. The 2005 SEIR also found significant unavoidable impacts associated with cumulative loss of California tiger salamander (*Ambystoma californiense*) individuals and habitat.

Since 2005, a portion of the overall 58-acre Dutton Meadows site has been developed in accordance with the previously approved Development Plan. Constructed development includes:

- Colgan Meadows (2008): 84 affordable family rental units

This Addendum updates all of the 2005 SEIR studies as well as the 2000 Southwest Area Plan EIR's land use, air quality, and noise studies, which were not updated in the 2005 SEIR. This Addendum also addresses greenhouse gas and tribal cultural resources impacts, which were added as CEQA-required topics subsequent to 2005.

2.0 Project Description

This Addendum addresses proposed changes to approved development of two portions of the overall Dutton Meadow Plan Area, totaling 18.4 acres. These parcels are referred to as the Southwest Quadrant and Minoa parcels. In 2007, the City approved 162 market-rate and 29 "affordable" residential units for these parcels. 126 of these units were proposed to be multiple-family units (townhouses) and the remainder of the units (65) were approved as single-family houses. The approved net density was 12.55 units/acre. Figure 1 shows the project location, and Figure 2 shows the project parcels.

The project revisions would change the number and type of units proposed for the Southwest Quadrant and Minoa parcels. As summarized in Table 1, below, the previously proposed 126 two- and three-story, multiple-family units (townhouses) and 65 single-family houses would be replaced with 130 larger, two-story single-family houses that would include 81 one-bedroom in-law units (Accessory Dwelling Units, or ADUs), for a total of 211 new units. The new net density would be 14.18 and 8.74 units/acre with and without the ADUs, respectively. The project net acreage would change from 14.82 acres to 14.88 acres. Figure 3 shows the proposed conceptual site plan.

Project maximum heights would not change. The project is proposed for construction in 2019, and construction duration would be similar to that of the currently approved project.

	Approved			**Proposed**
	Dutton Meadow	**Minoa**	**Total**	**Dutton & Minoa**
Address	SW Quadrant	1112 & 1200 Hearn Ave		Same
Market Rate Units	107	55	162	130
Affordable Units (For Sale) 15%	19	10	29	0
Accessory Dwelling Units - ADU (Market)	0	0	0	61
Accessory Dwelling Units - ADU (Affordable Rental)	0	0	0	20
Total (For Sale) Unit Count	126	65	191	130
Total Dwelling Units (including ADU's)	126	65	191	211
Primary Unit Type	Townhouse	Singe Family		Single Family
Accessory Dwelling Unit Type	N/A	N/A		1 Bed
Plan Types	3	3		4
Primary Unit Square Footage	1341-1884	1454-1650		1865 - 2666
Accessory Dwelling Unit Footage	N/A	N/A		557 - 696
Project Size Gross Acreage	12	6.4	18.4	18.42
Project Size Net Acreage	8.52	6.3	14.82	14.88
Density: DU/Acre (Primary Units)	14.8	10.3	12.55	8.74
Density: DU/Acre (Primary+ADU))	N/A	N/A	N/A	14.18

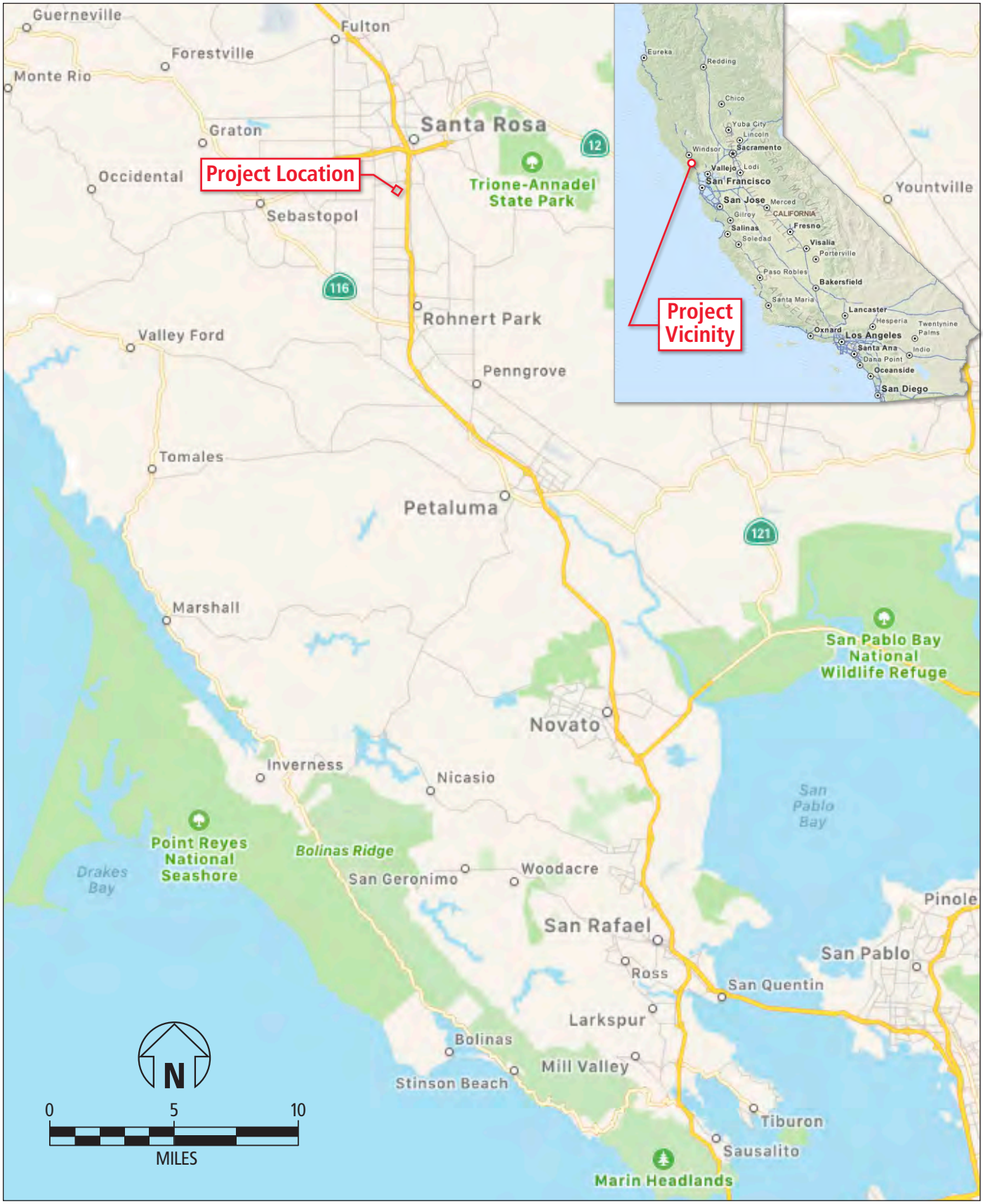

Figure 1

Project Location

Source: TomTom Maps and Grasetti Environmental

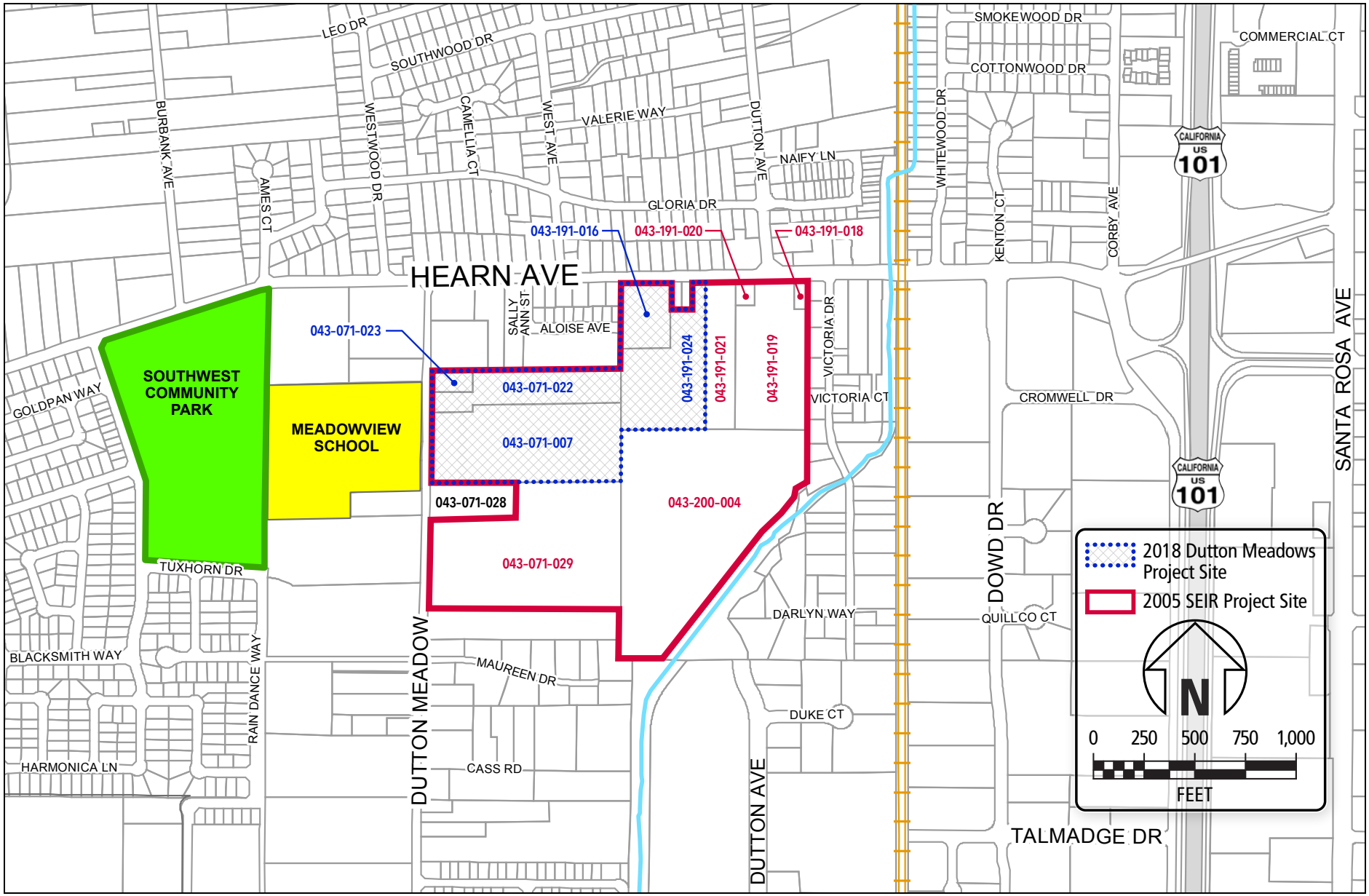

Figure 2

Site Plan

Source: City of Santa Rosa

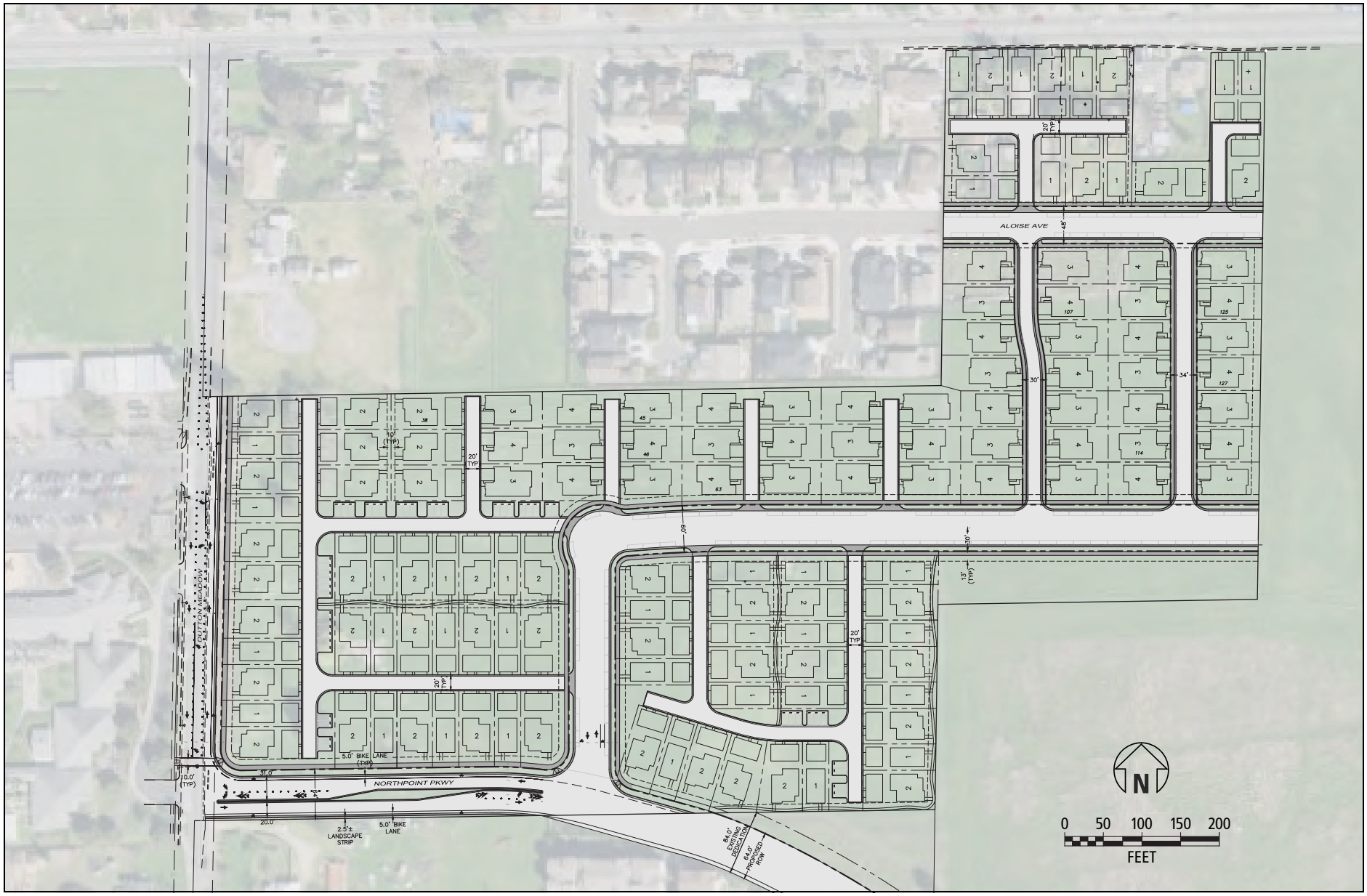

Figure 3

Conceptual Site Plan

Source: Adobe Associates, Inc.

3.1 Impacts Previously Evaluated

In order to evaluate the potential impacts of the proposed changes to the project, the City reviewed the 2005 SEIR to identify resource areas that might be affected by this change in the Project. As described in Chapter 2, Project Description the primary change is the conversion of previously approved townhouse units to single-family units with in-law apartments, therefore the City determined that this change would not have the possibility to change the findings of significant impacts for the loss of farmland, change in visual character, loss of tiger salamander individuals and habitat, noise, and air quality degradation as presented in the 2005 SEIR. Further, because the same areas of disturbance would occur, and the development would be similar to that previously assessed (residential development of the parcels), the evaluations of Cultural Resources (except tribal cultural resources), Population, Employment and Housing; Visual Quality and Community Character; Soils, Geology and Seismicity; Public Services (police, fire, parks), Mineral Resources, Recreation, and Hydrology and Water Quality in the previous EIRs and findings are still applicable.

In order to determine if there might be any possibility for the project changes or changed conditions to result in significant impacts to biological resources, air quality, noise, greenhouse gases, hazardous materials, traffic, utilities and services (water supply, sewage, schools), tribal cultural resources, or land use that were not previously identified in the 2005 SEIR, the applicant commissioned detailed evaluations of these topics for the City's review and incorporation into this Addendum. These evaluations are included as appendices to this Addendum and summarized in this chapter.

3.2 Air Quality

Introduction

Information in this section is based on the Dutton Meadows Air Quality and Greenhouse Gas Emissions Technical Report (RCH Group, 2018). The Air Quality and Greenhouse Gas Emissions Technical Report provides an overview of the existing air quality conditions at the proposed project site, the air quality regulatory framework, and an analysis of potential air quality impacts (including assumptions and methodology) that would result from implementation of the proposed project. The results of the RCH Group's analyses are summarized herein; the complete analysis is presented in Appendix A of this Addendum. It is noted here that the Air Quality and Greenhouse Gas Emissions Technical Report was prepared for the project with an earlier unit count of 203 total units. While the updated project unit count is now 2011 total units, the conclusions from the Air Quality and Greenhouse Gas Emissions Technical Report would not change. Both the construction emissions estimates (Table 3.2-1) and the operational emissions estimates (Tables 3.2-2, 3.2-3 and 3.3-1) reported here are well below the thresholds of significance and an approximate four percent increase in total units would only increase the emissions by approximately four percent and the estimates for project construction and operations emissions would still be far below the Bay Area Air Quality Management District (BAAQMD) thresholds of significance shown in the tables.

Previous Analyses and Findings

The 1994/2000 FEIRs addressed impacts from construction-related emissions; from vehicular, home heating/cooling, and wood burning emissions; and from construction and operation toxic air emissions. The 2005 SEIR did not address air quality impacts, and instead incorporated the 1994/2000 FEIR study by reference. The 1994/2000 FEIRs found that implementation of Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 would reduce construction-related, vehicular, and toxic air contaminant (TAC) emissions to a less-than-significant level. These mitigation measures would be incorporated into the proposed project conditions and would be implemented during preparation and review of improvement plans and building permits and during construction through the review of soils reports and studies, plan specifications, and field inspections. No new potential impacts to air quality not previously addressed in the 1994/2000 FEIRs would occur as a result of the proposed project with implementation of Mitigation Measures AQ-1 through AQ-3. No new or considerably different mitigation measures or alternatives have been identified to reduce one or more significant effects on the environment.

The 1994/2000 FEIRs described less than significant air quality impacts. In addition, the Master EIR described potentially significant impacts due to construction activities and found them to be less than significant with mitigation. The 1994/2000 FEIRs addressed air quality in accordance with the Bay Area Air Quality Management District (BAAQMD)'s Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plan (dated November 1985) which was applicable at the time.

At the time of the 1994/2000 FEIRs, the Bay Area was in nonattainment for ozone, carbon monoxide (CO), and particulate matter air quality standards. Generally, the regional air quality has improved since that time due to regulatory improvements to emission efficiencies. However, air quality standards have also been strengthened. As a result, the Bay Area is currently designated nonattainment for state and national ozone standards and for state and national particulate matter standards but in no longer nonattainment for CO.

Roadway Emissions. The 1994/2000 FEIRs described less than significant air quality impacts related to CO concentrations at roadway intersections. They estimated the localized CO concentrations at several intersections, and concluded that CO concentrations were predicted to remain below the California/National Ambient Air Quality Standards (CAAQS/NAAQS) and thus, would be less than significant impact.

Construction Emissions. The 1994/2000 FEIRs described potentially significant impacts due to construction activities but found them to be less than significant with mitigation (1994/2000 FEIRs Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4). Those EIRs also described less-than-significant regional emissions due to operations.

The 1994/2000 FEIRs did not specifically quantify construction emissions but concluded that, per BAAQMD *Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plan*, the incorporation of best management practices would reduce air quality impacts to less than significant. Using emissions models (URBEMIS), the 2000 FEIR estimated operational emissions and found that operational emissions would be less than the significant thresholds valid at the time. Therefore, the 1994/2000 FEIRs concluded that construction and operational emissions would be less than significant impact.

The air pollutant emission estimates are generally a function of the project size, land use type, and the year in which the activities take place. Generally, the proposed project would be comparable (or less) to the project evaluated in the 1994/2000 FEIRs, and would not include any features or components that would alter the conclusions of the previous environmental analysis.

Toxic Air Contaminants. Although the 1994/2000 FEIRs found that dust generation and air toxics during project construction and operations could cause potential significant adverse health impacts on nearby residential receptors, it did not perform a health risk assessment or otherwise quantify these potential impacts. As noted previously, the 1994/2000 FEIRs concluded that implementation of Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 would reduce the impact to a less-than-significant level.

Odors. The 2000 FEIR did not address potential odor impacts.

2018 Air Quality Analysis

Compliance with Updated Air Quality Plans, Regulations, and Guidelines

Subsequent to the Master EIR, the BAAQMD's 2017 Clean Air Plan was adopted in April of 2017[1]. The Clean Air Plan provides a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. The Clean Air Plan identifies potential rules, control measures, and strategies that the BAAQMD can pursue to reduce air emissions and GHG emissions in the Bay Area. Measures of the Clean Air Plan addressing the transportation sector are in direct support of Plan Bay Area 2040 which incorporates the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan.

Current BAAQMD *CEQA Air Quality Guidelines* (dated June 2010, updated in May 2011, and revised in May 2012 and updated in May 2017)2 state that when a public agency contemplates approving a project where an air quality plan consistency determination is required, BAAQMD recommends that the agency analyze the project with respect to the following questions: (1) Does the project support the primary goals of the air quality plan, (2) Does the project include applicable control measures from the air quality plan, and (3) Does the project disrupt or hinder implementation of any Clean Air Plan control measures? If the first two questions are concluded in the affirmative and the third question concluded in the negative, the BAAQMD considers the project consistent with air quality plans prepared for the Bay Area. The recommended measure for determining project support of these goals is consistency within the current BAAQMD CEQA thresholds of significance.

The proposed project would be consistent with current BAAQMD CEQA thresholds of significance, and thus, there would have a less-than-significant impact associated with, conflicting with, or obstructing implementation of the applicable air quality plan. Therefore, the proposed project would not result in a new or substantially more severe air quality impact on clean air plan compliance than was previously evaluated.

2018 Air Pollutant Emissions Analysis

Project-Generated Traffic Emissions. Current BAAQMD *CEQA Air Quality Guidelines* requires reviewing a project's impacts on localized CO impacts near intersections and other areas with motor vehicles. Increased traffic volumes due to the proposed project operations would result in increased pollutant emissions in the vicinity of the roadways utilized by this traffic, which can cause pollutant levels to exceed the CAAQS/NAAQS, especially near congested intersections. The current BAAQMD *CEQA Air Quality*

[1] Bay Area Air Quality Management District, Final 2017 Clean Air Plan, April 19, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en

[2] Bay Area Air Quality Management District, CEQA Air Quality Guidelines, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Guidelines identifies the following screening criteria for determining whether a project's motor vehicle CO emissions would not likely cause CAAQS/NAAQS to be exceeded along congested roadway and other areas with motor vehicles:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per day.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per day where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The proposed project would generate minimal new traffic trips and would comply with these screening criteria. Based on the BAAQMD's criteria, project-related traffic would not exceed CO standards and therefore, this impact would be considered less than significant on a project-level and cumulative basis. Thus, the proposed project would not result in a new or substantially more severe local CO impact than was previously evaluated in the 1994/2000 FEIRs.

Project Construction Emissions. The current BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction and operational emissions and comparison of those emissions to significance thresholds. Therefore, as part of this Addendum, the estimated construction and operational emissions associated with the proposed project were compared to the current thresholds of significance to determine potential impacts. The air quality analysis includes a review of criteria pollutant emissions such as carbon monoxide (CO)[3], nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC) as reactive organic gases (ROG)[4], particulate matter less than 10 micrometers (coarse particulate or PM_{10}), and particulate matter less than 2.5 micrometers (fine particulate or $PM_{2.5}$).[5]

The significance thresholds and methodologies from the current BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of construction and operation of the proposed Project. The thresholds of significance applied are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG,

[3] CO is a non–reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces.
[4] VOC means any compound of carbon, excluding CO, carbon dioxide (CO_2), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. ROG are any reactive compounds of carbon, excluding methane, CO, CO_2 carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

[5] PM_{10} and $PM_{2.5}$ consists of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.

NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}, and

- Average daily operation emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10} or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10}.

The California Air Resources Board's (CARB) California Emission Estimator Model (CalEEMod, Version 2016.3.2)[6] was used to quantify construction and operational emissions. Construction activities are expected to occur over a 23-month period. Construction activities would begin with demolition and existing structure removal, site preparation and grading, followed by building construction, and finish with access road paving and architectural coating. Typically, construction activities would occur between 8 a.m. and 5 p.m. (ten hours per day), on Monday through Saturday. Construction activities would require the use of diesel construction equipment such as cranes, excavators, loaders, cement mixers, rollers, and pavers. CalEEMod is a land-use-based emissions model that estimates construction emissions from demolition and construction activities and operations. CalEEMod is the latest emission model and reflects CARB's current understanding of emission factors and calculation methodologies and how emissions have changed over time and are projected to change in the future. CalEEMod replaced the URBEMIS emissions model which was used for the 2000 FEIR.

Table 3.2-1 provides the estimated unmitigated short-term construction emissions that would be associated with the proposed project. Table 3.2-1 also provides the estimated mitigated (with the incorporation of the Required Measures AQ-1 through AQ-3) short-term construction emissions that would be associated with the proposed project. The construction phases (i.e., grading, site preparation, building construction, paving, and architectural coating) are sequential (i.e., do not generally occur simultaneously). Thus, the average daily construction emissions were determined as the total construction emissions divided by the number of construction days and then compared to the BAAQMD significance thresholds.

Table 3.2-1: Estimated Daily Construction Emissions (pounds)

Condition	ROG	NOx	PM^{10}	$PM2^{.5}$	CO
	Unmitigated				
Construction	**7.90**	**22.4**	**1.22**	**1.14**	**18.3**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No
	Mitigated				
Construction	**6.33**	**15.2**	**0.43**	**0.43**	**19.4**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No

SOURCE: California Air Resources Board CalEEMod Version 2016.3.2.

[6] California Air Resources Board, *California Emissions Estimator Model User's Guide*, November 9, 2017, http://www.caleemod.com/

As indicated in Table 3.2-1, the estimated average daily construction emissions would be below the current BAAQMD's significance thresholds and would have a less than significant impact on air quality. The maximum daily construction emissions vary from phase to phase. NO_x, PM_{10}, and $PM_{2.5}$ emissions tend to be highest during site preparation and grading and ROG tends to be highest during application of architectural coatings. Notably, the maximum daily construction emissions would also be below the current BAAQMD's significance thresholds.

CalEEMod was also used to estimate emissions that would be associated with motor vehicle use, space and water heating, and landscape maintenance expected to occur after the proposed Project construction is complete and operational. The proposed project land use types and size and other project-specific information were input to the model. Unless otherwise noted, the CalEEMod model defaults for Sonoma County were used. CalEEMod provides emissions for transportation, areas sources,[7] electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

Estimated daily and annual operational emissions that would be associated with the proposed project are presented in Tables 3.2-2 and 3.2-3 and are compared to BAAQMD's thresholds of significance. As indicated, the estimated proposed project operational emissions would be below the current BAAQMD's significance thresholds.

As shown in Tables 3.2-1 through 3.2-3, proposed project-related emissions would be less than the current BAAQMD significance thresholds. The current BAAQMD *CEQA Air Quality Guidelines* recommend that cumulative air quality effects from criteria air pollutants also be addressed by comparison to the mass daily and annual thresholds. These thresholds were developed to identify a cumulatively considerable contribution to a significant regional air quality impact. Project-related emissions would be below the significance thresholds. Therefore, the proposed project would not be cumulatively considerable and cumulative impacts would be less than significant.

Table 3.2-2: Estimated Daily Project Operational Emissions (pounds)

Condition	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
	Summer				
Area	8.27	0.12	0.06	0.06	10.4
Energy	0.08	0.69	0.06	0.06	0.30
Mobile	2.43	10.0	2.14	1.42	22.5
Total Proposed Project	**10.8**	**10.8**	**5.25**	**1.54**	**33.2**
Significance Threshold	54	54	82	54	---
Significant Impact?	No	No	No	No	No
	Winter				
Area	8.27	0.12	0.06	0.06	10.4

[7] Operational emissions associated with hearths (natural gas/propane fireplaces), consumer products (various solvents used in non-industrial applications, which typically include cleaning supplies, kitchen aerosols, and toiletries), area architectural coatings, and landscaping equipment.

Energy	0.08	0.69	0.06	0.06	0.30
Mobile	2.15	10.5	5.14	1.42	23.7
Total Proposed Project	**10.5**	**11.4**	**5.26**	**1.54**	**34.4**
Significance Threshold	54	54	82	54	---
Significant Impact?	No	No	No	No	No

SOURCE: California Air Resources Board CalEEMod Version 2016.3.2.
Note: These emissions estimates were based on an earlier site plan with 4% fewer units; the estimates are valid for the current site plan because the change in units is well within the range of error of the model, and because the emissions increase with the additional 8 units would clearly be well below any significance thresholds.

Table 3.2-3: Estimated Annual Project Operational Emissions (tons)

Condition	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Area	1.48	0.01	0.01	0.01	0.94
Energy	0.02	0.13	0.01	0.01	0.05
Mobile	0.37	1.79	0.85	0.24	3.88
Total Proposed Project	**1.87**	**1.92**	**0.87**	**0.26**	**4.87**
Significance Threshold	10	10	15	10	---
Significant (Yes or No)?	No	No	No	No	No

SOURCE: California Air Resources Board CalEEMod Version 2016.3.2.

The proposed project would be comparable to the project (project size and land use type) evaluated in the 1994/2000 FEIRs, and would not include any features or components that would alter the conclusions of the previous environmental analysis. Thus, the proposed project construction activities and operations would not result in new or substantially more severe air quality impacts than were previously evaluated in the 1994/2000 FEIRs. Those EIRs identified three mitigation measure to reduce identified construction-related air quality impacts. 1994/2000 FEIR Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 would continue to apply to the proposed project.

Toxic Air Contaminants. The current BAAQMD *CEQA Air Quality Guidelines* requires an assessment of air toxics impacts on sensitive receptors. Therefore, as part of this Addendum, the estimated health risks associated with the proposed project were compared to the current thresholds of significance to determine potential health impacts. The current BAAQMD *Air Quality Guidelines* also requires an assessment of $PM_{2.5}$ concentrations as a result of the proposed Project construction exhaust emissions. The proposed project would constitute a new emission source of toxic air contaminant (such as diesel particulate matter or DPM) as well as $PM_{2.5}$ due to its construction activities.[8] Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen

[8] In 1998, CARB classified diesel particulate matter as a toxic air contaminant, citing its potential to cause cancer and other health problems. The USEPA concluded that long-term exposure to diesel engine exhaust is likely to pose a lung cancer hazard to humans and can also contribute to other acute and chronic health effects.

and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. The proposed project would also locate sensitive receptors near existing roadways, which are an emission source of DPM and $PM_{2.5}$. Therefore, a health risk assessment (or HRA), focused on DPM and $PM_{2.5}$ emissions, was conducted to address construction activities associated with the proposed project and the siting of new receptors near existing emission sources.

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to the BAAQMD, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

The proposed project would constitute a new emission source of DPM and $PM_{2.5}$ due to its construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. The adjacent properties within 1,000 feet of the proposed project include single family residences to the north and south and Meadow View Elementary School to the west of the project site. During construction, onsite activities would result in the emission of exhaust from vehicles and heavy-duty equipment as well as the generation of fugitive dust from grading and ground disturbing activities. The proposed project is not expected to result in significant construction-related emissions that could expose sensitive receptors to substantial pollutant concentrations. Nonetheless, implementation of Required Measures AQ-1 and AQ-2, below would further reduce fugitive dust and combustion exhaust through the application of best management practices during construction.

Construction activity could occur in areas adjacent to existing or future residences and in close proximity to Meadow View Elementary School. Given the close proximity of sensitive receptors to construction activities and that proposed activities include grading and site preparation on steep slopes that involve soil cut, export and off-hauling, emission levels may be occasionally be elevated. As such, Required Measure AQ-3

should also be implemented, which recommends enhanced construction emission reduction measures recommended by the current BAAQMD *CEQA Air Quality Guidelines*.

Implementation of Required Measures AQ-1 through AQ-3, along with the mitigation measures identified in the 2000 FEIR would be assure that the project's impacts to health and nearby sensitive receptors would remain less than significant. Thus, the proposed project would not result in a new or substantially more severe health impact on existing residences than was previously evaluated in the 2000 FEIR.

Health Impacts on Proposed Project Residences

The BAAQMD's *CEQA Air Quality Guidelines* also include standards and methods for determining the significance of cumulative health risk impacts. The method for determining cumulative health risk requires the tallying of health risks from permitted stationary sources, major roadways and any other identified substantial TAC sources in the vicinity of a project site (i.e., within a 1,000-foot radius) and then adding the individual sources to determine whether the BAAQMD's cumulative health risk thresholds are exceeded.

At operation, the proposed residential development would not generate substantial air quality emissions that would affect sensitive receptors in the vicinity of the project site. As a residential land use, air quality emissions generated by the proposed project would be minimal and similar in scale to the surrounding existing uses. Secondly, the proposed project would not locate sensitive receptors within 1,000 feet of existing permitted stationary sources or major roadways such as US 101 as well as rail activities.[9] Therefore, health impacts due to excessive pollutant concentrations would be less than significant. Thus, the proposed project would not result in a new or substantially more severe health impact on proposed residences than was previously evaluated in the 2000 FEIR.

Odors. According to current BAAQMD's *CEQA Air Quality Guidelines*, odor impacts could result from siting a new odor source near existing sensitive receptors or siting a new sensitive receptor near an existing odor source. Though offensive odors rarely cause any physical harm, they still remain unpleasant and can lead to public distress and citizen complaints. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, as well as wind speed and direction, and the sensitivity of receptors.

[9] In June of 2010, the Air District's adopted thresholds of significance were challenged in a lawsuit (California Building Industry Association v Bay Area Air Quality Management District). On December 15, 2015, the California Supreme Court (S213478) concluded that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. The Supreme Court also indicated that nothing in CEQA prevents local agencies from considering the impact of locating new development in areas subject to existing environmental hazards. However, the Court of Appeal explained CEQA cannot be used by a lead agency to require a developer or other agency to obtain an EIR or implement mitigation measures solely because the occupants or users of a new project would be subjected to the levels of emissions specified, an agency may do so voluntarily on its own project and may use the BAAQMD guidance. Therefore, an analysis of the health impacts from existing sources on the proposed receptors is presented within this document.

The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the proposed project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people, or to persist for a substantial length of time. Therefore, odor impacts associated with the proposed project on existing sensitive receptors would be less than significant.

Odor impacts could also result from siting a new sensitive receptor near an existing odor source. Examples of land uses that have the potential to generate considerable odors include, but are not limited to wastewater treatment plants, landfills, refineries, and chemical plants. In the current BAAQMD *CEQA Air Quality Guidelines*, odor screening distances are recommended for a variety of land uses. Projects that would site a new receptor farther than the applicable screening distance from an existing odor source would not likely result in a significant odor impact. The odor screening distances are not used as absolute screening criteria, rather as information to consider along with the odor parameters and complaint history. The odor screening distances for a sewage treatment plant, refinery, and chemical plant are two miles. The proposed project is not within the odor screening distances for a sewage treatment plant, refinery, or other odor producing sources.

For all of the preceding considerations, the proposed project would not result in a new or substantially more severe odor impact than was previously evaluated in the 2000 FEIR.

Mitigation Measures

1994/2000 FEIR Mitigation Measures.

The 2000 FEIR identified three mitigation measure to reduce identified air quality impacts. 2000 FEIR Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 would continue to apply to the proposed Project. These measures are reproduced below.

1994/2000 FEIR Mitigation Measure 3.2.4-1: Each project proponent is responsible for ensuring that the contractor reduces particulate, ROG, NO_x, and CO emissions by complying with the air pollution control strategies developed by the BAAQMD. The developer shall include in construction contracts the following requirements:

a) The contractor shall water on a continuous as–needed basis all earth surfaces during clearing, grading, earthmoving, and other site preparation activities.

b) The contractor shall use tarpaulins or other effective covers for haul trucks that travel on public streets.

c) The contractor shall sweep streets adjacent to the project at the end of the day.

d) The contractor shall schedule clearing, grading, and earthmoving activities during periods of low wind speeds and restrict those construction activities during high wind conditions with wind speeds greater than 20 mph average during an hour.

e) The contractor shall control construction and site vehicle speed to 15 mph on unpaved roads.

f) The contractor shall minimize open burning of wood/vegetative waste materials from both construction and operation of the project. No open burning shall occur unless it can be demonstrated to the BAAQMD that alternatives have been explored. These alternatives may include, but are not limited to, chipping, mulching, and conversion to biomass fuel. For any open burning, a BAAQMD permit must be obtained and done in conformance with BAAQMD regulations.

1994/2000 FEIR Mitigation Measure 3.2.4-3: Each developer is responsible prior to Final Map approval for developing tree planting programs, improving the thermal integrity of buildings, and reducing the thermal load with automated time clocks or occupant sensors, and landscaping with native drought-resistant species to reduce water consumption and to provide passive solar benefits. Developers shall only install gas-burning (or any other clean fuel burning) fireplaces in new Southwest Area Plan residential dwellings. New fireplaces for existing residential dwellings in the Southwest Area shall only be gas-burning (or any other clean fuel burning) fireplaces.

1994/2000 FEIR Mitigation Measure 3.2.4-4: The potential air quality impacts from toxic air emissions from construction equipment and operations will be reduced with compliance with the BAAQMD air pollution control strategies. Construction firms shall be contracted to post signs of possible health risk during construction. The developer is responsible for compliance with the BAAQMD rule regarding cutback and emulsified asphalt paving materials.

Additional Measures Required by Current Guidelines and Regulations.

Additional measures that are required to be implemented as part of the proposed project pursuant to the BAAQMD CEQA Guidelines and the City of Santa Rosa's project review and building permit process are as follows:

Required Measure AQ-1 - Air Quality Dust Control: All construction projects are required to comply with the BAAQMD's dust control measures. These measures are levied by the Engineering Division as a condition of building permit issuance and are monitored for compliance by staff and/or special City Engineering and/or Planning inspectors. The measures include all the *Basic Fugitive Dust Emissions Reduction Measures* and some of the *Additional Fugitive Dust Emissions Reduction Measures* identified by the BAAQMD. The BAAQMD requires projects to:

a) Water all active construction sites at least twice daily.

b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.

c) Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.

d) Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.

e) Sweep streets daily (with wet power vacuum sweepers) if visible soil material is carried onto adjacent public streets at least once per day. The use of dry power sweeping is prohibited.

f) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

g) Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiled materials.

h) Install sandbags or other erosion-control measures to prevent silt runoff to public roadways.

i) Replant vegetation in disturbed areas as quickly as possible.

j) Watering should be used to control dust generation during the break-up of pavement.

k) Cover all trucks hauling demolition debris from the site.

l) Use dust-proof chutes to load debris into trucks whenever feasible.

m) Water or cover stockpiles of debris, soil, sand or other materials that can be blown by the wind.

Required Measure AQ-2 - Air Quality Combustion Exhaust Control: All construction projects are required to comply with the BAAQMD's combustion exhaust control measures. The measures include *Basic Exhaust Emissions Reduction Measures* and some of the *Enhanced Exhaust Emissions Reduction Measures* identified by the BAAQMD. The BAAQMD requires projects to:

n) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be in proper running order prior to operation.

o) Use alternative fueled construction equipment, if possible.

p) All vehicle speeds on unpaved roads shall be limited to 15 mph.

q) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

r) Diesel powered equipment shall not be left inactive and idling for more than five minutes, and shall comply with applicable BAAQMD rules.

s) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five (5) minutes (as required by the California airborne toxics control measure Title 13, Section 2484 of the California Code of regulations). Clear signage shall be provided for construction workers at all access points.

t) Post a visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 24 hours. The Air District phone number shall also be visible to ensure compliance with applicable regulations.

u) All off-road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

1. Where access to alternative sources of power are available, portable diesel engines shall be prohibited; and
2. All off-road equipment shall have:
    a. Engines that meet or exceed either Tier 3 off-road emission standards, and
    b. Engines that are retrofitted with a Level 2 Verified Diesel Emissions Control Strategy. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such are available.

Required Measure AQ-3 – Architectural Coating Emissions: *BAAQMD Regulation 8, Rule 3 for Architectural Coatings.* Emissions of volatile organic compounds (VOC) due to the use of architectural coatings are regulated by the limits contained in Regulation 8: Organic Compounds, Rule 3: Architectural Coatings (Rule 8-3). Rule 8-3 was revised on January 1, 2011 to include more stringent VOC limit requirements. The revised VOC architectural coating limits specify that the use paints and solvents with a VOC content of 100 grams per liter or less for interior and 150 grams per liter or less for exterior surfaces shall be required.

Conclusion

The proposed project would be comparable (in size and land use type) to the project evaluated in the 1994/2000 FEIRs, and would not include any features or components that would alter the conclusions of the previous environmental analysis. Implementation of the proposed project would not result in any new or substantially more severe impacts on air quality than those previously evaluated. Mitigation measures identified in the 1994/2000 FEORs, along with new BAAQMD-required measures would continue to reduce project impacts to a less-than-significant level.

3.3 Greenhouse Gases

Introduction

Information in this section is based on the Dutton Meadows Air Quality and Greenhouse Gas Emissions Technical Report (RCH Group, 2018). The Air Quality and Greenhouse Gas Emissions Technical Report provides an overview of the greenhouse gas regulatory framework, and an analysis of potential greenhouse gas impacts (including assumptions and methodology) that would result from implementation of the proposed project. The results of the RCH Group's analyses are summarized herein; the complete analysis is presented in Appendix A of this Addendum.

Previous Analyses and Findings

The 1994/2000 FEIRs and the 2005 SEIR did not address greenhouse gas (GHG) emissions as these issues were not contained within Appendix G of the *CEQA Guidelines* or the Bay Area Air Quality Management District (BAAQMD)'s *Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plan* (dated November 1985) which was applicable at the time. As such, that FEIR did not quantify and compare the GHG emissions to significance thresholds. The current Appendix G of the *CEQA Guidelines* addresses GHG emissions and BAAQMD's *CEQA Air Quality Guidelines* (dated June 2010, updated in May 2011, and revised in May 2012 and updated in May 2017)[10] does contain significance thresholds for GHG emissions. Therefore, as part of this Addendum, the estimated GHG emissions associated with the proposed project were compared to the current thresholds of significance for operational GHG emissions to determine potential impacts.

The 2010 FEIR did not address compliance with applicable climate action plans, policies, and regulation adopted for the purpose of reducing the emissions of GHG as California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599) did not exist and the Santa Rosa Climate Action Plan had not been published. Secondly, at the time, GHG issues were not contained within Appendix G of the CEQA Guidelines and did not contain the requirement to address compliance with GHG reduction plans, policies, and regulations. Therefore, as part of this Addendum, the proposed project's consistency with plans, policies, and regulations for reduction of GHG has been addressed to determine potential impacts.

2018 Greenhouse Gas Analysis

Greenhouse Gas Emissions. The current BAAQMD's *CEQA Air Quality Guidelines* has

[10] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

established separate thresholds of significance for operational GHG emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). The threshold for stationary sources is 10,000 metric tons of carbon dioxide-equivalents (CO_2e)[11] per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO_2e per year; known as a bright-line threshold (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO_2e per service population per year; known as an efficiency threshold (i.e., emissions above this level may be considered significant). Service population is the sum of residents/students/employees expected for a development project.

For quantifying a project's GHG emissions, BAAQMD currently recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from onsite combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced offsite from energy production and water conveyance due to a project's energy use and water consumption.

California Air Resources Board's (CARB) California Emission Estimator Model (CalEEMod, Version 2016.3.2)[12] was used to quantify GHG emissions associated with proposed project construction activities, as well as long-term operational emissions produced by motor vehicles, natural gas combustion for space and water heating, electricity use, and landscape maintenance equipment.

CalEEMod is a land-use emissions model that estimates construction emissions from demolition and construction activities and operations. CalEEMod is the latest emission model and reflects CARB's current understanding of emission factors and calculation methodologies and how emissions have changed over time and are projected to change in the future.

The proposed project's estimated construction and operational GHG emissions are presented in Table 3.3-1. The estimated construction GHG emissions are 678 metric tons of CO_2e in 2019 and 485 metric tons of CO_2e in 2020. As indicated, 30-year amortized annual construction related GHG emissions would be 38.8 metric tons of CO_2e. There is no BAAQMD CEQA significance threshold for construction-related GHG emissions. The GHG construction and operational emissions would be 1,409 metric tons per year, which

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

[12] California Air Resources Board, *California Emissions Estimator Model User's Guide*, November 9, 2017, http://www.caleemod.com/

is above the BAAQMD bright line threshold of 1,100 metric tons. The GHG construction and operational emissions would be 3.9 metric tons per service population (approximately 360 residents) per year, which is below the BAAQMD efficiency threshold of 4.6 metric tons per service population. A project is less than significant if the GHG emissions are less than either the bright line threshold or the efficiency threshold. Thus, the proposed project impacts on climate change would be less than significant. Project design elements such as Title 24 and Cal Green compliant results in an approximately 18 percent reduction in GHG emissions.

Table 3.3-1: Estimated Greenhouse Gas Emissions

Operations	
Area Sources	1.57
Energy	278
Mobile	998
Solid Waste	76.2
Water	15.9
Total Construction and Operational Emissions	**1,409**
BAAQMD Bright line Threshold	1,100
Potentially Significant?	Yes
Total Construction and Operational Emissions (Service Population)	3.9
BAAQMD Efficiency Threshold	4.6
Potentially Significant?	No

SOURCE: California Air Resources Board CalEEMod Version 2016.3.2

Note: These emissions estimates were based on an earlier site plan with 4% fewer units; the estimates are valid for the current site plan because the change in units is well within the range of error of the model, and because the emissions increase with the additional 8 units would clearly be well below any significance thresholds.

Although the 2000 FEIR was not required to address GHG emissions, the proposed project would have a less than significant impact on GHG emissions on that project given the current requirements and current emission estimation models. Therefore, the proposed project would not result in new or substantially more severe impact on GHG emissions than was previously evaluated in the Final EIR.

Greenhouse Gas Regulatory Compliance Analysis. California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies

that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020. In September of 2016, AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

The City of Santa Rosa adopted the Climate Action Plan in 2012.[13] The Climate Action Plan will be a roadmap for how the County will reduce energy consumption and GHG emissions to meet State GHG emissions targets (AB 32). The principal State plan and policy adopted for the purpose of reducing GHG emissions is AB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. Statewide plans and regulations such as GHG emissions standards for vehicles and the low carbon fuel standard are being implemented at the statewide level, and compliance at the specific plan or project level is not addressed. The assumption is that AB 32 will be successful in reducing GHG emissions and reducing the cumulative GHG emissions statewide by 2020. The State has taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG. Therefore, the proposed project would result in a significant impact if it would be in conflict with AB 32 State goals. The proposed project has been reviewed relative to the AB 32 measures and it has been determined that the proposed project would not conflict with the goals of AB 32.

Conclusion

Although project-generated GHGs were not previously addressed, studies prepared for this Addendum, described above, concluded that implementation of the proposed project would not result in any significant impacts on GHG emissions, or the ability to comply with AB 32 and other Statewide goals for GHG reduction.

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[13] City of Santa Rosa. *Climate Action Plan*, June 5, 2012, https://srcity.org/1634/Climate-Action-Planning

3.4 Noise

Introduction

Information in this section is based on the Dutton Meadows Noise Technical Report (RCH Group, 2018). The Noise Technical Report provides an overview of the existing noise conditions at the proposed project site, the noise regulatory framework, and an analysis of potential noise impacts (including assumptions and methodology) that would result from implementation of the proposed project. The results of the RCH Group's analyses are summarized herein; the noise measurement data is presented in Appendix B of this Addendum.

Previous Analyses and Findings

The *Southwest Area Projects Initial Study* concluded that there were no significant effects on noise that were not previously evaluated in the Master, Redevelopment, or General Plan EIRs. The Southwest Santa Rosa Area Plan and Master EIR (State Clearinghouse Number 92083076) were certified on June 21, 1994. Along with the Area Plan, the 35 project proposals are evaluated in the Master EIR. One noise impact was identified as a significant, unavoidable adverse impacts from buildout of the Area Plan identified by the Master EIR.

Impact 3.2.5-3: Development of the Area Plan and its infrastructure improvements, in conjunction with cumulative traffic, could result in increased traffic noise impacts on existing Area Plan land uses.

Impact 3.2.5-3 was addressed in the Statement of Overriding Considerations for the *Southwest Area Projects Subsequent EIR* (SCH #2004062031). No feasible mitigation measures exist to eliminate this significant and unavoidable impact.

2018 Noise Analysis

Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human

activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[14]; average day–night 24-hour average sound level (Ldn)[15] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[16], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Regulatory Framework

State Guidelines. State Land Use Compatibility Standards for Community Noise are provided in the State of California General Plan Guidelines (Table 3.4-1). The guidelines indicate that a Community Noise Exposure up to 60 dB (Ldn or CNEL) is Normally Acceptable for Single Family Residential, and a Community Noise Exposure up to 70 dB (Ldn or CNEL) is Conditionally Acceptable (OPR 2003).

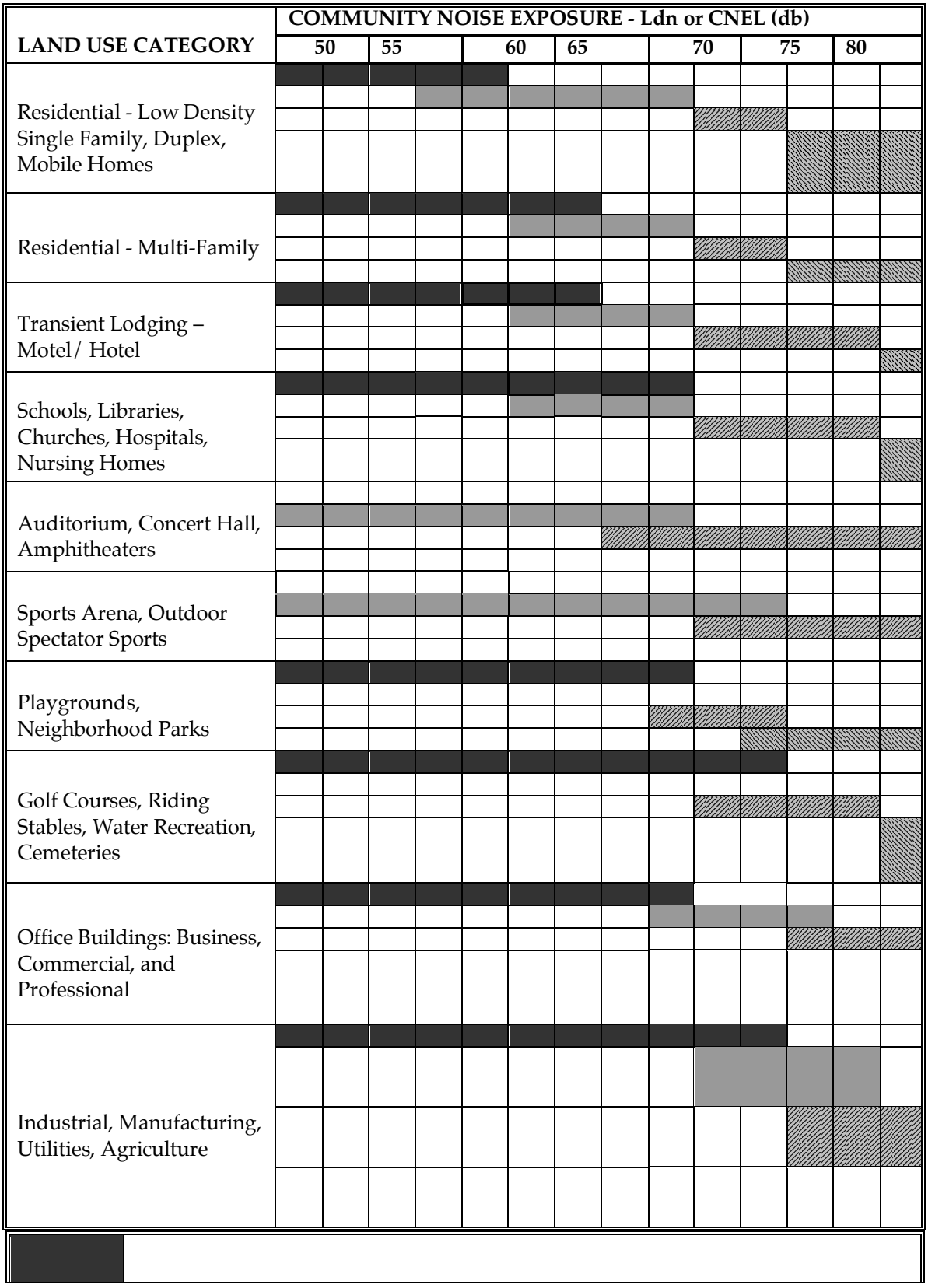
Santa Rosa General Plan. The Noise and Safety Element of the Santa Rosa General Plan states that the noise standards used by the City of Santa Rosa include: the Land Use Compatibility Standards for Community Noise Environment (which are consistent with the State Guidelines, above), State of California Noise Insulation Standards (which the project will be required to comply with), and applicable standards in the City of Santa Rosa Noise Ordinance (see below).

Santa Rosa Noise Ordinance. Santa Rosa Municipal Code Section 17-16.120 establishes ambient base noise level criteria for various land uses. For single-family residential zones, the following criteria are the base noise levels for comparison: 55 dB for 7:00 a.m. to 7:00 p.m., 50 dB for 7:00 p.m. to 10:00 p.m., and 45 dB for 10:00 p.m. to 7:00 a.m. Section 17-16.030 states that "it is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus or similar mechanical device in any manner so as to create any noise, which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five decibels."

South Santa Rosa Area Plan. The Plan states that development shall comply with the standards and policies of the General Plan Noise Element (see Santa Rosa General Plan, above). Standard City conditions of project approval limit the hours of construction to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction is permitted on Sundays and holidays.

[14]The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.
[15]Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.
[16]CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Table 3.4-1: Land Use Compatibility for Community Noise Environment



	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: California Governor's Office of Planning and Research, 2003

Operational noise impacts of the residential development would be significant if they result in exceedance of noise standards contained in the Santa Rosa Noise Ordinance, or exceedance of vibration thresholds recommended by the Federal Transit Administration (FTA 2006), at nearby residential land uses. Operation of the development would also result in a significant impact if it would result in a significant increase in cumulative noise exposure (generally from increased traffic noise). Increases in cumulative noise exposure (in CNEL/Ldn) of 5 dBA are generally considered significant in areas where the ambient noise environment is less than 60 dBA. In areas where the ambient noise environment is between 60 and 65 dBA, increases of 3.0 dBA, or greater, would be considered significant. In areas where the ambient noise environment exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant.

Existing Noise Sources and Levels

To quantify existing ambient noise levels in the immediate project vicinity, RCH conducted short-term (10-minute) measurements at five locations and long-term (72-hour) measurements at two locations at the project site. The noise measurements are summarized in Table 3.4-2 below. The Noise Appendix includes noise plots of the long-term data and a figure showing noise measurement locations. Noise measurement locations were selected to measure existing noise levels at nearby receptors that would be affected by future noise from the project, and to capture existing noise levels that would affect the proposed residences.

The dominant sources of noise during the measurements were traffic from Hearn Avenue and Dutton Meadow. The 24-hour noise levels (CNELs) were 51-52 dB near the center of the site (Site 1) and were 53-56 dB in the northeast area of the site (Site 2).

Existing Sensitive Receptors

According to the Santa Rosa General Plan, sensitive land uses include residences, schools, playgrounds, child care centers, hospitals, retirement homes, and convalescent homes. The nearest sensitive receptors to the project site include: residences on Aloise Avenue (directly adjacent to the project site, on the northern side), Meadow View Elementary School (to the west, with classrooms as close as 90 feet from project construction areas), residences on Hearn Avenue (on the north side of the street, as close as 80 feet from project construction areas), and residences on Pebblecreek Drive (to the southwest of the site, as close as 100 feet from project construction areas).

Table 3.4-2: Existing Noise Measurements

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Wednesday March 7, 2018 11:37-11:47 a.m.	5-minute Leq's: 50, 49	Siren was 55 dB. Airplane was 53 dB. Wind was 52 dB. Traffic was up to 50 dB. Back-up beep was 50 dB. Background noise was 47 dB. Quieter sounds included birds.
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Thursday March 8, 12:00 a.m. through Saturday March 10, 11:59 p.m., 2018 48-hour measurement	Hourly Leq's ranged from: 42-51 CNELs: 52, 52, 51	Unattended noise measurements do not specifically identify noise sources.
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Monday March 12, 2018 10:42-10:52 a.m.	5-minute Leq's: 42, 42	Garbage truck was 44 dB. Traffic was up to 43 dB. Birds were up to 43 dB. Car horn was 42 dB. Background noise was <41.5 dB.

Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 12:08-12:18 p.m.	5-minute Leq's: 51, 53	Traffic on Hearn Ave was up to 60 dB. Motorcycle on Hearn Ave was 56 dB. Airplane was 56 dB. Dog barking was 52 dB. Background noise was 47 dB. Quieter noises included birds, wind, and voices.
Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Thursday March 8, 12:00 a.m. through Saturday March 10, 11:59 p.m., 2018 48-hour measurement	Hourly Leq's ranged from: 43-53 CNELs: 55, 56, 53	Unattended noise measurements do not specifically identify noise sources.
Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:09-11:19 a.m.	5-minute Leq's: 49, 48	Cement truck on Hearn Ave was 57 dB. Birds were up to 56 dB. Trucks on Hearn Ave were 51-55 dB. Traffic on Hearn Ave was 46-51 dB. Background noise was <41.5 dB. Quieter noises included voices of neighbors.
Site 3. End of Sally Ann Street, approximately 230 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 1:02-1:12 p.m.	5-minute Leq's: 52, 51	Traffic on Hearn Ave was up to 62 dB. Bus was 58 dB. Background noise was 42 dB. Quieter noises included pedestrians, wind chimes, airplanes, and a car on Sally Ann St.
Site 3. End of Sally Ann Street, approximately 230 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:39-11:49 a.m.	5-minute Leq's: 52, 51	Loud car on Hearn Ave was 61 dB. Car on Sally Ann St was 61 dB. Traffic on Hearn was 47-60 dB. Airplane was 44 dB. Yard equipment was 42 dB. Background noise was <41.5 dB. Quieter noises included birds, voices, and a car idling.

Site 4. East end of Aloise Avenue, approximately 250 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 1:20-1:30 p.m.	5-minute Leq's: 46, 47	Motorcycle on Hearn Ave was 54 dB. Car door slam on Aloise Ave was 54 dB. Cars on Aloise Ave were up to 52 dB. Garage door opening was 51 dB. Honking was 51 dB. Voices were 49 dB. Traffic on Hearn Ave was up to 45 dB. Background noise was <41.5 dB. Quieter noises included back-up beeps, wind chimes, distant traffic, and birds.
Site 4. East end of Aloise Avenue, approximately 250 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:56 a.m.-12:06 p.m.	5-minute Leq's: 52, 51	Airplane was up to 62 dB. Dog barking was 60 dB. Loud car on Hearn Ave was 55 dB. Lawn mower was 51 dB. Traffic was up to 46 dB. Background noise was 43 dB. Quieter noises included wind chimes, back-up beeps, voices, and birds.
Site 5. West side of site, approximately 70 feet from the centerline of Dutton Meadow	Wednesday March 7, 2018 1:49-1:59 p.m.	5-minute Leq's: 56, 56	Traffic on Dutton Meadow was 54-69 dB. Truck was 69 dB. Bus was 63 dB. Whistle at school was 59 dB. Children were 48 dB. Background noise was 43 dB. Quieter noises included doves, wind, and an airplane.
Site 5. West side of site, approximately 70 feet from the centerline of Dutton Meadow	Monday March 12, 2018 1:38-1:48 p.m.	5-minute Leq's: 54, 52	Traffic on Dutton Meadow was 53-60 dB. Truck on Dutton Meadow was 60 dB. Car horn was 53 dB. Background noise was 45 dB. Quieter noises included distant traffic, birds, and children at the school.

Source: RCH Group, 2018

Noise Impact Analysis

Noise impacts of the project could be associated with noise from construction of the residences, the effect of existing traffic noise on future residents, or long-term operational noise generated by the residences.

Construction Noise. Then noise technical report was prepared for the project with an earlier housing unit count of 201 total units. While the updated project unit count is now 211 total units, the conclusions from the Noise Technical Report would not change. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., backhoes, bulldozers, excavators, front loaders, etc.) and other construction equipment (e.g., compactors, scrapers, graders, etc.). Construction worker traffic and construction-related material haul trips would raise ambient noise levels along local haul routes, depending on the number of haul trips made and types of vehicles used. Construction activities and associated traffic would occur primarily during the daytime.

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. As shown in Table 3.4-3, maximum noise levels generated by various types of construction equipment can range from 76 to 89 dB at 50 feet. Table 3.4-4 gives average noise levels associated with construction activities at a distance of 50 feet, and shows that the highest levels typically occur during ground excavation and finishing (88 dB Leq).

The closest noise-sensitive land uses are less than 50 feet from the proposed project construction area, and could result in even higher noise levels. However, this noise would be intermittent and temporary. Implementation of Mitigation Measures 3.2.5-1 (a) thru (c) would reduce impacts of construction noise to less than significant.

Table 3.4-3: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Dump Truck	76
Air Compressor	78
Concrete Mixer (Truck)	79
Jackhammers	89
Scraper	84
Dozer	82
Paver	77
Generator	81

Auger Drill Rig	84
Front End Loader	79
Grader	85
Backhoe	78

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006

Table 3.4-4: Typical Construction Activities Noise Levels

Construction Phase	Noise Level (dB Leq at 50 feet)
Ground Clearing	83
Excavation	88
Foundations	81
Erection	81
Finishing	88

Notes: Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Leq = equivalent sound level
Source: U.S. Environmental Protection Agency, Legal Compilation, 1973

Construction Vibration. The project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration (i.e., pile drivers that could be above 0.5 ppv). The closest structures to the project site are as close as 25 feet from the proposed construction area. Vibration levels from vibratory rollers, bulldozers, loaded trucks, and jackhammers at a distance of 25 feet would not exceed the 0.5 ppv threshold for residential and commercial structures. It is assumed that pile drives would not be used for construction of the project. Vibration impacts from construction would be less than significant.

Traffic Noise. Based on observations, existing environmental noise (primarily from traffic) is minimal. The project would include residence backyards, but given the measurements discussed above, noise levels at these outdoor activity areas would not exceed the State Guidelines standard of 60 dB for residential areas. Cumulative noise from the 2018 project would not be substantially greater than identified in the 1994/2000 FEIRs. The mitigation measures for that impact were determined to be infeasible and the impact of cumulative traffic noise on existing land uses was determined to be significant and unavoidable. The 2018 project also would implement Mitigation 5-1 from 2004 Dutton Meadows SEIR Initial Study, which would reduce the impact on indoor noise levels.

Operational Noise. Operational noise includes any long-term noise generated by the

residences that would impact surrounding land uses. In general, residences are one of the quietest land uses (other than open space), and noise from the residences would be considered compatible with the surrounding residences. Any permanent increase in ambient noise levels in the project vicinity would not be substantially greater than existing levels without the project and would result in a less-than-significant noise increase.

The primary source of operational noise from the project would be new vehicle trips from project residents. Project-generated traffic noise would not increase noise levels by more than 1 dB along roadway segments in the project area. Persons would not be exposed to noise level increases in excess of applicable standards. The noise impact would be less than significant.

Mitigation Measures

1994/2000 FEIR Mitigation Measures.

The 1994/2000 EIRs included the following impacts that would be implemented for the revised Dutton Meadows project. These mitigation measures also were identified in the Initial Study in the 2005 SEIR[17].

> **Mitigation Measure 3.2.5-1 (a)** To minimize construction noise impacts of nearby residents, limit construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on weekends for projects within 1,600 feet of inhabited dwelling units(s). Any work outside of these hours shall require a special permit from the City of Santa Rosa. There shall be compelling reasons for permitting construction outside of the designated hours.
>
> **Mitigation Measure 3.2.5-1 (b)** Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise.
>
> **Mitigation Measure 3.2.5-1 (c)** Contractor shall locate stationary noise sources away from residents and developed areas, and require use of acoustic shielding with such equipment when feasible and appropriate.
>
> **Mitigation Measure 3.2.5-2** Project developers shall propose noise mitigation consistent with General Plan Noise and Area Plan Community Design Policies to reduce year 2010 exterior noise levels on proposed residential and school land uses to 60 Ldn or below, on proposed playgrounds and neighborhood park land uses to 70 Ldn or below, and on proposed office buildings and commercial areas to 65 Ldn or below.

[17] Note: As identified above, project traffic noise impacts were determined to be significant and unavoidable, as the Mitigation Measures 3.2.5-3 (a-d) were not determined to be feasible. This 2018 project would not have off-site traffic noise impacts greater than 1 dB, Ldn, so Mitigation Measures 3.2.5-3 (a) thru (d) would not be required even if the measures were feasible.

The following mitigation measure was also included in the 2005 *Dutton Meadows Project Initial Study* (included in the 2005 Supplemental EIR) to further reduce potential noise impacts.

> **Mitigation 5-1 from Initial Study**. Future Indoor Noise Environment. To maintain a habitable interior noise environment, units exposed to noise levels greater than 60 dBA Ldn shall be provided with forced-air mechanical ventilation to adequately ventilate the interior spaces of the units.

Conclusions

No new potentially significant noise impacts have been identified on the site. The 1994/2000 and 2005 EIR mitigation measures would continue to reduce noise impacts of the project to a less-than-significant level. Increased noise levels associated with development of the Area Plan and its infrastructure improvements, in conjunction with cumulative traffic were identified as significant and unavoidable in the Dutton Meadows Project SEIR (Impact 3.2.5-3). As described in the overriding conditions for the approval of the Plan, no feasible mitigation measures exist to eliminate this significant and unavoidable impact.

3.5 Cultural Resources

Introduction

Historic and archaeological resources were previously addressed in Section 3.5 of the 2005 SEIR. Updated archaeological resources information in this section is based on the Cultural Resources Evaluation of the Properties Located At 2666 and 2684 Dutton Meadows and 1112 and 1200 Hearn Avenue, Santa Rosa (Archaeological Research Service, June 11, 2018). The historic building assessment in this Addendum is based on the Cultural Resources Evaluation of the Minoia Property Located at 1112 And 1200 Hearn Avenue, Santa Rosa, Sonoma County, November 26, 2003. These documents are included in Appendix C of this Addendum.

Previous Analyses and Findings

The 2005 SEIR found no significant cultural resources (archaeological or historic) on the property. That EIR included the following (summarized0 mitigation measures (with slight updates/corrections in brackets) to assure that impacts associated with any unanticipated cultural resources that could potentially be encountered during construction would be reduced to a less-than-significant level:

> **Mitigation 3.5.9-1a.** A qualified archaeologist will monitor excavation and other ground-disturbing activities as necessary on the Project site. In the event that any remains of prehistoric or historic human activities, features (such as culturally modified soil deposits), or artifacts are encountered during Project-related activities, work in the immediate vicinity of the find shall halt and the contractor shall immediately notify the Project Superintendent and the City of Santa Rosa liaison.
>
> If field reconnaissance or construction monitoring result in the identification of archaeological deposits and a qualified professional determines that the deposits meet the criteria for listing in the California Register and are therefore determined to be significant deposits, options for avoidance or minimization of impacts to the sites would include the following:
>
> 1. Modify development plans to allow for the preservation of the archaeological site or sites.
>
> 2. Cover or "cap" the site with a layer of protective fill. The project owner should deed a conservation easement for the area containing the site, plus a suitable buffer area, to ensure that subsequent activities do not damage the site.
>
> 3. If prehistoric archaeological deposits discovered before or during construction are determined significant and cannot be capped and avoided, the designated cultural resources specialist shall recommend a plan of action that may include a program of scientific excavation or other scientific investigation to recover data

within the context of a detailed and approved research design that recognizes and addresses the information value of the site for the study of history or prehistory.

4. In the event of discovery of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overly adjacent remains and the construction superintendent shall notify the County Coroner. If the Coroner recognizes the human remains as those of a Native American, he or she will contact, by telephone, the Native American heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendant, who will contact the Project owner to consult regarding the disposition of the remains.

Mitigation 3.5.9-1b. The public improvement and grading plans shall include the monitoring plan requirements.

2018 Cultural Resources Analysis

The 2018 Cultural Resources Evaluation (Archaeological Research Service, June 11, 2018) did not encounter any cultural resources on the project site, consistent with the earlier evaluations. Recommendations in that report are consistent with Mitigation Measures 3.5.9-1a and b, above. Similarly, the 2003 Cultural Resources Evaluation found no National Register historic resources on the site. Therefore, no new or more significant impacts are anticipated as a result of the currently proposed project.

Conclusions

No new potentially significant cultural resources have been identified on the site. 2005 SEIR mitigation measures would continue to reduce impacts of the project to a less-than-significant level.

3.6 Vegetation, Wildlife, and Habitat

Introduction

On-site vegetation, wildlife, and habitat issues were addressed in Section 3.6, Vegetation, Wildlife, and Habitat, of the 2005 SEIR. An updated, project-site-specific Biological Resources Analysis has been prepared for the 18.68-acre project site (Biological Resources Analysis, Dutton Meadows Trumark Homes Project, City of Santa Rosa, California, APNs: 043-071-007, 022, 023, 043-91-024, 016, August 14, 2018). This document is included in Appendix D of this Addendum.

On-site trees also were addressed in Section 3.6, Vegetation, Wildlife, and Habitat of the 2005 SEIR. For ease of reference, they are broken out as a separate section in this Addendum. An updated arborist's report has been prepared for the project site (Horticultural Associates, Tree Preservation and Mitigation Report, Dutton Meadows, Santa Rosa, CA., June 5, 2018). This document is included in Appendix E of this Addendum.

Previous Analyses and Findings

In January 2005, the City of Santa Rosa adopted a Draft Supplemental EIR (SEIR) that tiered from the Master EIR, Redevelopment EIR, and General Plan EIR (City of Santa Rosa 2005). The SEIR addressed potential impacts at both the project and programmatic level of review. The SEIR assessed biological impacts from development of the Specific Plan Area including the proposed project under review herein. A Biological Assessment for the Dutton Meadow Development Project was prepared by Olberding Environmental, Inc. and Laurence P. Stromberg, Ph.D. (dated June 11, 2002) and was incorporated into the findings presented in the SEIR.

The 2005 SEIR found that the project would have a number of impacts to biological resources, and recommended mitigation measures, as summarized below (full text is included in the 2005 SEIR):

Impact 3.6-1. the project would eliminate a number of mature valley oaks and other native trees.

> **Mitigation Measure 3.6-1a.** Replace trees in accordance with City Code Chapter 17-24-Trees. Based on the replacement ratio in effect at this time, a total of 190 mitigation replacement trees are required for the Phase 1 Project component.
>
> **Mitigation Measure 3.6-lb.** Use tree preservation notes on all improvement, grading and building plans.
>
> **Mitigation Measure 3.6-lc.** Require application of Best Management Practices during construction.

Impact 3.6-2. Implementation of the Project would result in loss of wetland habitat.

Mitigation Measure 3.6-2a. Avoid or minimize impacts to wetland resources.

Mitigation Measure 3.6-2b. Preserve and create new wetland habitat offsite.

Mitigation Measure 3.6-2c. Transfer mitigation responsibilities to new property Owners.

Mitigation Measure 3.6-2d. Obtain appropriate permits for filling of wetlands.

Impact 3.6-3. Implementation of the Project would result in loss of California tiger salamander over-summering habitat

Mitigation Measure 3.6-2b and 3.6-2c summarized above would apply to this impact.

Mitigation Measure 3.6-3. Preserve/enhance California tiger salamander over-summering habitat.

Impact 3.6-4. Implementation of the Project would result in the loss of potential *California linderiella* habitat.

Mitigation Measure 3.6-2b and 3.6-2c, summarized above would apply to this impact. [18]

Impact 3.6-5. Implementation of the Project would result in the loss of raptor nesting habitat.

Mitigation Measure 3.6-1a and 3.6-1b, summarized above in the "Trees" section would apply to this impact.

Mitigation Measure 3.6-5. Provide protection of migratory birds

Impact 3.6-6. Implementation of the Project could result in the loss of special-status plant species and special status plant habitat.

Mitigation Measures 3.6-2b, 3.6-2c, and 3.6-3, summarized above, would apply to this impact.

Mitigation Measure 3.6-6. Complete special status plant species pre-construction surveys and plant salvage.

Impact 3.6-7. Implementation of the Project would result in indirect impacts to

[18] While this species was considered to be a special-status invertebrate in 2005, it is no longer a special-status species that meets CEQA significance criteria. Thus, impacts to this species would not be regarded as potentially significant nor would mitigation be warranted.

California tiger salamander.

Mitigation Measures 3.6-3, summarized above, would apply to this impact.

Impact 3.6-8. Project construction activities could result in impacts to California tiger salamander.

Mitigation Measure 3.6-8a. Perform onsite monitoring during construction.

Mitigation Measure 3.6-8b. Protect California tiger salamander during construction.

Mitigation Measure 3.6-8c. Prepare a Biological Resources Mitigation Implementation Plan.

Impact 3.6-9. Project construction activities could result in impacts to western pond turtle.[19]

Mitigation Measures 3.6-8a and 3.6-8c, summarized above, would apply to this impact.

Mitigation Measure 3.6-9. Provide protection for western pond turtle during construction.

Impact 3.6-10. Project construction activities could result in impacts to nesting and migratory birds.

Mitigation Measure 3.6-5, summarized above, would apply to this impact.

Impact 3.6-11. Project construction activities could result in impacts to sensitive habitats.

Mitigation Measure 3.6-11a. Protect water quality during construction.

Mitigation Measure 3.6.11 -b. Implement NPDES Permit requirements.

Cumulative Impact 3.6-12. The Project, in combination with other development in Southwest Santa Rosa, would result in a significant toss of California tiger salamander habitat.

Mitigation Measure 3.6-12. Create California tiger salamander habitat outside of the Southwest Plan Area

Mitigation Measures 3.6-2b, 3.6-2c, 3.6-8a, 3.6-8b, 3.6-8c, summarized above, would apply to this impact.

Cumulative Impact 3.6-13. The Project, in combination with other development in Southwest Santa Rosa, could result in a substantial reduction in suitable California tiger salamander over-summering habitat.

Mitigation Measures 3.6-8a, 3.6-8b, 3.6-8c, summarized above, would apply to this impact.

[19] There is no Western Pond Turtle habitat on the project site. No potential impacts.

2018 Arborist's Analysis

The 2018 Arborist's report (Horticultural Associates, June 5, 2018) identified 64 trees with trunks over 4-inches in diameter on the site. Native species on the site include 25 valley oaks and 2 box elders. The remaining trees were non-native species to the project site. The arborist concluded that, given the development plans, it would not be possible to retain and protect any of the trees on the site. Loss of valley oaks and other native trees is a potentially significant impact. However, with implementation of Mitigation Measure 3.6-1, with minor clarifying revisions, below, potential impacts to oak trees and other native trees would be less than significant.

Revised Mitigation 3.6-1a: In the 2005 EIR, Mitigation Measure 3.6-la required replacement of trees in accordance the City Code Chapter 17-24-Trees (Redevelopment EIR Mitigation Measure 3.2.3-1c as modified below.) All trees impacted by the Project will be replaced in accordance with City Code Chapter 17-24- Trees. Required replacement includes that two 15-gallon trees will be planted for each 6 inches, or fraction thereof, of trunk diameter at breast height (DBH) of trees that are removed. Native trees shall be replaced with native tree species. Non-native trees may be replaced by either native or non-native tree -species. Trees will be replaced onsite where feasible, offsite when approved the Department of Parks and Recreation, or by payment of cash in-lieu of tree replacement, as allowed by City Code Chapter 17-24.

Prior to the issuance of a grading permit, a tree replacement plan shall be submitted to and approved by the Santa Rosa Department of Community Development. The plan shall indicate the number of trees to be removed and the number of replacement trees categorized as native or non-native trees. A graphic shall be prepared that clearly indicates the on-site location where replacement trees, by species, will be planted. In lieu of this mitigation, as approved by the Santa Rosa Department of Community Development Department, a cash payment can be used to compensate for tree impacts detailed in City Code Chapter 17-24. Such cash payments are used for other landscaping projects in the City.

2018 Biological Resources Assessment

Monk & Associates, Inc. (M&A) prepared a *Revised Biological Resource Analysis* for the proposed Project to provide a detailed, updated description of existing biological resources within the proposed development site and to identify significant or potentially significant impacts that could occur to sensitive biological resources from development of this project site and associated infrastructure. The M&A assessment included a site investigation, CNDDB database search, and examination of all known record locations for special-status species to determine if special-status species could occur on the project site or within a zone of influence. It also summarized protocol-level special-status plant surveys and surveys for California tiger salamander (CTS) conducted for the site in 2000-2003. The results of the M&A assessment are summarized below.

General Habitat

This project site is dominated by ruderal herbaceous habitat. Ruderal (weedy) communities are assemblages of plants that thrive in waste areas, intensively maintained urban and agrarian landscapes and other sites that have been disturbed by human activity. Ruderal herbaceous species are often associated where undesirable or competitive vegetation is frequently suppressed by mowing, disking, and/or spraying during the growing season.

There is a shallow 2-foot wide roadside ditch along Dutton Meadows. This ditch appears to only convey water during significant storm events, and there is evidence of water-stained leaves, matted vegetation, sediment deposits and surface soil cracks. This ditch was dominated by upland vegetation, such as slender wild oat, goose grass (*Galium aparine*), soft chess (*Bromus hordeaceus*), summer cottonweed (*Epilobium brachycarpum*), and bindweed. There are a few scattered wetland plant species growing in the ditch including common velvet grass (*Holcus lanatus*), Himalayan blackberry (*Rubus armeniacus*), and tall flatsedge (*Cyperus eragrostis*).

Wildlife Corridors

There are no important wildlife corridors on the site. No significant impacts would occur and no mitigation is required.

Special-Status Plant Species

As reported in the 2015 SEIR, protocol-level rare plant surveys were conducted at the project site in 2000 through 2003 prior to site grading activities. Field surveys for special-status plants were conducted by thoroughly searching each wetland and conducting a transect survey of the annual grassland habitats. No federal or state listed species were observed during any of the surveys conducted on the project site (Stromberg 2003, Olberding 2003).

The project site falls within a geographic region designated by the USFWS and the Corps as the Santa Rosa Plain. The Santa Rosa Plain has a number of state and federally listed species and there are regulatory agency rules that govern how projects must evaluate impacts to wetlands and listed species. Due to sensitivity of federally and state-listed species known from the Santa Rosa Plain, we discuss these species further below.

Vernal Pool Plants

Loss of suitable seasonal wetland habitat that potentially could support special-status vernal pool plants would be regarded as a potentially significant impact pursuant to the CEQA. However, mitigation for wetlands that were removed from the project site in prior years was fully mitigated at both the Yuba Drive Turn-Key Mitigation Property and the Gobbi 2 Preserve property prior to site grading (complying with the previous EIR for the Dutton Meadows projects presented as Mitigation Measure 3.6-2).

Mitigation already completed for the Dutton Meadows projects included the creation of 1.66 acres of new wetland and the restoration of 4.0 acres of seasonal wetland habitat for a final mitigation ratio of 1.25:1, within the 108.8-acre Gobbi Preserve No. 2. The Gobbi Preserve No. 2 mitigation site now support Sebastopol meadow foam (*Limnanthes vinculans*), Burkes goldfields (*Lasthenia burkei*) and Sonoma sunshine (*Blennosperma*

bakeri) colonies within the 5.77 acres of wetland creation and restoration implemented to compensate for impacts resulting from the Dutton Meadows projects. As all suitable rare plant habitats were fully mitigated at Gobbi Preserve No. 2, impacts to rare plants, including state and federally listed rare plants, are considered to be less than significant pursuant to CEQA with mitigation already completed.

Lobb's aquatic buttercup

Lobb's aquatic buttercup (*Ranunculus lobbii*), a non-listed CNPS List 4 species, which is not a rarity status that rises to the level of significance pursuant to the CEQA, was reported to occur in a single seasonal wetland within the Project area in previous rare plant studies. Project site wetlands were removed in 2007, or in earlier years, and were fully mitigated at both the Yuba Drive Turn-Key Mitigation Property and the Gobbi 2 Preserve. Both properties were deeded over to the CDFW completing regulatory agency required mitigation for impacts to special-status plants and the CTS.

The Dutton Meadows roadside ditch, which would be impacted as part of the proposed project, is not a vernal pool or seasonal wetland habitat that provides suitable habitat conditions for rare plants. It is shallow and flashy in nature, with many drying cycles through the winter. Regardless, this ditch is within the area covered by the USFWS' Biological Opinion for the Dutton Meadows Specific Plan and per the requirements of that Biological Opinion all potential impacts to rare plants were fully mitigated via the establishment of the 108.8-acre Gobbi 2 Preserve.

Special-Status Wildlife Species

A search of the CNDDB found five records for special-status wildlife species occurring within 3 miles of the project site. The only species with potential to occur on the project site, the California tiger salamander (CTS) and white-tailed kite (*Elanus caeruleus*) are discussed below.

California Tiger Salamander

The project site is located within the known range of the Sonoma County "Distinct Population Segment" (DPS) of CTS. Under the Federal Endangered Species Act (FESA), the USFWS emergency listed the Sonoma County DPS as endangered on July 22, 2002. The USFWS formalized the listing of the Sonoma County DPS of CTS as endangered on March 19, 2003 (USFWS 2003). The USFWS determined that this population is significantly and immediately imperiled by a variety of threats including habitat destruction, degradation, and fragmentation due to urban development, road construction, pesticide drift, collection, and inadequate regulatory mechanisms. In addition, it was determined that this population could face extinction because of naturally occurring events (e.g., fires, droughts) due to the small and isolated nature of the remaining breeding sites and low number of individuals in this DPS.

In 2011, the USFWS designated revised critical habitat for the Sonoma County DPS of CTS. In total, approximately 47,383 acres of land were designated as Critical Habitat for the Sonoma County DPS of CTS under the revised Final Rule (USFWS 2011). The project site is located within this mapped critical habitat. Per the USFWS Recovery Plan for the Santa Rosa Plain (USFWS 2016), the project site is located within the Llano Crescent-Stony Point "Core Area".

On March 4, 2010, CTS was also state-listed as a threatened species under the California Endangered Species Act (CESA). Proposed projects may not impact CTS without incidental take authority from both the USFWS and the CDFW. Prior to implementing a project that would result in "take" (i.e., to harm, harass, or kill) of CTS, the USFWS must prepare an incidental take permit pursuant to either Section 7 or Section 10 of the FESA. Similarly, projects that could result in take of CTS also require incidental take authority from the CDFW pursuant to the CESA.

CTS occur in grasslands and open oak woodlands that provide suitable over-summering and/or breeding habitats. CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. While 1.3 miles is typically considered the maximum migration distance of CTS to/from their breeding pools to upland over-summering habitat, there is literature suggesting that the CTS could migrate up to 1.5 miles from their breeding pools. As such, unobstructed migration corridors are an important component of CTS habitat.

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. Occasionally CTS are found breeding in slow moving streams or ditches. In most of the range of CTS, seasonal wetlands that are used for breeding typically must hold water into the month of May to allow enough time for larvae to fully metamorphose.

The closest adult CTS observation (CNDDB Occurrence No. 1105) is located 440 feet northwest of the project site. An additional adult CTS observation is located 1,020 feet southwest of the project site. The closest breeding CTS location is 1,100 feet west of the project site.

In the 2005 EIR, Impact 3.6-3 stated that implementation of the Project would result in loss of California tiger salamander "aestivation habitat."

The Project site is surrounded by urban residential and commercially developed lands and does not provide California tiger salamander (CTS) breeding opportunities. The project site is separated from the only known CTS breeding pond in the area of the project site by Meadow View Elementary School and Dutton Meadows Avenue, and lacks well-developed over-summering habitat because of the absence of abundant burrows. Nonetheless, the site would be regarded as suitable migration habitat, although not particularly good migration habitat for the CTS.

The Dutton Meadows project site has no known on-site breeding, and USFWS approved past surveys conducted before wetlands were removed in 2007 were negative for CTS. Nevertheless, most of the Project site contains annual grassland habitat and burrows used by small mammals that cannot be ruled out as suitable upland habitat. Therefore, approximately 18.03 acres of potential CTS over-summering habitat on the Dutton Meadows project site would be removed by construction of the proposed Project.

Loss of the potential CTS over-summering habitat would be regarded as a significant impact. In the 2005 EIR, Mitigation Measure 3.6-3 required preservation/enhancement of California tiger salamander over-summering habitat, which would reduce the level of impacts to levels regarded as less than significant.

In compliance with the conditions in the USFWS's BO for the Specific Plan, and CDFG's Agreement with Gobbi Mitigation Preserve LLC, impacts to CTS habitat were fully mitigated for this project in compliance with the USFWS's BO for the Specific Plan Area, via purchase of mitigation credits from the Gobbi Preserve. The Gobbi Preserve is located within the Llano Crescent-Stony Point "Core Area."

According to the Programmatic Biological Opinion (USFWS 2007), a 2:1 mitigation ratio is required for projects that are greater than 500 feet and within 2,200 feet of a known breeding site, or within 500 feet of an adult occurrence. In compliance with the conditions in the USFWS' BO, the Corps' permit and RWQCB Water Quality Certification, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 23.92 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, providing 2:1 mitigation for impacts to 11.96 acres of suitable CTS habitat on the Bellevue Ranch 8 parcels. Similarly, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 12.15 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, thus providing 2:1 mitigation for impacts to 6.07 acres of potential CTS habitat on the Minoia Property. Finally, by agreement with Dutton Village Partners LLC, Trumark Companies LLC, and DM Associates, and Hern Avenue LLC, 0.38 acre of CTS mitigation credits were purchased from the Gobbi Mitigation Preserve LLC for to compensate for impacts to listed species that will occur when Minoia and Pelitz Park Land is developed and dedicated to the City of Santa Rosa as a component of the Dutton Meadows Specific Plan development project. Accordingly, all impacts to CTS habitat have been adequately mitigated.

The 2005 SEIR Mitigation Measure 3.6-8a required onsite biological monitoring during construction. Accordingly, biological monitors would be employed to monitor and/or implement construction mitigation measures and to report on compliance of contractors with mitigation requirements. Monitors would report directly to a Designated Biologist. Biological monitors would be qualified to conduct the onsite biological monitoring that should occur during mass grading, joint trench work, and any other major earth moving activities. Reports on non-compliance with environmental requirements may result in temporary halting of construction activity to examine the noncompliance and prevent further resource damage. Biological monitors would implement the following measures (modified from Mitigation 3.6-5a to increase protection and provide additional specificity):

• Provide worker environmental awareness training for all construction personnel that identifies sensitive biological resources that may occur in or adjacent to construction areas and that addresses measures required to minimize Project impacts during construction and operation;

• Be present onsite during mass grading, joint trench work, and any other major earth moving activities to identify any special status species resource that potentially could occur in the area of the project site;

• Prepare construction monitoring and compliance reports that document compliance with the USFWS' Biological Opinion Terms and Conditions.

The 2005 SEIR Mitigation Measure 3.6-8b required protection of California tiger

salamander that could be found during construction.

The project would comply with the USFWS' Biological Opinion requirements for CTS, which are listed below, which would implement that mitigation measure:

> 1. A duly trained USFWS approved biological monitor (Designated biologist) will be present at all times when earth work is in progress at the project site (i.e., during mass grading, joint trench work, and any other major earth moving activities) and mitigation site to supervise the on-site compliance of these protection measures. A USFWS-approved biologist will be responsible for appropriate training of the monitor.
>
> 2. A training session will be provided by the Designated biologist to all construction workers before work is started on the project. After initial training, all new personnel will be given the training as well. The training session will provide pictures of the tiger salamander, information on their biology, measures required to protect this species, relevant Federal and state regulations, penalties to harming or harassing the tiger salamander, and what to do if a tiger salamander is found.
>
> 3. If a tiger salamander is observed within the project site by a worker, the worker will immediately inform the monitor. The monitor will notify the biologist immediately. All work will halt and machinery turned off within 100 feet of the animal until a USFWS-approved biologist can capture and remove the tiger salamander from the work area. USFWS-approved biologists are the only personnel allowed to handle tiger salamander. Any tiger salamander found in the work area will be relocated to USFWS and/or CDFW pre-approved areas no more than one hour after capture, or as soon as USFWS or CDFW provided guidance on the relocation site.
>
> 4. The Designated biologist shall have the authority to halt work activities at any time to prevent harming special status species or when any of these protective measures have been violated. Work will only commence when authorized by the monitor or biologists.
>
> 5. Before the start of work each morning, the monitor will check for animals under any equipment such as vehicles and stored pipes.
>
> 6. Before the start of work each morning, the Designated biologist will check all excavated steep-walled holes or trenches greater than one foot deep for any wildlife. Wildlife will be removed; the Designated biologist will be notified if a tiger salamander is found.
>
> 7. A record of all tiger salamanders observed and the outcome of those observations will be kept by the biologist and submitted to the USFWS.
>
> 8. Access routes and number and size of staging and work areas will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of the road work will be clearly marked. Off-road driving will be limited to only what is necessary for the project.
>
> 9. All foods and food-related trash items, such as lunch bags, plastic sandwich

bags, fast food containers, foods of any type, candy wrappers, chip packages, drink bottles and cans, etc., will be enclosed in sealed trash containers and removed completely from the site once every three days. Food items could attract predators into the work area.

10. No pets are allowed anywhere in the project site during construction.

11. A speed limit of 15 mph on dirt roads will be maintained.

12. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.

13. Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any aquatic habitat.

14. A pollution prevention plan and the identification of best management practices to control storm water discharge, erosion, and sedimentation will be developed and implemented.

15. All grading and clearing will be conducted between April 15 and October 15 of any given year.

In addition, 2005 SEIR Mitigation Measure 3.6-8b requires installation of a 3-foot high silt fence prior to construction that will remain in place during construction. The Designated biologist will be present during fence installation. In addition, from the commencement of fall rainfall through the end of March (the tiger salamander breeding dispersal period) the Designated biologist shall provide daily monitoring to verify that the fence is maintained in good condition and that no tiger salamanders are stranded against the fence. Finally, the Designated biologist shall survey the construction area for tiger salamanders a minimum of 24 hours before the onset of rainfall and again prior to the recommencement of construction activities after rainfall. As long as there are earth moving activities required for construction, even after the tiger salamander breeding dispersal period, the Designated biologist shall continue to monitor the project site and fencing at least weekly.

The 2005 SEIR Mitigation Measure 3.6.8c required preparation of a *Biological Resources Mitigation Implementation Plan* to set forth procedures necessary to avoid and minimize incidental mortality and injury to state and federally listed plants and wildlife. Accordingly, a Biological Resource Mitigation Implementation and Monitoring Plan (BRMIMP) would be prepared that outlines how protection and mitigation measures will be implemented and it shall be submitted to the City of Santa Rosa prior to issuance of a grading permit for the project site. The BRMIMP is a document that shall describe the responsibilities of the Contractor's Compliance Manager who oversees all compliance measures required for the Project, the Designated Biologist who will oversee compliance with biological mitigation measures, and as otherwise required oversees construction activities on the ground. The Designated Biologist will prepare daily logs and monthly compliance reports that shall be submitted to the City of Santa Rosa, and as required, to the USFWS and CDFW.

These measures would reduce potential construction impacts to CTS to a less-than-significant level, as described in the 22005 SEIR.

White-Tailed Kite

In the 2005 SEIR, Impact 3.6-5 stated that the Project would result in the loss of raptor nesting habitat, including white-tailed kite nesting habitat.

The white-tailed kite (*Elanus caeruleus*) is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13). The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Although the surrounding terrain may be semi-arid, kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993).

The nearest CNDDB record for this species is located 0.1 mile east of the project site. The project site provides suitable hunting grounds for white-tailed kites, and the trees on and immediately adjacent to the project site provide potentially suitable nesting habitat.

While unlikely, white-tailed kite could nest on the project site. Raptors (that is, birds of prey) are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their eggs and young are protected under California Fish and Game Codes Sections 3503, 3503.5.

Potential impacts from the proposed project include disturbance to nesting raptors. Impacts to nesting raptors would be less than significant with implementation of 2005 EIR Mitigation Measure 3.6-5, as modified below.

Revised Mitigation 3.6-5. To avoid impacts to nesting raptors and common passerine species, a nesting surveys shall be conducted 15 days prior to commencing with construction work, if this work would commence between February 1 and August 31. The nesting surveys shall include examination of all trees within 200 feet of the entire project site, not just trees slated for removal. A nest survey report shall be prepared upon completion of the survey and provided to the City of Santa Rosa with any recommendations required for establishment of protective buffers as necessary to protect nesting birds.

If nesting raptors or common bird species are identified during the surveys, the dripline of the nest tree must be fenced with orange construction fencing (provided the tree is on the project site). A 200-foot radius around the raptor nest tree must be staked with bright orange lath or other suitable staking. A 50-foot radius around any common passerine nest tree must be staked with bright orange lath or other suitable staking. If the nest tree is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. *The size of the buffer may be altered if a qualified biologist conducts behavioral observations and determines the nesting birds are well acclimated to disturbance.* If this occurs, the biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. No

construction or earth-moving activity shall occur within the established buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15. This date may be earlier or later and would have to be determined by a qualified biologist. If a qualified biologist is not hired to watch the nesting birds, then the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1.

Other Migratory Nesting Birds

Common nesting birds such as mourning dove, California scrub jay, and house finch, among others could be impacted by the proposed project. Common birds and their active nests are protected under California Fish and Game Code (Sections 3503, 3503.5), and the Federal Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young caused by implementation of the proposed project would be regarded as potentially significant. These impacts would be mitigated to levels considered less than significant pursuant to CEQA by Mitigation 3.6-5 in the 2005 SEIR, as modified above.

Wetlands

Approximately 0.16 acre of seasonal wetland habitat was previously filled on the Dutton Meadows Phase I property in accordance with U.S. Army Corps of Engineers (File No. 24554N) and with the Regional Water Board authorization (WDID No. 1B01061WNSO – Bellevue Ranch, Phase 8). Mitigation for the overall Dutton Meadows Projects included the creation of 1.66 acres and the restoration of 4.0 acres of wetland habitat for a final mitigation ratio of 1.25:1, in addition to the establishment of the 108.8-acre Gobbi Preserve No. 2. Construction of the wetlands and establishment of the preserve had already been approved and began in Fall 2005 (WDID No. 1B04163WNSO).

Stromberg 2003, and Olberding and Stromberg 2003 state that all wetlands were removed from the project site. Dr. Lawrence Stromberg also states that Gobbi Mitigation Bank 2 created 5.66 acres of wetlands to compensate for the impacts to wetlands for the Dutton Meadows project (Harvey Rich pers. Comm. with G. Monk 08/07/18). Therefore, impacts to seasonal wetlands have been adequately mitigated.

The project site currently does not support any seasonal wetland habitats. Road improvements, such a curb and gutter along Dutton Meadows, and the access road off Dutton Meadows would impact a roadside ditch along Dutton Meadows; however, this ditch is not subject to Corps or RWQCB Clean Water Act jurisdiction based on the 2015 Clean Water Act Rule. The *Clean Water Rule: Definition of ''Waters of the United States''; Final Rule* (Corps of Engineers June 29, 2015) excludes ditches that are not excavated in wetlands/other waters, or that relocate a tributary (i.e. ditches that were excavated in uplands), and that do not drain wetlands. Moreover, the 2015 Clean Water Act excludes ditches associated with modes of transportation, such as roadways. The northmost end of the roadside ditch begins along Dutton Meadows immediately adjacent to the

northwest corner of the project site. The flows into the ditch originate from street surfaces and other developed surfaces in the immediate vicinity of the project site. During large storm events surface runoff flows southward through the ditch towards high density development to the south. Since this roadside ditch was excavated in uplands along Dutton Meadows (road), and it does not support a dominance of wetland vegetation nor drain any wetlands, a Clean Water Act permit from the Corps and RWQCB would not be required for this project. As such, Mitigation Measure 3.6-2 is not required.

BMPs

The M&A report described all of the agency-required Best Management Practices applicable to the project (pp. 41-42; 44-46).

Conclusions

As described above, compliance with mitigation measures contained in the 2005 SEIR, as modified above for specificity to the proposed project and compliance with the Biological Opinion, reduce the impact to biological resources to a less-than-significant level, consistent with the findings of the 2005 SEIR.

3.7 Hazardous Materials

Introduction

Hazardous materials were addressed in Section 3.4 of the 2005 SEIR. A subsequent Phase I Environmental Site Assessment (ESA) was prepared in April 2007. (ENGEO, Inc., Phase 1 Environmental Site Assessment, Dutton Meadow Properties, Santa Rosa, California, April 20, 2007). An updated Phase 1 ESA was prepared for this project in July 2018 (ENGEO, Inc., Draft Phase 1 Environmental Site Assessment, Dutton Meadows, Santa Rosa, California, July 24, 2018) (Appendix E).

Previous Analyses and Findings

The 2005 SEIR found that the project construction could expose workers and the public to soil contamination and hazards associated with demolition of old buildings (lead-based paints and asbestos-containing materials). The 2005 SEIR included the following mitigation measures (summarized below), which would reduce this impact to a less-than-significant level:

> **Mitigation Measure 3.4-la.** Implement OSHA Standards for Lead Paint Removal. United States Occupational Safety and Health Administration (OSHA) standards requiring protection for workers when working with paint containing lead shall be implemented during building renovations and/or demolitions, regardless of the concentration.
>
> **Mitigation Measure 3.4-lb.** Properly abate asbestos-containing materials.
>
> **Mitigation Measure 3.4-2a.** Notify agencies regarding contamination. (Master EIR Mitigation Measure 3.1 and 8-1).
>
> **Mitigation Measure 3.4-2b.** Characterize soil and groundwater conditions and remediate as necessary (Redevelopment EIR Mitigation Measure 3.1.8-1).
>
> **Mitigation Measure 3.4-2c.** Perform Phase II Investigation. Prior to approval of a development project, a Phase II investigation (soil sampling and analysis) for any known contaminated areas shall be prepared.
>
> **Mitigation Measure 3.4-2d.** Perform Phase III Remediation. If a Phase III (remediation) is required for a development project, this shall be completed with Santa Rosa Fire Department permits and approvals prior to the approval of the development plan. contaminated soils.
>
> **Mitigation Measure 3.4-2**e. Place remediation notes on grading plans.
>
> **Mitigation Measure 3.4-3.** Remove aboveground fuel tank and oil in 55-gallon drums located on the Phase 3 development site.

Mitigation Measure 3.4-4. Support proper disposal of household hazardous waste (Master EIR Mitigation Measure 3.1.8-2 as modified below).

Updated Phase I Environmental Site Assessments

ENGEO performed updated phase 1 ESAs for the property in 2007 and 2018. The updated records research did not find documentation of soil or groundwater impairments associated with the current or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the property.

A review of the analytical findings associated with the soil samples recovered from the former ranch and orchard areas did not identify pesticide concentrations above respective screening levels. Samples recovered from the former ranch and orchards exhibited metallic analytes (arsenic, lead, and mercury levels) consistent with background concentrations for the State of California. Based on the analytical findings, ENGEO indicated that the Property does not appear to have been significantly impacted from past agricultural practices (ENGEO 2018).

For soil stockpile sampling, TPH-gasoline, OCP, PCB, VOC, and SVOC analytes were not detected above laboratory reporting limits. TPH-diesel and TPH-motor oil concentrations were below screening levels. Metallic analytes were reported within the expected range of background concentrations from the State of California. ENGEO opined that the stockpiled soils on the property appear to be suitable, from an environmental standpoint, for unrestricted land use, and would not be classified as California hazardous waste based on the analyses performed (ENGEO 2018).

At the time of the of the 2007 environmental site assessment, the earliest historical aerial photograph dated 1953 depicted orchards on the eastern portion of the Property. A review of the recently provided EDR aerial photograph dated 1942 found the orchard had extended over the central portion of the Property. This portion of the Property was not sampled at the time of the 2007 agrichemical assessment.

Based on the findings of the 2018 assessment, no controlled Recognized Environmental Conditions (RECs), or historical RECs were identified for the Property; however, the following REC was identified for the Property:

- A review of historical aerial photographs found the Property and the surrounding area had been historically utilized as agricultural land. Based on the readily available historical aerial photographs at the time of the 2007 assessment, an agrichemical assessment was performed on the eastern portion of the Property. A review of historical aerial photographs from the 1940s found the extent of the former orchard had traversed the central portion of the Property.

Based upon the timeframe of agricultural use, pesticides or other agricultural chemicals might have been applied to the portion of the Property not sampled at the time of the 2007 assessment and thus could be present in near-surface soils. These chemicals are persistent in the environment and toxic concentrations may remain many years after application. ENGEO recommends an agrichemical assessment, including the recovery of near-surface soil samples, be performed within the uncharacterized former orchard area prior to site redevelopment activities.

Based on a review of records and historical aerial photographs, features of potential environmental concern were identified for the Property. These features were not considered to be RECs, however ENGEO identified recommendations to assure that no significant impacts would occur, consistent with the mitigation measures summarized above (ENGEO 2018). The features and recommended measures are summarized below:

- Based on ENGEO's review of historic aerial photographs, the existing structures situated on the northeastern portion of the Property were constructed no later than the early 1970s. Rural residential structures and associated outbuildings of this age may exhibit actionable concentrations of lead and organochlorine pesticides in near-surface soil at the building perimeters. Prior to site redevelopment, ENGEO recommends a near-surface soil-sampling program be conducted along the perimeter of the buildings to address potential lead and pesticide impact at the Property.
- Given the age of the existing structures, it is conceivable that both lead-based paint and asbestos-containing material are present within the structures. ENGEO recommends retaining a licensed contractor to perform an asbestos and lead-based paint survey prior to demolition.
- The existing stockpiles were characterized in 2007. If additional material has been imported to the Property and/or added to the stockpile subsequent to characterization activities performed in 2007, ENGEO recommends the stockpile be re-characterized prior to site reuse and/or off-haul.
- If a septic system is uncovered during future site grading activities, ENGEO recommends abandoning and disposing of the septic tank under appropriate State and local regulations.
- ENGEO recommends the existing well be properly abandoned/destroyed under appropriated State and local regulations.

Conclusions

These findings and recommendations are consistent with those of the 2005 SEIR. Mitigation measures included in the 2005 SEIR, which would include implementation of the ENGEO recommendations, would continue to reduce the hazardous materials impacts to a less-than-significant level.

3.8. Traffic

Introduction

Information in this section is based on the Traffic Impact Study for the Dutton Meadows Phase II Project (W-Trans, June 26, 2018). The Traffic Impact Study provides an overview of the existing traffic conditions at the proposed project site, and an updated analysis of potential traffic impacts (including assumptions and methodology) that would result from implementation of the proposed project. The results of the analyses are summarized herein; the complete analysis is presented in Appendix F of this Addendum.

Previous Analyses and Findings

Traffic for the overall Dutton Meadows project was assessed in Section 3.2 of the 2005 SEIR. That analysis concluded that traffic from the overall development would have the following potentially significant impacts, all of which would be mitigated to a less-than-significant level via measures included in that EIR and summarized below.

Impact 3.2-1. The Project, in combination with other projects expected to be built in the same time period, may degrade traffic levels on Bellevue Avenue.

> **Mitigation Measure 3.2-1.** Add a traffic signal to the intersection at Bellevue Avenue and Dutton Avenue.

Impact 3.2-4. The Project would result in increased traffic at the unsignalized crossing of Hearn Avenue by student pedestrians.

> **Mitigation Measure 3.2-4a.** Signalize intersection of Dutton Meadow and Hearn Avenue
>
> **Mitigation Measure 3.2-4b**. Add a road within Dutton Meadows parallel to Hearn Avenue
>
> **Mitigation Measure 3.2-4c.** Encourage or expedite construction of Tuxhorn Drive between Dutton Meadow and Burgess Drive/Rain Dance
>
> **Mitigation Measure 3.2-4d.** Improve bicycle and pedestrian travel

Impact 3.2-6. Construction of the Project would lead to increased truck and construction vehicle activity on the local roadway network arid could create lane closures causing traffic delays, transit delays, restricted access, increased traffic hazards, and rerouting of traffic, including emergency vehicles.

> **Mitigation Measure 3.2-6a.** Implement Construction Traffic Management Plan.

Impact 3.2-7. The Project would result in a measurable addition of traffic to US 101. This impact was found not to be mitigable, and findings of overriding consideration were made.

Impact 3.2-9. The Project would result in increased demand for transit services.

> **Mitigation Measure 3.2-9.** Provide transit service improvements.

Cumulative Impact 3.2-10. Cumulative traffic growth may result in increased traffic volumes exceeding the LOS objective for roadway segments.

Mitigation Measure 3.2-10a. Implement traffic improvements on City streets.

Mitigation Measure 3.2-10b.Improve residential street environment.

Cumulative Impact 3.2-11. The Project, along with cumulative traffic growth, may have a significant impact (LOS "D" or worse) on US 101 at certain areas from Wilfred Avenue to State Route 12.

Mitigation Measure 3.2-11. Add auxiliary lanes to US 101.

Other Cumulative Impacts. All other project contributions to cumulative impacts were found to have been mitigated to less-than-significant levels by project-level mitigation measures summarized above.

2018 Traffic Analysis

The 2018 Traffic Impact Study re-assessed the following intersections:

1. Hearn Avenue/Dutton Meadow
2. Hearn Avenue/Dutton Avenue
3. Northpoint Parkway/Dutton Meadow (new intersection created by project)
4. Northpoint Parkway/"New Street" (new intersection created by project)

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Existing Intersection Levels of Service

Since the intersections of Northpoint Parkway/ Dutton Meadow would either be completed under the future scenario or with the project, and Northpoint Parkway/'New Street"would be developed as part of the project, no service level was determined for this location under existing conditions. Existing intersection Levels of Service (LOS) at Hearn Avenue/Dutton Meadow are LOS B in the AM peak hour, and LOS C in the PM peak hour. Existing intersection Levels of Service (LOS) at Hearn Avenue/Dutton Avenue are LOS C in the AM peak hour, and LOS B in the PM peak hour.

Future Volumes

Future peak hour volume projections were taken from a build out analysis which is contained in the Roseland Area/Sebastopol Road Specific Plan, City of Santa Rosa, 2016; this scenario represents cumulative traffic conditions that would be expected upon build out of the land uses identified in the City's General Plan.

It should be noted that some of the projected future volumes from the Roseland

Area/Sebastopol Road Specific Plan are less than existing volumes. This can be attributed to the planned improvements in the area that would result in changes to the circulation system. However, to be consistent with the Specific Plan, the volumes from the Plan were applied. Further, though development of the project site was assumed and trips included in the SCTA model volumes applied in the Specific Plan analysis, these trips were not subtracted out of the future volumes for the "without project" scenario, resulting in a more conservative analysis.

Future Infrastructure Improvements

Roadway network improvements are proposed within the study area that were applied to the analysis based on the Roseland Area/Sebastopol Road Specific Plan. Improvements include extending the Dutton Avenue from its current terminus near Duke Court to a planned roundabout where drivers would turn right to continue to the existing Dutton Avenue/Hearn Avenue intersection resulting in the planned four-legged intersection. Other improvements at that intersection would be a new westbound left turn lane, a new eastbound through lane, and reassigning the southbound right-turn lane into a southbound through/right-turn lane.

The Specific Plan shows, Northpoint Parkway beginning where Dutton Avenue turns right at the roundabout, continuing north to intersect with Hearn Avenue, replacing part of Dutton Meadow, which would curve northeast beginning near Meadowview Elementary School, extend through the project site, and end at the Dutton Avenue extension south of Hearn Avenue. Per the Specific Plan, the roadway would have three lanes, with one lane in each direction and either a two-way left-turn lane or median. The plan notes that the City's General Plan indicates that Northpoint Parkway would be a four-lane street but based on the planned decrease in demand, three lanes would be sufficient.

The project's proposed configuration for the future intersection of Dutton Meadow/Northpoint Parkway differs from the City's planned configuration wherein the Northpoint Parkway extension would be a northwest-southeast street. South of Meadowview Elementary, Dutton Meadow would curve towards the east, intersect with Northpoint Parkway, and traverse the project site. As proposed, Dutton Meadow would continue to be a north- south street with Northpoint Parkway intersecting across from the outbound driveway of Meadowview Elementary School. The "New Street" that would traverse the site would be accessed via a tee intersection approximately 450 feet east of the proposed Northpoint Parkway/Dutton Meadow intersection. Sight lines along Northpoint Parkway from the "New Street" would be adequate for speeds of up to 40 mph.

The planned Northpoint Parkway and Dutton Meadow intersection was intended to provide a northwest- southeast arterial where most streets in the area are north-south or east-west. As proposed, the intersection does not preclude this. The roadway would maintain the desired number of lanes on Northpoint Parkway. With signal timing that favors the Northpoint Parkway movements, the southbound left-turn and the

westbound right-turn, it would result in the desired effect of keeping vehicles on the Parkway and not pushing them to Dutton Meadow. Similarly, the vehicles that were intended to travel on Dutton Meadow through the project site would continue to do so with the proposed configuration.

Since the proposed configuration would result in a signalized intersection at the Meadowview Elementary outbound driveway, it is recommended that this approach be striped with a left-turn lane and a through/right- turn lane as part of the project.

Additionally, the Plan suggests adding an eastbound right-turn pocket at Hearn Avenue and Northpoint Parkway, previously Dutton Meadow.

Proposed Roadway Geometry

The proposed project differs from the future planned improvements in the study area in terms of the future intersection of Northpoint Parkway/Dutton Meadow and the circulation within the project site. As proposed, Dutton Meadow would remain a north-south street and Northpoint Parkway would form the east leg where it intersects Dutton Meadow at the exiting Meadowview Elementary School outbound driveway, resulting in a four-legged intersection. The planned street that would traverse the project site, terminating at the Dutton Avenue extension, would still do so but access to the street would be via a tee intersection about 250 feet east of the proposed Dutton Meadow/ Northpoint Parkway intersection, as opposed to one of the legs at the planned intersection as shown under the Future Conditions scenario.

Trip Generation

The anticipated trip generations for the proposed project as well as the approved uses were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in Trip Generation Manual, 10th Edition, 2017 for single-family detached housing (Land Use #210), and for apartments (Land Use #220) for the auxiliary dwelling units. As shown in Table 4, the proposed project is expected to generate an average of 1,820 trips per day, including 133 trips during the a.m. peak hour and 174 during the p.m. peak hour. After applying deductions for the two existing single-family homes that will be eliminated, the project would be expected to generate 1,801 new trips daily, including 132 during the morning peak hour and 172 during the evening peak hour; these new trips represent the increase in traffic associated with the project compared to existing volumes. The project as approved and incorporated in the General Plan, for a comparison, is summarized in the table as well. As shown, the proposed project would generate fewer trips than would have been anticipated for the approved land use for the site.

Intersection Operations

Existing plus Project Conditions

Upon adding project trips to existing volumes, with the proposed configuration of the new intersection of Northpoint Parkway/Dutton Meadow and Northpoint Parkway/"New Street", the study intersections are expected to continue operating acceptably. Under the existing conditions the intersection of Northpoint Parkway/"New Street" would be constructed with the project but no other planned improvements would be completed, so the intersection would be a partial intersection with only eastbound left-turn and southbound right-turn maneuvers. As such, delay at this location could not be estimated as both those maneuvers would be "free movements" with essentially no delay.

With the addition of project-related traffic volumes, average delay at the intersection of Hearn Avenue/Dutton Avenue is projected to decrease during the a.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The project adds traffic predominantly to the eastbound and westbound through movements, which have average delays lower than the average for the intersection, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers would experience little, if any, change in conditions because of the project.

Future plus Project Conditions

Operation under Future plus Project volumes was reviewed with both the planned and proposed configuration for the future study intersection of Northpoint Parkway/Dutton Meadow. The volumes for the proposed configuration were based on the same projected movements for the planned configuration, with several movements combined to reflect the change in configuration with the configuration proposed with the project.

Upon the addition of project-generated traffic to the anticipated Future volumes, and with either the planned or proposed intersection configuration, the study intersections are expected to operate acceptably. AM and PM peak hour LOS B would occur under future conditions with or without the project at the intersections of Hearn Avenue/Dutton Meadow, Northpoint Parkway/Dutton Ave, and Northpoint Parkway/Dutton Meadow School Driveway. AM and PM peak hour LOS D would occur under future conditions with and without the project at the Hearn Avenue/Dutton Meadow intersection.

AM and PM peak hour LOS A would occur under future conditions with and without the project at the Northpoint Parkway/"New Street" intersection. The only change in

future LOS with the project would occur at this intersection, with the LOS improving from C to B on the southbound leg of this intersection during the PM peak hour.

It also should be noted that under the Future and Future plus Project scenarios the delay at the intersection of Hearn Avenue/Dutton Meadow is less than under existing conditions. This can be attributed to the planned future improvements at the intersection including the addition of an eastbound right-turn pocket. With the change in roadway geometry in addition to the projected growth, it would be reasonable to assume the signal timing would be updated and as such, result in reduced delays.

Access and Circulation

Planned Improvements Compared to Previously Proposed

The proposed project does not conform to the planned roadway configurations for Northpoint Parkway and the minor street through the site. While it is noted that the proposed circulation system may require changes to the General Plan, it is understood that the project applicant acknowledges this and would request such changes to proceed with the project as proposed. The planned roadway alignment would bisect the site in such a way as to create a large, triangular-shaped parcel that would accommodate fewer units, making it infeasible to achieve the density desired by the City. With the planned configuration, the future roadway would instead be located along the southern perimeter of the site, allowing a more standard lot pattern.

As planned, Northpoint Parkway would be a regional arterial street and would act as an alternate route for traffic in the Southwest quadrant of Santa Rosa. Where the existing surrounding street network is predominantly north- south and east-west streets, Northpoint Parkway would be a northwest-southeast street. In general, the proposed configuration of the study intersection does not preclude this. The proposed roadway would maintain the three lanes on Northpoint Parkway, one in each direction with either a median or two-way left-turn lane. While the planned configuration could result in traffic traveling straight through the intersection on the parkway, the planned configuration would require a southbound left-turn or westbound right-turn to continue along this route. As analyzed, the intersection timing used prioritized these movements. The westbound right-turn and southbound left-turn would operate concurrently with a programmed overlap phase. It was also assumed that these movements would be on recall so that absent a call on any other approach or movement, the southbound left-turn and westbound right-turn would rest in green. This type of timing would result in the desired effect of maintaining the flow of traffic on Northpoint Parkway and not pushing traffic to Dutton Meadow. As noted in the operational analysis, the difference in delay between the two alignments would be minimal.

Given that there are no plans to widen Hearn Avenue between the Dutton Meadow and Dutton Avenue intersections due to the right-of-way constraints, any increase in volumes may cause that segment of Hearn Avenue to become oversaturated. It should be noted that in the analysis with the proposed configuration, the only volumes routed

northbound through the intersection of Northpoint Parkway/Dutton Meadow were those movements that were previously projected to route through that intersection to the Hearn Avenue/Dutton Meadow-Northpoint Parkway intersection to the north. With the potential for that section of Hearn Avenue to become oversaturated, drivers naturally find other routes through a street network. Therefore, even with the proposed configuration which includes the "New Street," drivers may naturally reroute to that street if they experience delays on Hearn Avenue.

Meadowview Elementary School

The queues with the proposed intersection configuration were reviewed to determine any potential impacts to Meadowview Elementary School's access points. Of the three driveways, the school's two southerly driveways operate as a one-way loop with the northerly of the two for inbound vehicles and the southernmost for outbound traffic. This drop-off loop is intended for school buses only, daily from 7:00 a.m. to 3:00 p.m., as indicated by the sign posted at the inbound driveway. Additionally, it was observed that cones were placed at the entrance driveway to deter other vehicles from entering. The northern most driveway provides full access to the parking lot as well as an additional drop-off area.

Queues in the southbound left-turn pocket on Northpoint Parkway at Dutton Meadow were reviewed under the Future plus Project volumes during the a.m. and p.m. peak hours. During the critical a.m. peak hour, which is concurrent with the drop-off period at school, the queue length is expected to be 155 feet, requiring a turn pocket of at least 175 feet in length. At the northernmost driveway, a 50-foot left-turn lane is proposed. Given the distance between the proposed intersection and the northern most full access driveway, there would be sufficient length to accommodate the projected queues as well as the necessary transition lengths between the storage lanes. During the p.m. peak hour under Future plus Project volumes the expected southbound left-turn queue would be 159 feet, which would be accommodated within the 175-foot available storage. It should be noted that while the expected southbound left-turn queue would extend past the inbound loop, the loop is intended for buses only and though it may change, the current bus route results in all buses coming from the north and turning right into the driveway. Any future bus routes could be routed to result in a right-turn into the driveway.

It is noted that the proposed intersection configuration would retain vehicular traffic fronting the school while the planned configuration would not. Though this is not necessarily desirable, it can be beneficial to the circulation. While the circulation within the school could change, and the existing driveway may not always be exclusively outbound, it is beneficial having a signalized driveway for the exiting traffic to regulate the high volumes that can be expected during the morning and afternoon dismissal periods. As part of the project, with the proposed configuration, it is recommended that the school's driveway approach to the new signalized intersection be striped for with a left-turn lane and a through/right-turn lane.

Also, it is reasonable to assume that some residents of the proposed project would have

children that attend the Meadowview Elementary school and would want to walk to the school. Crosswalks with pedestrian crossing time were assumed for each approach and would provide adequate access to the school site.

Identified Mitigation

Based on the 2005 SEIR, CH2M Hill, 2004, the need for a connected sidewalk system and implementation of planned bicycle facilities were identified. The proposed project would provide continuous pedestrian facilities in the site as well as bike lanes along Northpoint Parkway.

Conclusions

The study intersections are expected to continue operating acceptably at the same or better service levels with project traffic added to existing volumes. The existing and proposed study intersections would operate acceptably with project traffic added to future volumes. The proposed project would provide continuous pedestrian facilities as well as bike lanes along Northpoint Parkway, and "sharrows" in the left-turn lanes to indicate to drivers that cyclists would be sharing the lanes. There would be sufficient line of sight for vehicles at the Northpoint Parkway/"New Street" intersection for speeds up to 40 mph. No new or more severe significant traffic impacts were found compared to the SEIR.

3.9. Utilities and Public Services

Introduction

Utilities and Public Services were addressed in Section 3.3 of the 2005 SEIR. The City was re-contacted regarding water and sewer capacity for this Addendum.

Previous Analyses and Findings

The 2005 SEIR included the following potentially significant impacts and mitigation measures for services and utilities:

Impact 3.3-3: The Project may increase demand for schools to such a degree that enrollment is greater than school capacity.

> **Mitigation Measure 3.3-3.** Implement payment of mitigation fees.

Impact 3.3-4. The Project may increase demand for parks and recreation facilities to such a degree that General Plan service standards are not maintained.

> **Mitigation Measure 3.3-4.** Require park land dedication and park development or in-lieu park fees.

Impact 3.3-6. The Project may increase demand for police services to such a degree that the General Plan service standard Is not maintained.

> **Mitigation Measure 3.3-6.** Implement community services district program.

Impact 3.3-7. The Project may increase demand for fire and emergency services to such a degree that the General Plan service standard is not maintained.

> **Mitigation Measure 3.3-7.** Fund new fire station

Cumulative Impact 3.3-8. The Project, in combination with other development in the Southwest Plan Area, may increase demand for water supply to such a degree that the City cannot commit to providing adequate service.

> **Mitigation Measure 3.3-8a.** Implement water conservation measures.

> **Mitigation Measure 3.3-8b.** Develop alternative sources of water.

Cumulative Impact 3.3-9. The Project, in combination with other development in the Southwest Plan Area, may increase demand for wastewater treatment and disposal to such a degree that the City cannot commit to providing adequate service.

Mitigation Measure 3.3-9. Collect sanitary sewer connection fee.

Other Cumulative Impacts (3.3-10 through 3.3-13). The 2005 SEIR concluded that the project's contribution to cumulative impacts to parks/recreation, schools, police, fire, and emergency services would be mitigated to less-than-significant levels by implementation of the project-specific mitigation measures summarized above.

2018 Analyses

The city was re-contacted regarding availability/adequacy of water and sewer services for the proposed project. Although the City no longer issues official "Will Serve" staff replied that there is adequate water and sewer capacity for development within the City jurisdiction[20].

The local school districts serving the project area also have been contacted to determine if any school capacity constraints exist for the project. The school districts confirmed that there is adequate capacity at existing elementary and high schools for students generated by the proposed new homes[21, 22].

Conclusions

The currently proposed project would not have any new potentially significant impacts to public services or utilities. All services and utilities impacts would continue to mitigated to less-than-significant levels by implementation of mitigation measures identified in the 2005 SEIR.

[20] Shelli Allen, Civil Engineering Technician, Water Engineering Services, City of Santa Rosa, email to Trevor Brown, Trumark Homes, July 12, 2018.

[21] Letter from David Alexander, Superintendent, Belleview Union School District, to Trevor Brown, Trumark Homes, July 2018.

[22] Letter from Rick Edson, Assistant Superintendent, Santa Rosa City Schools, to Trevor Brown, Trumark Homes, July 27, 2018.

4.0 Conclusions

Based on the above analysis and discussion, no revisions are needed in the 2005 SEIR because substantial changes in the proposed action relevant to environmental concerns have not occurred, no new significant impacts would result from the proposed changes included in the Project, no substantial changes to environmental circumstances have occurred since the 2005 SEIR was certified, and because no new information relevant to environmental concerns bearing on the proposed action has come to light that would indicate the potential for new significant impacts not discussed in the 2005 SEIR.

The City believes that an addendum to the 2005 SEIR is considered the appropriate CEQA document for the proposed changes to housing types and numbers compared to the previously approved project. None of the conditions in the CEQA Guidelines Section 15162 (for a subsequent EIR) apply for the Project as currently proposed and, as a result, the conditions in Section 15163 (for a supplemental EIR) also do not apply.

While the proposed Project would reduce some of the impacts compared to the previously approved project, the potential for unavoidable significant impacts from the Project does not materially change from the 2005 SEIR and 2007 Findings of Overriding Consideration.

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Appendix A: 2018 Air Quality and Greenhouse Gas Technical Report

Dutton Meadows Residential
Air Quality and Greenhouse Gas Assessment
Technical Report

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March 28, 2018

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Dutton Meadows Residential
Air Quality and Greenhouse Gases Assessment
Technical Report

1.0 INTRODUCTION

This document presents results of an air quality and greenhouse gas (GHG) analysis associated with the Dutton Meadows Residential Project in Santa Rosa, California. This document provides an overview of the existing air quality conditions at the project site, the air quality regulatory framework, an analysis of potential air quality impacts that would result from implementation of the proposed project, and identification of applicable mitigation measures. The supporting information, methodology, assumptions, and detailed results used in the air quality and GHG analysis are provided in **Attachment A: CalEEMod Output Files**, **Attachment B: Climate Action Plan New Development Checklist**, and **Attachment C: Mitigation Measures.**

The Dutton Meadows Project Subsequent Final Environmental Impact Report (EIR) stems from three programatic EIRs: (a) Southwest Santa Rosa Area Plan Final EIR, (b) Southwest Santa Rosa Redevelopment Plan EIR, and (c) the Santa Rosa 2020 General Plan EIR.

2.0 PROJECT OVERVIEW

The 18.43-acre project site is currently undeveloped and is located east of Dutton Meadows Road and south of Hearn Avenue. The proposed project includes 75 single family dwelling units of between 1,800 and 2,100 square feet with 500 to 700 square feet of accessory dwelling units (in-law studio or one bedroom) and 51 single family dwelling units of between 2,200 and 2,650 square feet.

3.0 ANALYSIS METHODOLGY

Intermittent (short-term construction emissions that occur from activities, such as removal of structures, site-grading, and building construction) and long-term air quality impacts related to the operation of the proposed project were evaluated. The analysis focuses on daily and annual emissions from these construction and operational (mobile, area, stationary, and fugitive sources) activities. This air quality analysis is consistent with the methods described in the Bay Area Air Quality Management District (BAAQMD) *CEQA Air Quality Guidelines* (dated June 2010, updated in May 2011, revised in May 2012, and updated in May 2017).[1] [2] Mitigation measures are presented to reduce impacts to less than significant.

[1] The Air District's June 2010 adopted thresholds of significance were challenged in a lawsuit. Although the BAAQMD's adoption of significance thresholds for air quality analysis has been subject to judicial actions, the lead agency has determined that BAAQMD's Revised Draft Options and Justification Report (October 2009) provide substantial evidence to support the BAAQMD recommended thresholds. Therefore, it has been determined that the BAAQMD recommended thresholds are appropriate for use in this analysis.

[2] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

The air quality analysis includes a review of criteria pollutant[3] emissions such as carbon monoxide (CO)[4], nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC) as reactive organic gases (ROG)[5], particulate matter less than 10 micrometers (coarse or PM_{10}), particulate matter less than 2.5 micrometers (fine or $PM_{2.5}$).[6]

Regulatory models used to estimate air quality impacts include:

- California Air Resources Board's (CARB) EMFAC2014[7]emissions inventory model. EMFAC2014 is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in California. This model reflects CARB's current understanding of how vehicles travel and how much they emit. EMFAC2014 can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future.
- CARB OFFROAD[8] emissions inventory model. OFFROAD is the latest emission inventory model that calculates emission inventories and emission rates for off-road equipment such as loaders, excavators, and off-road haul trucks operating in California. This model reflects CARB's current understanding of how equipment operates and how much they emit. OFFROAD can be used to show how California off-road equipment emissions have changed over time and are projected to change in the future.
- CalEEMod (California Emissions Estimator Model Version 2016.3.2)[9] land use emissions model estimates construction emissions due to demolition and construction activities and operations.

[3] Criteria air pollutants refer to those air pollutants for which the United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) has established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) under the Federal Clean Air Act (CAA).

[4] CO is a non–reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces.

[5] VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. ROG are any reactive compounds of carbon, excluding methane, CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

[6] PM_{10} and $PM_{2.5}$ consists of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.

[7] California Air Resources Board, EMFAC2014 User's Guide, April 30, 2014, http://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol1-users-guide-052015.pdf

[8] California Air Resources Board, OFFROAD Instructions, http://www.arb.ca.gov/msprog/ordiesel/info_1085/oei_write_up.pdf

[9] California Air Resources Board, *California Emissions Estimator Model User's Guide*, November 9, 2017, http://www.caleemod.com/

4.0 EXISTING CONDITIONS

The project site is located within the San Francisco Bay Area Air Basin (Air Basin), which encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties. The Air Basin is characterized by complex terrain which distorts normal wind flow patterns, consisting of coastal mountain ranges, inland valleys, and bays.

Regional Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and San Francisco Bay), determine the effect of air pollutant emissions on local air quality.

The climate of the greater San Francisco Bay Area, including Sonoma County, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is often present over the eastern Pacific Ocean. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, air emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone and secondary particulates, such as sulfates and nitrates.

The Cotati Valley stretches from Santa Rosa to the San Pablo Bay. To the east, the Cotati Valley is bordered by the Sonoma Mountains, with the San Pablo Bay at the southeast end of the valley. To the immediate west are a series of low hills and further west are the Estero Lowlands, which opens to the Pacific Ocean. The region from the Estero Lowlands to the San Pablo Bay is known as the Petaluma Gap. This low-terrain area is a major transport corridor allowing marine air to pass into the Bay Area.

Wind patterns in the Cotati Valley are strongly influenced by the Petaluma Gap. The predominant wind pattern is for marine air to move eastward through the Petaluma Gap, then to split into northward and southward paths as it moves into the Cotati Valley. The southward path crosses the San Pablo Bay and moves eastward through the Carquinez Straits. Consequently, although Santa Rosa and Petaluma are only 16 miles apart, their wind patterns are quite different. Santa Rosa's prevailing winds are from the south and southeast, while Petaluma's prevailing winds are out of the northwest. When the ocean breeze is weak, a bay breeze pattern can also occur, resulting in east winds near the bay. Strong winds from the east occur as part of a larger scale pattern and often carry pollutants picked up along the trajectory through the Central Valley

and the Carquinez Straits. During these periods, wind flows up the valley can carry the polluted air as far north as Santa Rosa.

The Cotati Valley, being slightly north of the Petaluma Gap experiences lower wind speeds than Petaluma. In Santa Rosa, the annual average wind speed is 5.4 mph. During summer afternoons, the fetch across the Petaluma Gap is sufficiently long so that the marine air is warmed and the fog evaporated before it reaches the Cotati Valley. As the surface heating weakens in the late afternoon, the marine layer becomes less heated with distance, and eventually fog is able to form in these valleys. The fog may then persist until late in the morning the next day.

Summer maximum temperatures are in the low 80's, while winter maximum temperatures are in the high 50s to low 60s. Summer minimum temperatures are about 50 degrees and wintertime minimum temperatures are about 40 degrees. Rainfall averages are 30 inches at Santa Rosa. Santa Rosa's rainfall is higher because the air is lifted and cooled in advance of the Sonoma Mountains, thereby causing condensation of the moisture. Santa Rosa receives approximately 80 percent of its annual rainfall from November through March.

Local Air Quality

The BAAQMD maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. The monitoring station closest to the project site is in Sebastopol, approximately five miles to the west of the project site; where levels of ozone, $PM_{2.5}$, CO, and nitrogen dioxide (NO_2) are measured. The monitoring station in Napa measures PM_{10}.

Table 1 summarizes the most recent available three years of data (2014 through 2016) from the Sebastopol and Napa air monitoring station.[10] No State or federal air quality standards were exceeded during the three-year period. Nevertheless, the Bay Area is currently designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for the state PM_{10} standards, and for state and national (annual average and 24-hour) $PM_{2.5}$ standards. The Bay Area is designated "attainment" or "unclassifiable" with respect to the other ambient air quality standards.

[10] Air Quality data is not currently available for 2017. Bay Area Air Quality Management District does not typically publish annual air quality summaries until June of the following year.

Table 1: Air Quality Data Summary (2014 - 2016)

Pollutant	Monitoring Data by Year			
	Standard[a]	2014	2015	2016
Ozone				
Highest 1 Hour Average (ppm)[b]	0.090	0.067	0.068	0.073
Days over State Standard		0	0	0
Highest 8 Hour Average (ppm)[b]	0.070	0.061	0.062	0.064
Days over National Standard		0	0	0
Highest 8 Hour Average (ppm)[b]	0.070	0.061	0.062	0.064
Days over State Standard		0	0	0
Nitrogen Dioxide				
Highest 1 Hour Average (ppm)[b]	0.180/0.100	0.044	0.037	0.032
Days over State Standard		0	0	0
Annual Average (µg/m^3)[b]	0.030/0.053	0.004	0.005	0.004
Carbon Monoxide				
Highest 1 Hour Average (ppm)[b]	9.0	1.4	1.3	1.6
Days over State Standard		0	0	0
Highest 8 Hour Average (ppm)[b]	20	0.09	0.9	1.0
Days over State Standard		0	0	0
Particulate Matter (PM_{10})				
Highest 24 Hour Average (µg/m^3)[b]	50	39	50	33
Days over State Standard		0	0	0
State Annual Average (µg/m^3)[b]	20	15.8	18.6	16.6
Particulate Matter ($PM_{2.5}$)				
Highest 24 Hour Average (µg/m^3)[b]	35	26.2	29.9	18.7
Days over National Standard		0	0	0
State Annual Average (µg/m^3)[b]	12	7.7	6.8	4.6

NOTES: Values in **bold** are in excess of at least one applicable standard.

a. Generally, state standards and national standards are not to be exceeded more than once per year.

b. ppm = parts per million; µg/m^3 = micrograms per cubic meter.

c. PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

Source: Bay Area Air Quality Management District, Annual Air Quality Summaries, http://www.baaqmd.gov/about-air-quality/air-quality-summaries

Community Air Risk Evaluation

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed four percent of the cancer risk-weighted emissions, and benzene contributed three percent. Collectively, five compounds—diesel PM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed

to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.[11]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo.
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward.
- San Jose.
- Eastern side of San Francisco.
- Concord.
- Vallejo.
- Pittsburgh and Antioch.

The proposed project is within Santa Rosa, which is not part of the seven CARE program impacted communities in the Bay Area. The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons. In Santa Rosa, including the project site, the health impact is approximately 96 cancer risk per million persons.[12]

[11] Bay Area Air Quality Management District, *Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013)*, April 2014, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en

[12] Bay Area Air Quality Management District, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en

Addressing Sources of Air Pollutants in Community Planning

In May of 2016, the BAAQMD published *Planning Health Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*.[13] The BAAQMD's primary goal in providing the *Guidebook* is to support and promote infill development; which is important to reducing vehicle miles traveled and the associated air emissions, while minimizing air pollution exposure for existing and future residents. The *Guidebook* provides developers and planners with the information and tools needed to create health-protective communities.

The *Guidebook* recommends Best Practices to Reduce Emissions and Reduce Exposure to Local Air Pollution. Implementing as many Best Practices to Reduce Emissions as is feasible will reduce potential health risks to the greatest extent. The *Guidebook* also lists examples of a variety of strategies to reduce exposure to, and emissions of, air pollution, including the adoption of air quality-specific ordinances, standard conditions of approval, and incorporation of policies into general plans and other planning documents. The BAAQMD recommends implementing all best practices to reduce exposure that are feasible and applicable to a project in areas that are likely to experience elevated levels of air pollution. To reduce exposure to pollutants, the *Guidebook* recommends practices like installing indoor air filtration systems, planting dense vegetation, implementing project design which provides a buffer between sensitive receptors and emission source, and developing alternative truck routes.

5.0 IMPACT ANALYSIS AND MITIGATION

The air quality analysis includes a review of pollutant emissions such as CO, NO_x, SO_2, VOC as ROG, PM_{10}, and $PM_{2.5}$. The HRA addresses the DPM emissions from on-site construction equipment and haul trucks associated with the proposed project and cumulative impacts from nearby emission sources.

Threshold of Significance

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G, and the BAAQMD *CEQA Air Quality Guidelines*. Using Appendix G evaluation thresholds, the proposed project would be considered to have significant air quality impacts if it were to:

A. Conflict with or obstruct implementation of the applicable air quality plan;

[13] Bay Area Air Quality Management District, *Planning Health Places: A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, January 2016, http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/draft_planninghealthyplaces_marchworkshop-pdf.pdf?la=en

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

C. Expose sensitive receptors to substantial pollutant concentrations;

D. Create objectionable odors affecting a substantial number of people; or

E. Result in a cumulatively considerable net increase of any nonattainment pollutant, and/or health impacts (including releasing emissions that exceed quantitative thresholds for ozone precursors).

The thresholds and methodologies from the BAAQMD's *CEQA Air Quality Guidelines* were used to evaluate the potential impacts of construction and operation of the proposed project. The thresholds of significance applied to assess project-level air quality impacts are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10};
- Average daily operation emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10};
- Exposure of persons by siting a new source or a new sensitive receptor to substantial levels of TAC resulting in (a) a cancer risk level greater than 10 in one million, (b) a noncancerous risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers; or
- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.

Assessment of a significant cumulative impact if it would result in:

- Exposure of persons, by siting a new source or a new sensitive receptor, to substantial levels of TAC during either construction or operation resulting in (a) a cancer risk level greater than 100 in a million, (b) a noncancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average $PM_{2.5}$ of greater than 0.8 $\mu g/m^3$.

The BAAQMD air quality significance thresholds are found in **Table 2**.

The BAAQMD *CEQA Air Quality Guidelines* identify a project-specific threshold of either 1,100 metric tons of carbon dioxide equivalents (CO_2e) per year or 4.6 metric tons of CO_2e per year per service population (i.e., the number of residences associated with a new development), which is

also considered a cumulatively considerable contribution to the global GHG burden and, therefore, a significant cumulative impact.

Table 2: BAAQMD Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Daily Operational Thresholds	Annual Operational Thresholds
Criteria Air Pollutants			
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust only)	82	15
PM2.5	54 (exhaust only)	54	10
CO	NA	9.0 ppm (8-hour) and 20.0 ppm (1-hour)	
Fugitive Dust	Best Management Practices	NA	
Project Health Risk and Hazards			
Excess Cancer Risk	10 per million	10 per million	
Chronic Hazard Index	1.0	1.0	
Acute Hazard Index	1.0	1.0	
Incremental Annual Average PM2.5	0.3 µg/m^3	0.3 µg/m^3	
Cumulative Health Risk and Hazards			
Excess Cancer Risk	100 per million	100 per million	
Chronic Hazard Index	10.0	10.0	
Acute Hazard Index	10.0	10.0	
Incremental Annual Average PM2.5	0.8 µg/m^3	0.8 µg/m^3	
Greenhouse Gas Emissions			
Annual Emissions	1,100 metric tons or 4.6 metric tons per capita		

SOURCE: BAAQMD Adopted Air Quality CEQA Thresholds of Significance - June 2, 2010, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Summary_Table_Proposed_BAAQMD_CEQA_Thresholds_May_3_2010.ashx?la=en

5.1 Consistency with Clean Air Plan

The BAAQMD adopted its 2010 Bay Area Clean Air Plan (CAP)[14] in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and GHG emissions in a single, integrated plan; and establish emission control measures to be adopted or implemented

[14] Bay Area Air Quality Management District, *Bay Area 2010 Clean Air Plan*, September 15, 2010, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans

in the 2010 through 2012 timeframe.[15] The primary goals of the 2010 Bay Area Clean Air Plan are to:

- Attain air quality standards;
- Reduce population exposure and protecting public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

On January 10 of 2017, the BAAQMD released the Draft 2017 Clean Air Plan.[16] The 2017 Clean Air Plan was adopted in April of 2017.[17] The 2017 Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS) provides a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. The CAP/RCPS includes the Bay Area's first-ever comprehensive RCPS, which identifies potential rules, control measures, and strategies that the BAAQMD can pursue to reduce GHG in the Bay Area. Measures of the 2017 Clean Air Plan addressing the transportation sector are in direct support of Plan Bay Area, which includes the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan. Highlights of the 2017 Clean Air Plan control strategy include:

- Limit Combustion: Develop a region-wide strategy to improve fossil fuel combustion efficiency at industrial facilities, beginning with the three largest sources of industrial emissions: oil refineries, power plants, and cement plants.
- Stop Methane Leaks: Reduce methane emissions from landfills, and oil and natural gas production and distribution.
- Reduce Exposure to Toxics: Reduce emissions of toxic air contaminants by adopting more stringent limits and methods for evaluating toxic risks at existing and new facilities.
- Put a Price on Driving: Implement pricing measures to reduce travel demand.
- Advance Electric Vehicles: Accelerate the widespread adoption of electric vehicles.

[15] In 2015, the BAAQMD initiated an update to the 2010 CAP. On February 28, 2014, the District held a public meeting to report progress on implementing the control measures in the 2010 CAP, to solicit ideas and strategies to further reduce ozone precursors, particulate matter, toxic air contaminants, and greenhouse gases, and to seek input on innovative strategies to reduce greenhouse gases, mechanisms for tracking progress in reducing GHG, and how the District may further support actions to reduce GHG. The culmination of this effort will be an updated CAP.

[16] Bay Area Air Quality Management District, *Draft 2017 Clean Air Plan*, January 10, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/baaqmd_2017_cap_draft_122816-pdf.pdf?la=en

[17] Bay Area Air Quality Management District, *Final 2017 Clean Air Plan*, April 19, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en

- Promote Clean Fuels: Promote the use of clean fuels and low or zero carbon technologies in trucks and heavy-duty vehicles.
- Accelerate Low Carbon Buildings: Expand the production of low-carbon, renewable energy by promoting on-site technologies such as rooftop solar and ground-source heat pumps.
- Support More Energy Choices: Support of community choice energy programs throughout the Bay Area.
- Make Buildings More Efficient: Promote energy efficiency in both new and existing buildings.
- Make Space and Water Heating Cleaner: Promote the switch from natural gas to electricity for space and water heating in Bay Area buildings.

When a public agency contemplates approving a project where an air quality plan consistency determination is required, BAAQMD recommends that the agency analyze the project with respect to the following questions: (1) Does the project support the primary goals of the air quality plan; (2) Does the project include applicable control measures from the air quality plan; and (3) Does the project disrupt or hinder implementation of any 2017 Clean Air Plan control measures? If the first two questions are concluded in the affirmative and the third question concluded in the negative, the BAAQMD considers the project consistent with air quality plans prepared for the Bay Area.

Any project that would not support the 2017 Clean Air Plan goals would not be considered consistent with the 2017 Clean Air Plan. The recommended measure for determining project support of these goals is consistency with BAAQMD CEQA thresholds of significance. As presented in the subsequent impact discussions, the proposed project would not exceed the BAAQMD significance thresholds; therefore, the proposed project would support the primary goals of the 2017 Clean Air Plan.

The proposed project with mitigation measures would support the primary goals of the 2017 Clean Air Plan, it would be consistent with all applicable 2017 Clean Air Plan control measures, and would not disrupt or hinder implementation of any 2017 Clean Air Plan control measures. Therefore, there would be a less-than-significant impact with mitigation associated with, conflicting with, or obstructing implementation of the applicable air quality plan.

5.2 Construction Impacts

Intermittent (short-term construction emissions that occur from activities, such as site-grading, paving, and building construction) and long-term air quality impacts related to the operation of the proposed project were evaluated. The analysis focuses on daily emissions from these

construction and operational (mobile, area, stationary, and fugitive sources) activities. The CARB CalEEMod, Version 2016.3.2[18] was used to quantify construction-related pollutant emissions. CalEEMod output worksheets are included in **Attachment A: CalEEMod Output Files**. The emissions generated from these construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) such as material handling and travel on unpaved surfaces;
- Combustion exhaust emissions of criteria air pollutants (ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$) primarily from operation of heavy off-road construction equipment, haul trucks, (primarily diesel-operated), and construction worker automobile trips (primarily gasoline-operated); and
- VOCs from architectural coating.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. High winds (greater than 10 miles per hour) occur infrequently in the area, less than two percent of the time. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Erosion control measures and water programs are typically undertaken to minimize these fugitive dust and particulate emissions. A dust control efficiency of over 50 percent due to daily watering and other measures (e.g., limiting vehicle speed to 15 mph, management of stockpiles, screening process controls, etc.) was estimated. Based on CalEEMod, one water application per day reduces fugitive dust by 34 percent, two water applications per day reduces fugitive dust by 55 percent, and three water applications per day reduces fugitive dust by 61 percent.

Construction activities are expected to occur from January of 2019 through December of 2020. There are existing pavement and buildings (approximately 2,500 square feet) which would be removed and/or demolished, resulting in 11 haul truck trips. **Table 3** provides the estimated construction schedule for each phase: demolition, site preparation, grading, building construction, paving, and architectural coating. Site preparation would consist of land clearing and grading and would not likely include any import or export of soil materials. Typically,

[18] California Air Resources Board, *California Emissions Estimator Model User's Guide*, November 9, 2017, http://www.caleemod.com/

construction activities would occur between 8 a.m. and 5 p.m. (ten hours per day), on Monday through Friday with some Saturday activities.

Table 3: Estimated Construction Schedule

Phase	Description	Start	End	Working Days
1	Demolition	01/25/2019	01/30/2019	5
2	Site Preparation	02/01/2019	02/12/2019	10
3	Grading	02/13/2019	03/14/2019	30
4	Building Construction	04/01/2019	11/20/2020	600
5	Paving	05/01/2019	08/13/2020	75
6	Architectural Coating	11/01/2020	11/27/2020	20
7	Utilities	03/15/2019	05/16/2019	45
8	Improvements	07/15/2019	08/23/2019	30

SOURCE: CARB CalEEMod Version 2016.3.2.

The estimated construction equipment associated with the proposed project along with the number of pieces of equipment, daily hours of operation, horsepower (hp), and load factor (i.e., percent of full throttle) are shown in **Table 4**.

Table 4: Estimated Construction Equipment Usage

Phase	Equipment	Amount	Daily Hours	HP	Load Factor
Demolition	Concrete/Industrial Saws	1	8	81	0.73
Demolition	Excavators	3	8	158	0.38
Demolition	Rubber Tired Dozers	2	8	247	0.40
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	2	8	158	0.38
Grading	Graders	1	8	187	0.41
Grading	Rubber Tired Dozers	1	8	247	0.40
Grading	Scrapers	2	8	367	0.48
Grading	Tractors/Loaders/Backhoes	2	7	97	0.37
Building Construction	Cranes	1	7	231	0.29
Building Construction	Forklifts	3	8	89	0.20
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
Paving	Paving Equipment	2	8	132	0.36
Paving	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

Utilities	Trenchers	2	8	78	0.50
Improvement	Rubber Tired Dozers	3	8	247	0.40
Improvement	Tractors/Loaders/Backhoes	4	8	97	0.37

SOURCE: CARB CalEEMod Version 2016.3.2.

Table 5 provides the estimated short-term construction emissions that would be associated with the proposed project and compares those emissions to the BAAQMD's significance thresholds for construction exhaust emissions. As the construction phases (i.e., grading, building construction, paving, etc.) are sequential, the average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds. All construction-related emissions would be below the BAAQMD significance thresholds.

Table 5: Estimated Annual Average Daily Construction Emissions (pounds)

Condition	ROG	NOx	PM10	PM2.5	CO
	Unmitigated				
Construction Period	**7.90**	**22.4**	**1.22**	**1.14**	**18.3**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No
	Mitigated				
Construction Period	**6.33**	**15.2**	**0.43**	**0.43**	**19.4**
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No

SOURCE: CARB CalEEMod Version 2016.3.2.

Based on the CalEEMod for proposed project construction and using standard fuel consumption estimates, construction activities would require 66,770 gallons of diesel fuel.[19] This includes all off-road construction equipment, hauling, vendor, and worker trips over a 435-working day construction period. For the finishing phase of construction, some electricity may be used (e.g., for power tools and work lighting). While this electricity usage cannot be quantified at this time, it is anticipated to be relatively minor compared to normal building operations. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Natural gas would not be used during construction.

[19] Fuel usage is estimated using the CalEEMod output for CO_2, and a $kgCO_2$/gallon conversion factor, as cited in the U.S. Energy Information Administration Voluntary Reporting of Greenhouse Gases Program, https://www.epa.gov/sites/production/files/2015-11/documents/emission-factors_2011.pdf

5.3 Operational Impacts

CalEEMod was also used to estimate emissions that would be associated with motor vehicle use, space and water heating, and landscape maintenance emissions expected to occur after the proposed project construction is complete and operational. The proposed project land use types and size and other project-specific information were input to the model. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in **Attachment A: CalEEMod Output Files**.

A daily weekday vehicle trip generation rate of 9.52 per dwelling unit (or 1,200 daily weekday trips) was estimated by CalEEMod. The estimated annual vehicle miles traveled would be 2,268,966 miles, which would result in consumption of approximately 112,000 gallons of gasoline. The default trip lengths and trip types specified by CalEEMod for Sonoma County were used.

Annual electricity and natural gas consumption were calculated using the demand factors provided in CalEEMod. The proposed project's energy consumption was estimated to be approximately 978,000 kilowatt-hours of electricity per year and natural gas consumption was estimated to be approximately 2.75 billion British Thermal Units per year.

Estimated daily and annual operational emissions that would be associated with the proposed project are presented in **Tables 6 and 7** and are compared to BAAQMD's thresholds of significance. As indicated in **Tables 6 and 7**, the estimated proposed project operational emissions would be below the BAAQMD's significance thresholds and would be less than significant.

Table 6: Estimated Daily Operational Emissions (pounds)

Condition	ROG	NOx	PM10	PM2.5	CO
	Summer				
Area	8.27	0.12	0.06	0.06	10.4
Energy	0.08	0.69	0.06	0.06	0.30
Mobile	2.43	10.0	2.14	1.42	22.5
Total Proposed Project	**10.8**	**10.8**	**5.25**	**1.54**	**33.2**
Significance Threshold	54	54	82	54	---
Significant Impact?	No	No	No	No	No
	Winter				
Area	8.27	0.12	0.06	0.06	10.4
Energy	0.08	0.69	0.06	0.06	0.30
Mobile	2.15	10.5	5.14	1.42	23.7
Total Proposed Project	**10.5**	**11.4**	**5.26**	**1.54**	**34.4**
Significance Threshold	54	54	82	54	---

Significant Impact?	No	No	No	No	No

SOURCE: CARB CalEEMod Version 2016.3.2.

Table 7: Estimated Annual Operational Emissions (tons)

Condition	ROG	NOx	PM10	PM2.5	CO
Area	1.48	0.01	0.01	0.01	0.94
Energy	0.02	0.13	0.01	0.01	0.05
Mobile	0.37	1.79	0.85	0.24	3.88
Total Proposed Project	**1.87**	**1.92**	**0.87**	**0.26**	**4.87**
Significance Threshold	10	10	15	10	---
Significant (Yes or No)?	No	No	No	No	No

SOURCE: CARB CalEEMod Version 2016.3.2.

5.4 Cumulative Impacts

As shown, project-related emissions would be less than the BAAQMD significance thresholds. The BAAQMD *CEQA Air Quality Guidelines* recommend that cumulative air quality effects from criteria air pollutants also be addressed by comparison to the mass daily and annual thresholds. These thresholds were developed to identify a cumulatively considerable contribution to a significant regional air quality impact. Project-related emissions would be below the significance thresholds. Therefore, the proposed project would not be cumulatively considerable and cumulative impacts would be less than significant.

5.5 Health Impacts

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to the BAAQMD, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

The proposed project would constitute a new emission source of DPM and $PM_{2.5}$ due to its construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. The adjacent properties within 1,000 feet of the proposed project include single family residences to the north and south and Meadow View Elementary School to the west of the project site.

During construction, onsite activities would result in the emission of exhaust from vehicles and heavy duty equipment as well as the generation of fugitive dust from grading and ground disturbing activities. The project is not expected to result in significant construction-related emissions that could expose sensitive receptors to substantial pollutant concentrations. Nonetheless, implementation of **Master EIR Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 and Mitigation Measures AQ-1 through AQ-3** would further reduce fugitive dust and combustion exhaust through the application of best management practices during construction.

Construction activity could occur in areas adjacent to existing or future residences and in close proximity to Meadow View Elementary School. Given the close proximity of sensitive receptors to construction activities, emission levels may be occasionally be elevated. Implementation of **Master EIR Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4 and Mitigation Measures AQ-1 through AQ-3** would be implemented during construction. Therefore, the project's health impacts, to nearby sensitive receptors, generated by construction activities would be reduced to less than significant.

At operation, the proposed residential development would not generate substantial air quality emissions that would affect sensitive receptors in the vicinity of the project site. As a residential land use, air quality emissions generated by the proposed project would be minimal and similar in scale to the surrounding existing uses. Secondly, the proposed project would not locate sensitive receptors within 1,000 feet of existing permitted stationary sources or major roadways such as US 101 as well as rail activities.[20] Therefore, health impacts due to excessive pollutant concentrations would be less than significant.

[20] In June of 2010, the Air District's adopted thresholds of significance were challenged in a lawsuit (California Building Industry Association v Bay Area Air Quality Management District). On December 15, 2015, the California Supreme Court (S213478) concluded that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. The Supreme Court also indicated that nothing in CEQA prevents local agencies from considering the impact of locating new development in areas subject to existing environmental hazards. However, the Court of Appeal explained CEQA cannot be used by a lead agency to require a developer or other agency to obtain an EIR or implement mitigation measures solely because the occupants or users of a new project would be subjected to the levels of emissions specified, an agency may do so voluntarily on its own

5.6 Odor Impacts

Though offensive odors from stationary and mobile sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the proposed project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people.

Odor impacts could also result from siting a new sensitive receptor near an existing odor source. Examples of land uses that have the potential to generate considerable odors include, but are not limited to wastewater treatment plants; landfills; refineries; and chemical plants.

In the BAAQMD *CEQA Air Quality Guidelines*, odor screening distances were recommended by BAAQMD for a variety of land uses. Projects that would site a new receptor farther than the applicable screening distance from an existing odor source would not likely result in a significant odor impact. The odor screening distances are not used as absolute screening criteria, rather as information to consider along with the odor parameters and complaint history. The odor screening distances for a sewage treatment plant, refinery, and chemical plant are two miles. The proposed project is not within the odor screening distances for a sewage treatment plant, refinery, or other odor producing sources.

Generally, odor emissions are highly dispersive, especially in areas with higher average wind speeds. However, odors disperse less quickly during inversions or during calm conditions, which hamper vertical mixing and dispersion. Therefore, odor impacts associated with the location of the proposed project would be less than significant.

6.0 GREENHOUSE GAS ANALYSIS

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last

project and may use the BAAQMD guidance. Therefore, an analysis of the health impacts from existing sources on the proposed receptors is presented within this document.

100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHG naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHG occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHG than CO_2, with GWP of 25 and 310 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO_2 equivalent (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWP than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e.

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations of CO_2). In pre-industrial times (c. 1860), concentrations of atmospheric CO_2 were approximately 280 parts per million (ppm). By February 2018, atmospheric CO_2 concentrations had increased to 408 ppm, by over 46 percent above pre-industrial concentrations.[21] There is international scientific consensus that human-caused increases in GHG have contributed and will continue to contribute to global warming.

There is international scientific consensus that human-caused increases in GHG have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.[22]

Santa Rosa General Plan

The Santa Rosa General Plan 2035 addresses issues related to the physical development and growth of Santa Rosa. It represents a community's aspirations for the future. The General Plan is required by State law, and it has a long range focus, looking 20 years into the future. It guides the City's planning and zoning functions as well as the funding of public improvement projects, such as parks and streets. Santa Rosa's General Plan was adopted by the City Council on November 3, 2009[23] and contains the goals, policies, and programs related to air quality and climate change: General Plan policies addressing land use patterns, connections between different land uses, use of energy sources, alternative transportation modes, preservation of open spaces, and construction dust abatement all contribute to the reduction of air pollutants within Santa Rosa. The following are policies and programs within the General Plan which are designed to improve air quality within Santa Rosa:

[21] Earth System Research Laboratory, *Recent Monthly Mean CO_2 at Mauna Lora*, www.esrl.noaa.gov/gmd/ccgg/trends/

[22] California Environmental Protection Agency, *2006 Final Climate Action Team Report to the Governor and Legislature*, March 2006, http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF.

[23] City of Santa Rosa, *Santa Rosa General Plan 2035*, November 3, 2009, https://srcity.org/392/General-Plan

1) Take appropriate actions to help Santa Rosa and the larger Bay Area region achieve and maintain all ambient air quality standards.

2) Review all new construction projects and require dust abatement actions as contained in the BAAQMD *CEQA Air Quality Handbook*.

3) Budget for clean fuels and vehicles in the city's long-range capital expenditure plans, to replace and improve the existing fleet of gasoline and diesel powered vehicles. Initiate a policy to make its fleet among the cleanest in the North Bay by:

   - Purchasing electric vehicles wherever possible, and especially for stop-and-go units such as parking meter readers.
   - Purchasing electric or hybrid electric fleet vehicles for general staff use, especially for building inspectors and other uses primarily within the city.
   - Purchasing alternative fuel vehicles, such as natural gas, as the existing diesel-powered fleet is replaced. Alternatively, purchase diesel vehicles only if they meet or exceed emission specifications for available natural gas fuel vehicles.
   - Purchasing biodiesel fuel for use by the city diesel truck fleet.
   - As possible, use lo-NOx fuel additives, such as Purinox, in all diesel vehicles.

4) Reduce particulate matter emissions from wood burning appliances through implementation of Santa Rosa's Wood Burning Appliance Code.

5) Meet local, regional and state targets for reduction of GHG emissions through implementation of the Climate Action Plan.

Santa Rosa Climate Change Action Plan

The Santa Rosa Climate Action Plan and the General Plan 2035 work in conjunction to facilitate GHG emissions reductions. These plans acknowledges the environmental leadership Santa Rosa has achieved and supports the responsibility of continued GHG emissions reductions. Measures, policies and projects that reduce community-wide GHG are aligned with the goals and policies in the General Plan. In addition, the General Plan provides the basis for analyzing proposed development to determine consistency with the CAP goals and measures. The measures presented in the Climate Action Plan are referenced generally throughout the General Plan.

The City of Santa Rosa has adopted local regulations to address GHG emissions. On December 4, 2001 the Santa Rosa City Council adopted a resolution to become a member of Cities for Climate Protection, a project of the International Council on Local Environmental Initiatives. On August 2, 2005, the Santa Rosa City Council adopted Council Resolution Number 26341, which established a municipal GHG reduction target of 20 percent from 2000 levels by 2010 and

facilitates the community-wide greenhouse gas reduction target of 25 percent from 1990 levels by 2015. In October 2008, the Sonoma County Community Climate Action Plan was released, which formalized countywide GHG reduction goals. On June 5, 2012, the City of Santa Rosa adopted its own Climate Action Plan, which meets the programmatic threshold for a Qualified GHG Reduction Strategy, established by the BAAQMD guidelines.

On August 6, 2013, the City of Santa Rosa adopted the Santa Rosa Climate Action Plan. The Santa Rosa Climate Action Plan is considered a Qualified GHG Reduction Strategy because it contains a baseline inventory of GHG emissions from all sources, sets forth GHG emission reduction targets that are consistent with the goals of AB 32, and identifies enforceable GHG emission reduction strategies and performance measures. Accordingly, the proposed project is analyzed for consistency with the Santa Rosa Climate Action Plan in order to assess level of significance for GHG emissions.[24] **Attachment B Climate Action Plan New Development Checklist** contains the Climate Action Plan New Development Checklist for the proposed project.

California Green Building Standards Code

California Code of Regulations Title 24, Part 6 and Part 11 (California Green Building Standards Code)[25], which relate to energy and green building and commonly referred to as CALGreen, is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CALGreen contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. CALGreen provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. CALGreen also requires building commissioning, which is a process for verifying that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency. The following provides examples of CALGreen requirements:

- **Designated parking.** Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles.
- **Recycling by Occupants.** Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling.
- **Construction waste.** A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and-75 percent for new homes and 80-

[24] City of Santa Rosa. *Climate Action Plan*, June 5, 2012, https://srcity.org/1634/Climate-Action-Planning
[25] California Code of Regulations Title 24, Part 11, http://www.bsc.ca.gov/Home/CALGreen.aspx

percent for commercial projects. All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled.

- **Wastewater reduction.** Each building shall reduce the generation of wastewater by installation of water-conserving fixtures or using nonpotable water systems.
- **Water use savings.** 20-percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40-percent reductions.
- **Water meters.** Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day.
- **Irrigation efficiency.** Moisture-sensing irrigation systems for larger landscaped areas.
- **Materials pollution control.** Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard.
- **Building commissioning.** Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the CalEPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon

investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program. On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board, along with the finalized environmental documents.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders "All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets." The Executive Order also states that "CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent." The CARB is currently moving forward with a second update to the Climate Change Scoping Plan to reflect the 2030 reduction target. The updated Scoping Plan will provide a framework for achieving the 2030 target. In September of 2016, the AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined as SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

Greenhouse Gas Regional Emission Estimates

Worldwide emissions of GHG in 2011 were 45.7 billion tons of CO_2e per year.[26] This value includes ongoing emissions from industrial and agricultural sources, but excludes emissions from land use changes.

In 2014, the United States emitted about 6.87 billion tons of CO_2e per year or about 21.5 tons per person per year. Of the five major sectors nationwide — residential and commercial, industrial, agriculture, transportation, and electricity— electricity accounts for the highest fraction of GHG

[26] Climate Analysis Indicator Tool, http://cait.wri.org/

emissions (approximately 30 percent), closely followed by transportation (approximately 26 percent); these emissions from energy are primarily generated from the combustion of fossil fuels (approximately 82 percent), and emissions from transportation are entirely generated from direct fossil fuel combustion.[27] United States emissions increased by three percent from 2013 to 2014. Recent trends can be attributed to multiple factors including increased emissions from electricity generation, an increase in miles traveled by on-road vehicles, an increase in industrial production and emissions in multiple sectors, and year-to-year changes in the prevailing weather.

In 2015, California emitted approximately 440.4 million tons of CO_2e. This represents approcimately 6.9 percent of total U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. California's gross emissions of GHG decreased by 5.6 percent from 466.3 million metric tons of CO_2e in 2000 to 441.5 million metric tons in 2014, with a maximum of 492.7 million metric tons in 2004.

By contrast, at 11.4 tons per person per year, California has one of the lowest per capita GHG emission rates in the country.[28] This is in part due to the success of the state's energy efficiency and renewable energy programs and commitments that have lowered the GHG emissions rate of growth by more than half of what it would have been otherwise.[29] Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The CARB inventory also reports that the composition of gross climate change pollutant emissions in California (expressed as CO_2e) were as follows:

- CO_2 accounted for 84.0 percent;
- CH_4 accounted for 9.0 percent;
- N_2O accounted for 2.7 percent; and
- Fluorinated gases (HFCs, PFC, and SF_6) accounted for 4.3 percent.

Of these gases, CARB found that transportation is the source of approximately 39 percent of the state's GHG emissions, followed by industrial sources at 23 percent and electricity generation (both in-state and out-of-state) at 19 percent. Agriculture is the source of approximately 8 percent, and residential activity is the source of about 6 percent, followed by commercial activities at 5 percent.[30]

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[27] United States Environmental Protections Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014*, www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014

[28] California Air Resources Board, *Emissions Trends Report*, June 6, 2017, www.arb.ca.gov/cc/inventory/data/data.htm

[29] California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, October 2006, http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-D.PDF

[30] California Air Resources Board, *Emissions Trends Report*, June 6 2017, www.arb.ca.gov/cc/inventory/data/data.htm

In the San Francisco Bay Area, the GHG emissions inventory prepared by the BAAQMD; indicates that the transportation sector and industrial/commercial sector represent the largest sources of GHG emissions, accounting for 39.7 percent and 35.7 percent, respectively, of the Bay Area's 86.6 million tons of CO_2e in 2011. Electricity/co-generation sources account for approximately 14 percent of the Bay Area's GHG emissions, followed by residential fuel usage at approximately 7.7 percent. Off-road equipment sources currently account for approximately 1.5 percent of total Bay Area GHG emissions.[31]

The Santa Rosa community-wide inventory includes GHG emissions from activities such as electricity use, natural gas use, on-road transportation, solid waste disposal, water and wastewater, off-road equipment, agriculture, and stationary sources. The results of the baseline inventory estimate that the City generated 1,349,690 metric tons of CO_2e for the year 2007. Transportation emissions represent the largest sources of community emissions (approximately 51 percent). Building energy is often one of the largest sources of GHG emissions in community inventories and includes energy consumed for heating, cooling, lighting, and cooking in the residential, commercial, and industrial sectors. Building energy from residential units is 19 percent of the total community GHG emissions and building energy from non-residential units is 16 percent of the total community GHG emissions.[32]

Thresholds of Significance

The BAAQMD has established separate thresholds of significance for operational GHG emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). As no threshold has been established for construction-related emissions, the operational emissions thresholds apply. The threshold for stationary sources is 10,000 metric tons of CO_2e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO_2e per year; known as a bright line threshold (i.e., emissions above this level may be considered significant); or

[31] Bay Area Air Quality Management District, *Bay Area Emissions Inventory*, Adopted June 2011, Updated January 2015, http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf

[32] City of Santa Rosa. *Climate Action Plan*, June 5, 2012, https://srcity.org/1634/Climate-Action-Planning

- 4.6 metric tons of CO_2e per service population per year; known as an efficiency threshold (i.e., emissions above this level may be considered significant). Service population is the sum of residents/students/employees expected for a development project.

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from onsite combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced offsite from energy production and water conveyance due to a project's energy use and water consumption.

6.1 Greenhouse Gas Emissions

CalEEMod was used to quantify GHG emissions associated with construction activities, as well as long-term operational emissions produced by motor vehicles, natural gas combustion for space and water heating, electricity use, and landscape maintenance equipment. CalEEMod incorporates GHG emission factors for the central electric utility serving the Bay Area and mitigation measures based on the California Air Pollution Control Officer's Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures*[33] and the *California Climate Action Registry General Reporting Protocol*[34].

CalEEMod incorporates GHG emission factors for the central electric utility serving the Bay Area. Default rates for energy consumption were assumed in the model. Emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric utility's projected CO_2 intensity rate. This projected CO_2 intensity rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641 pounds of CO_2 per megawatt of electricity produced. The projected CO_2 intensity rate of 290 pounds of CO_2 per megawatt of electricity produced for 2021 (the first year of project operations) was used.[35]

The proposed project's estimated construction and operational GHG emissions are presented in **Table 8**. The estimated construction GHG emissions are 678 metric tons of CO_2e in 2019 and 485 metric tons of CO_2e in 2020. As indicated, 30-year amortized annual construction related GHG emissions would be 38.8 metric tons of CO_2e. There is no BAAQMD CEQA significance threshold for construction-related GHG emissions. The GHG construction and operational emissions would

[33] California Air Pollution Control Officer's Association *Quantifying Greenhouse Gas Mitigation Measures*, August 2010, http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

[34] California Climate Action Registry General Reporting Protocol, April 2008, http://www.climateactionreserve.org/wp-content/uploads/videos/GRP_V3_April%202008_FINAL.pdf

[35] PG&E, *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*, November 2015, http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

be 1,409 metric tons per year, which is above the BAAQMD bright line threshold of 1,100 metric tons. The GHG construction and operational emissions would be 3.9 metric tons per service population (approximately 360 residents) per year, which is below the BAAQMD efficiency threshold of 4.6 metric tons per service population. A project is less than significant if the GHG emissions are less than either the bright line threshold or the efficiency threshold. Thus, the proposed project impacts on climate change would be less than significant. Project design elements such as Title 24 and Cal Green compliant results in an approximately 18 percent reduction in GHG emissions.

Table 8: Estimated Greenhouse Gas Emissions (metric tons)

Source	Annual CO2e Metric Tons
Construction (30-year amortized)	1,163 (38.8)
Operations	
Area Sources	1.57
Energy	278
Mobile	998
Solid Waste	76.2
Water	15.9
Total Construction and Operational Emissions	**1,409**
BAAQMD Bright line Threshold	1,100
Potentially Significant?	Yes
Total Construction and Operational Emissions (Service Population)	3.9
BAAQMD Efficiency Threshold	4.6
Potentially Significant?	No

SOURCE: CARB CalEEMod Version 2016.3.2.

6.2 Consistency with Assembly Bill 32

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the

AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020. In September of 2016, AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

The City of Santa Rosa adopted the Climate Action Plan in 2012.[36] The Climate Action Plan will be a roadmap for how the County will reduce energy consumption and GHG emissions to meet State GHG emissions targets (AB 32). The principal State plan and policy adopted for the purpose of reducing GHG emissions is AB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. Statewide plans and regulations such as GHG emissions standards for vehicles and the low carbon fuel standard are being implemented at the statewide level, and compliance at the specific plan or project level is not addressed. The assumption is that AB 32 will be successful in reducing GHG emissions and reducing the cumulative GHG emissions statewide by 2020. The State has taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG. Therefore, the proposed project would result in a significant impact if it would be in conflict with AB 32 State goals. The proposed project has been reviewed relative to the AB 32 measures and it has been determined that the proposed project would not conflict with the goals of AB 32.

[36] City of Santa Rosa. *Climate Action Plan*, June 5, 2012, https://srcity.org/1634/Climate-Action-Planning

Attachment A

Construction and Operational Emissions

CalEEMod Output Files

- Annual
- Summer
- Winter

Attachment B

Climate Action Plan New Development Checklist

To ensure new development projects are compliant with Santa Rosa's Climate Action Plan, the following checklist has been developed. This checklist is required to be filled out for each new project, subject to discretionary review, to allow new development to find a less than significant impact for greenhouse gas emissions in the environmental review process.

Policy #	Description	Complies	Does Not Apply
1.1.1	Comply with CALGreen Tier 1 standards*	√	
1.1.3	After 2020, all new development will utilize zero net electricity*		√
1.3.1	Install real-time energy monitors to track energy use*	√	
1.4.2	Comply with the City's tree preservation ordinance*	√	
1.4.3	Provide public & private trees in compliance with the Zoning Code*	√	
1.5	Install new sidewalks and paving with high solar reflectivity materials*	√	
2.1.3	Pre-wire and pre-plumb for solar thermal or PV systems	√	
3.1.2	Support implementation of station plans and corridor plans	√	
3.2.1	Provide on-site services such as ATMs or dry cleaning to site users		√
3.2.2	Improve non-vehicular network to promote walking, biking	√	
3.2.3	Support mixed-use, higher-density development near services	√	
3.3.1	Provide affordable housing near transit	√	
3.5.1	Unbundle parking from property cost		√
3.6.1	Install calming features to improve pedestrian/bike experience	√	
4.1.1	Implement the Bicycle and Pedestrian Master Plan	√	
4.1.2	Install bicycle parking consistent with regulations*	√	
4.1.3	Provide bicycle safety training to residents, employees, motorists		√
4.2.2	Provide safe spaces to wait for bus arrival	√	

Policy #	Description	Complies	Does Not Comply
4.3.2	Work with large employers to provide rideshare programs		√
4.3.3	Consider expanding employee programs promoting transit use		√
4.3.4	Provide awards for employee use of alternative commute options		√
4.3.5	Encourage new employers of 50+ to provide subsidized transit passes*		√
4.3.7	Provide space for additional park-and-ride lots		√
4.5.1	Include facilities for employees that promote telecommuting		√
5.1.2	Install electric vehicle charging equipment		√
5.2.1	Provide alternative fuels at new refueling stations*		√
6.1.3	Increase diversion of construction waste*	√	
7.1.1	Reduce potable water use for outdoor landscaping*	√	
7.1.3	Use water meters which track real-time water use*	√	
7.3.2	Meet on-site meter separation requirements in locations with current or future recycled water capabilities*		√
8.1.3	Establish community gardens and urban farms		√
9.1.2	Provide outdoor electrical outlets for charging lawn equipment	√	
9.1.3	Install low water use landscapes*	√	
9.2.1	Minimize construction equipment idling time to five minutes or less*	√	
9.2.2	Maintain construction equipment per manufacturer's specs*	√	
9.2.3	Limit GHG construction equipment emissions by using electrified equipment or alternative fuels*	√	

**To be in compliance with the Climate Action Plan, all measures denoted with an asterisk are required in all new development projects unless otherwise specified. If a project cannot meet one or more of the mandatory requirements, substitutions may be made from other measures listed at the discretion of the Community Development Director.*

As proposed the project is consistent with the Santa Rosa's Climate Action Plan in that it has incorporated the following policy items from the Climate Action Plan New Development Checklist:

Policy 1.1.1 Comply with Cal Green Tier 1 Standards: The project complies with Cal Green Tier 1 standards and will be conditioned accordingly through site development, building design and landscaping.

- 2016 Building Energy Efficiency Standard became effective January 1, 2017. Meet or exceed the guidelines for the California ENERGY STAR® Homes Program. Buildings shall be designed to minimize the need for mechanical heating, cooling and ventilation. Single family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards.
- Only energy efficient appliances shall be installed in residential units, including Energy Star refrigerators, clothes washers, dishwashers, and ceiling fans. Energy efficient appliances (cloth dryer with 30 percent reduction, dishwasher with 15 percent reduction, fan with 50 percent reduction, and refrigerator with 15 percent reduction).
- All public street, area, and residential lighting (including all rooms in residences) installed on the project site shall be considered high efficiency lighting.
- Only low-flow bathroom and kitchen faucets, toilets, and showers shall be installed. Install low flow bathroom faucet (32 percent reduction), low flow kitchen faucet (18 percent reduction), low flow toilet (20 percent reduction), and low flow shower (20 percent reduction).
- The use of water efficient landscape irrigation systems (75 percent reduction in water usage) shall be installed.

Policy 1.1.2 After 2020, all new development will utilize zero net electricity: The project will be built and operational in advance of year 2020. Thus, this item is not applicable to the project.

Policy 1.3.1 Install real-time energy monitors to track energy use: Sustainable design elements proposed for the project include the installation of an energy monitor to track on-site energy use (i.e. use of nest thermostats).

Policy 1.4.2 Comply with the City's Tree Preservation Ordinance: To comply with the City's Tree Preservation Ordinance, replacement trees of the same genus and species as any removed trees will be planted. The ratio of removal to replacement will be as

stipulated in the Santa Rosa Tree Ordinance. (City Code section 17-24.050 City's tree ordinance)

Policy 1.4.3 Provide public & private trees in compliance with the zoning code: The project would provide new public and private trees. As such, a landscaping plan will demonstrate consistency with the requirements set forth for the provision of public and private trees for new development.

Policy 1.5 Install new sidewalks and paving with high solar reflectivity materials: New sidewalks and other paved surfaces would contain materials exhibiting high solar reflectivity. The existing unpaved portions of the project site are to be surfaced in accordance with the City's Construction Specification Standards for sidewalks, crosswalks and parking lots.

Policy 2.1.3 Pre-wire and pre-plumb for solar thermal or PV system: The proposed project will include pre-wiring and pre-plumbing for the future installation of solar thermal or PV systems. Units may also include PV system.

Policy 3.1.2 Supports implementation of station plans and corridor plans: The project is not within a Station Area Plan or within a Corridor Plan. The project does support alternative modes of transit by sidewalks which encourage a walkable community and is located within walking distance (adjacent to the project site along Dutton Meadows and Hearn Avenue) of public transit.

Policy 3.2.1 Provide on-site services such as ATMs or dry cleaning to site users: The project has no on-site commercial facilities to house ATMs or dry cleaning services and is not zoned for such uses, therefore, the policy does not apply.

Policy 3.2.2 Improve non-vehicular network to promote walking and biking: The project includes installation of sidewalks and bike lanes onsite that will provide connectivity internally and with the surrounding community.

Policy 3.2.3 Support mixed use, higher density development near services: The project is a small lot subdivision with a diversity of housing styles (including second dwelling units) located within walking distance of the Meadow Views Elementary School and shopping along US 101.

Policy 3.3.1 Provide affordable housing near transit: The project is a small lot subdivision with a diversity of housing styles (including second dwelling units) located within 2.5 miles of the Downtown Santa Rosa Station for SMART and adjacent to bus transit along Dutton Meadows and Hearn Avenue.

Policy 3.5.1 Unbundle parking from property cost: The property has only private parking and on-site street parking, therefore, the policy does not apply.

Policy 3.6.1 Install calming features to improve the pedestrian and bicycle experience: The project includes meandering sidewalks, bulb outs, medians, pavement marking and other features that provide traffic calming on new internal roadways.

Policy 4.1.1 Implement the Bicycle & Pedestrian Master Plan: The project includes construction of sidewalks along its frontage thereby supporting the City's Bicycle & Pedestrian Plan.

Policy 4.1.2 Install bicycle parking consistent with regulation: Section 20-36.040 of the Santa Rosa municipal code sets forth the number of bicycle parking stalls required. For the project, the municipal code requires one bicycle space for every four units if units do not have a private garage or private storage space for bike storage. As proposed, each of the residential dwelling units will have a storage area located within each carport structure.

Policy 4.1.3 Provide bicycle safety training to residents and employees: The project will sell individual homes, therefore, the policy does not apply.

Policy 4.2.2 Provide safe spaces to wait for bus arrival: There are bus stops within 1/3 of a mile of the project site with sidewalks to serve waiting transit patrons adjacent to the project site along Dutton Meadows and Hearn Avenue.

Policy 4.3.2 Work with large employers to provide rideshare programs: This policy does not apply to single family residential subdivisions as there are no large employers at the project.

Policy 4.3.3 Consider expanding employee programs promoting transit use: This policy does not apply to single family residential subdivisions as there are no large employers at the project.

Policy 4.3.4 Provide awards for employee use of alternative commute options: This policy does not apply to single family residential subdivisions as there are no large employers at the project.

Policy 4.3.5 Encourage new employers of 50+ to provide subsidized transit passes: The project does not include the introduction of any employees to the site, as it is a residential housing project. Thus, this policy is not applicable.

Policy 4.3.7 Provide space for additional Park-and-Ride lots: The project is a walkable single family residential subdivision. All of the units are within walking distance from each other and to public transit.

Policy 4.5.1 Install facilities for residents that promote telecommuting: All houses will be wired for internet.

Policy 5.1.2 Install Electric Vehicle Charging Equipment: The proposed project will include pre-wiring and pre-plumbing for the future installation of electric vehicle charging stations within garages for the single-family residences.

Policy 5.2.1 Provide alternative fuels at new refueling stations: The project does not consist of new public refueling stations. Thus, this item is not applicable.

Policy 6.1.3 Increase diversion of construction waste: The developer will prepare and implement a Construction Waste Management Plan outlining proposed efforts to minimize construction waste and maximize recycling prior to the commencement of project construction.

Policy 7.1.1 Reduce potable water use for outdoor landscaping: The planting of primarily low water use plants, with some moderate water use trees will limit the water demand generated by the proposed outdoor landscaping. All landscaping will be equipped with smart controllers for irrigation. A landscaping plan will be consistent with the City of Santa Rosa Water Efficiency Landscape Ordinance.

Policy 7.1.3 Use water meters which track real time water use: A dedicated or common water meter is proposed to supply water to the irrigation system. Irrigation system design and real time metering will be shown on final landscaping and irrigation plans. The City provides the water meters. The City of Santa Rosa has data logging equipment that can collect real time data from City-issued water meters.

Policy 7.3.2 Meet on-site meter separation requirements in locations with current or future recycled water capabilities: The project site is not located proximate to current or future recycled water capabilities. Thus, this item is not applicable. Compliance with Policies 7.1.1, 7.1.3 and 9.1.3 will substitute for this policy.

Policy 8.1.3 Establish community gardens and urban farms: The project is a single family residential development. Each home site has a back yard area that can be used for a garden.

Policy 9.1.2 Provide outdoor electrical outlets for charging lawn equipment: Exterior outlets will be provided for the single-family residences proximate to where the majority of landscaping is proposed.

Policy 9.1.3 Install low water use landscapes: Low water use native plants will be used to landscape the site. Plant materials and locations are shown on the project landscape plans. The project will be compliant with the City of Santa Rosa's Water Efficient Landscape Ordinance.

Policy 9.2.1 Minimize construction equipment idling time to five minutes or less: Provisions in contractor agreements will require that construction equipment idling time be limited to five minutes or less during all stages of construction.

Policy 9.2.2 Maintain construction equipment per manufacturer's specs: Provisions in contractor agreements will require that all construction equipment be maintained per specifications established by the manufacturer.

Policy 9.2.3 Limit greenhouse gas construction equipment emissions by using electrified equipment or alternative fuels: The use of electric equipment and/or equipment using alternative fuels shall be required in all contractor agreements and provisions therein.

Attachment C

Mitigation Measures

MASTER EIR MITIGATION MEASURES

The Master EIR identified three mitigation measure to reduce identified air quality impacts. **Master EIR Mitigation Measures 3.2.4-1, 3.2.4-3, and 3.2.4-4** would continue to apply to the proposed project.

Master EIR Mitigation Measure 3.2.4-1: Each project proponent is responsible for ensuring that the contractor reduces particulate, ROG, NO_x, and CO emissions by complying with the air pollution control strategies developed by the BAAQMD. The developer shall include in construction contracts the following requirements:

a) The contractor shall water on a continuous as–needed basis all earth surfaces during clearing, grading, earthmoving, and other site preparation activities.

b) The contractor shall use tarpaulins or other effective covers for haul trucks that travel on public streets.

c) The contractor shall sweep streets adjacent to the project at the end of the day.

d) The contractor shall schedule clearing, grading, and earthmoving activities during periods of low wind speeds and restrict those construction activities during high wind conditions with wind speeds greater than 20 mph average during an hour.

e) The contractor shall control construction and site vehicle speed to 15 mph on unpaved roads.

f) The contractor shall minimize open burning of wood/vegetative waste materials from both construction and operation of the project. No open burning shall occur unless it can be demonstrated to the BAAQMD that alternatives have been explored. These alternatives may include, but are not limited to, chipping, mulching, and conversion to biomass fuel. For any open burning, a BAAQMD permit must be obtained and done in conformance with BAAQMD regulations.

Master EIR Mitigation Measure 3.2.4-3: Each developer is responsible prior to Final Map approval for developing tree planting programs, improving the thermal integrity of buildings, and reducing the thermal load with automated time clocks or occupant sensors, and landscaping with native drought-resistant species to reduce water consumption and to provide passive solar benefits. Developers shall only install gas-burning (or any other clean fuel burning) fireplaces in new Southwest Area Plan residential dwellings. New fireplaces for existing residential dwellings in the Southwest Area shall only be gas-burning (or any other clean fuel burning) fireplaces.

Master EIR Mitigation Measure 3.2.4-4: The potential air quality impacts from toxic air emissions from construction equipment and operations will be reduced with compliance with the BAAQMD air pollution control strategies. Construction firms shall be contracted to post signs of possible health risk during

construction. The developer is responsible for compliance with the BAAQMD rule regarding cutback and emulsified asphalt paving materials.

ADDITONAL MITIGATION MEASURES

Additional mitigation measures that are required to be implemented as part of the proposed project pursuant to the City of Santa Rosa's project review and building permit process are as follows:

Mitigation Measure AQ-1 - Air Quality Dust Control: All construction projects are required to comply with the BAAQMD's dust control measures. These measures are levied by the Engineering Division as a condition of building permit issuance and are monitored for compliance by staff and/or special City Engineering and/or Planning inspectors. The measures include all the *Basic Fugitive Dust Emissions Reduction Measures* and some of the *Additional Fugitive Dust Emissions Reduction Measures* identified by the BAAQMD. The BAAQMD requires projects to:

a) Water all active construction sites at least twice daily.

b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.

c) Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.

d) Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.

e) Sweep streets daily (with wet power vacuum sweepers) if visible soil material is carried onto adjacent public streets at least once per day. The use of dry power sweeping is prohibited.

f) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

g) Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiled materials.

h) Install sandbags or other erosion-control measures to prevent silt runoff to public roadways.

i) Replant vegetation in disturbed areas as quickly as possible.

j) Watering should be used to control dust generation during the break-up of pavement.

k) Cover all trucks hauling demolition debris from the site.

l) Use dust-proof chutes to load debris into trucks whenever feasible.

m) Water or cover stockpiles of debris, soil, sand or other materials that can be blown by the wind.

Mitigation Measure AQ-2 - Air Quality Combustion Exhaust Control: All construction projects are required to comply with the BAAQMD's combustion exhaust control measures. The measures include *Basic Exhaust Emissions Reduction Measures* and some of the *Enhanced Exhaust Emissions Reduction Measures* identified by the BAAQMD. The BAAQMD requires projects to:

n) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be in proper running order prior to operation.

o) Use alternative fueled construction equipment, if possible.

p) All vehicle speeds on unpaved roads shall be limited to 15 mph.

q) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

r) Diesel powered equipment shall not be left inactive and idling for more than five minutes, and shall comply with applicable BAAQMD rules.

s) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five (5) minutes (as required by the California airborne toxics control measure Title 13, Section 2484 of the California Code of regulations). Clear signage shall be provided for construction workers at all access points.

t) Post a visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 24 hours. The Air District phone number shall also be visible to ensure compliance with applicable regulations.

u) All off-road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

1. Where access to alternative sources of power are available, portable diesel engines shall be prohibited; and
2. All off-road equipment shall have:
    a. Engines that meet or exceed either Tier 3 off-road emission standards, and
    b. Engines that are retrofitted with a Level 2 Verified Diesel Emissions Control Strategy. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such are available.

Mitigation Measure AQ-3 – Architectural Coating Emissions: *BAAQMD Regulation 8, Rule 3 for Architectural Coatings.* Emissions of volatile organic compounds (VOC) due to the use of architectural coatings are regulated by the limits contained in Regulation 8: Organic Compounds, Rule 3: Architectural Coatings (Rule 8-3). Rule 8-3 was revised on January 1, 2011 to include more stringent VOC limit requirements. The revised VOC architectural coating limits specify that the use paints and solvents with a VOC content of 100 grams per liter or less for interior and 150 grams per liter or less for exterior surfaces shall be required.

Appendix B: 2018 Noise Technical Report

NOISE TECHNICAL REPORT

Dutton Meadows
Santa Rosa, California

Prepared For:

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April 2018

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Summary

RCH Group (RCH) has conducted this noise analysis for the Dutton Meadows project. The project consists of construction and operation of 126 single-family residences, of which 75 include accessory dwelling units, on a mostly undeveloped parcel. The project is located southeast of the intersection of Hearn Avenue and Dutton Meadow in Santa Rosa, California.

The project site is approximately 18.43 acres and consists of seven parcels (APN 043-071-007, -022, and -023, and 043-191-016, -022, -023, and -024). Surrounding land uses are residential, open space, and Meadow View Elementary School to the west.

This report analyzes the noise impacts from the project and is prepared in a format to answer the noise issues identified in the Initial Study Environmental Checklist Form in Appendix G of the CEQA Guidelines. This report provides an overview of existing noise levels measured at the project site, local noise regulatory framework, and an analysis of potential noise and vibration impacts that would result from construction and operation of the project.

Construction activities would result in increases in ambient noise levels in the project vicinity. However, these increase would be temporary and within the standard City conditions hours of construction, and the impact of exposure of people to excessive noise levels would be less than significant.

In general, the project site is a quiet location. The dominant sources of noise during the measurements were traffic from Hearn Avenue and Dutton Meadow. Long-term 24-hour noise levels (CNELs) were 51-52 dB near the center of the site (Site 1) and were 53-56 dB in the northeast area of the site (Site 2).

The analysis reviewed the CEQA Initial Study Checklist noise items and determined that with mitigation the project would not result in any significant noise or vibration impacts.

Comparison to Master EIR and Other CEQA analyses

Information in this section (prepared by RCH Group, Inc., in 2018) provides an overview of the existing noise conditions at the proposed project site, the noise regulatory framework, and an analysis of potential noise impacts (including assumptions and methodology) that would result from implementation of the proposed project.

As described in Section 1.2 of the *Dutton Meadows Project Draft SEIR*, the *Dutton Meadows Project SEIR* tiers from the *Southwest Area Projects EIR*. Therefore, as described in Section 3.1, the Lead Agency is responsible for implementing all appropriate and feasible mitigation measures for impacts evaluated in the *Southwest Area Projects EIR*. The *Southwest Area Projects Initial Study* concluded that there were no significant effects on noise that were not previously evaluated in the Master, Redevelopment, or General Plan EIRs. The Southwest Santa Rosa Area Plan and Master EIR (State Clearinghouse Number 92083076) were certified on June 21, 1994. Along with the Area Plan, the 35 project proposals are evaluated in the Master EIR. One noise impact was identified as a significant, unavoidable adverse impacts from buildout of the Area Plan identified by the Master EIR.

> Impact 3.2.5-3: Development of the Area Plan and its infrastructure improvements, in conjunction with cumulative traffic, could result in increased traffic noise impacts on existing Area Plan land uses.

Impact 3.2.5-3 was addressed in the Statement of Overriding Considerations for the *Southwest Area Projects Subsequent EIR* (SCH #2004062031). No feasible mitigation measures exist to eliminate this significant and unavoidable impact.

The Master EIR included the following impacts that would need to be implemented for the revised Dutton Meadows project. These mitigation measures were identified in the Dutton Meadows Project Final Subsequent Environmental Impact Report

> **Mitigation Measure 3.2.5-1 (a)** To minimize construction noise impacts of nearby residents, limit construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6L00 p.m. on weekends for projects within 1,600 feet of inhabited dwelling units(s). Any work outside of these hours shall require a special permit from the City of Santa Rosa. There shall be compelling reasons for permitting construction outside of the designated hours.
>
> **Mitigation Measure 3.2.5-1 (b)** Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise.
>
> **Mitigation Measure 3.2.5-1 (c)** Contractor shall locate stationary noise sources away from residents and developed areas, and require use of acoustic shielding with such equipment when feasible and appropriate.
>
> **Mitigation Measure 3.2.5-2** Project developers shall propose noise mitigation consistent with General Plan Noise and Area Plan Community Design Policies to reduce year 2010 exterior noise levels on proposed residential and school land uses to 60 Ldn or below, on proposed playgrounds and neighborhood park land uses to 70 Ldn or below, and on proposed office buildings and commercial areas to 65 Ldn or below.
>
> **Mitigation Measure 3.2.5-3 (a)** Retrofit existing residential land uses with acoustical attenuation materials, or relocate residences, to reduce interior noise levels for the year 2010 to below 45 Ldn.
>
> **Mitigation Measure 3.2.5-3 (b)** Construct sound walls with movable sound attenuating gates, or berms to reduce exterior noise levels of existing residential land uses for the year 2010 to 60 Ldn or below.
>
> **Mitigation Measure 3.2.5-3 (c)** Construct soundwalls or berms at playgrounds and neighborhood parks to reduce noise levels for the year 2010 to 70 Ldn or below.
>
> **Mitigation Measure 3.2.5-3 (d)** Construct soundwalls or berms at office buildings and commercial areas to reduce noise levels for the year 2010 to 65 Ldn or below.
>
> **Note: As identified above, Impact 3.2.5-3 was determined to be significant and unavoidable, as the Mitigation Measures 3.2.5-3 (a-d) were not determined to be feasible. This 2018 project would not have off-site impacts greater than 1 dB, Ldn, so Mitigation Measures 3.2.5-3 (a) thru (d) would not be required even if the measures were feasible.**

The following mitigation measure was also included in the 2005 *Dutton Meadows Project Initial Study* to further reduce potential noise impacts.

Mitigation 5-1 from Initial Study. Future Indoor Noise Environment. To maintain a habitable interior noise environment, units exposed to noise levels greater than 60 dBA Ldn shall be provided with forced-air mechanical ventilation to adequately ventilate the interior spaces of the units.

Additional Mitigation Measures

The 2018 noise analysis has not identified any additional impacts or required mitigation measures as a result of the modified project or any in circumstances.

XI. NOISE -- Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Background

Noise Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[1]; average day–night 24-hour average sound level (Ldn)[2] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[3], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Table 1 identifies decibel levels for common sounds heard in the environment.

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, which also depends on ground absorption (CalTrans, 1998). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will increase the attenuation that occurs by distance alone.

[1]The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.

[2]Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

[3]CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Table 1: Typical Noise Levels

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: (modified from Caltrans Technical Noise Supplement, 1998)

Regulatory Framework

State Guidelines

State Land Use Compatibility Standards for Community Noise are provided in the State of California General Plan Guidelines (**Table 2**). The guidelines indicate that a Community Noise Exposure up to 60 dB (Ldn or CNEL) is Normally Acceptable for Single Family Residential, and a Community Noise Exposure up to 70 dB (Ldn or CNEL) is Conditionally Acceptable (OPR 2003).

Santa Rosa General Plan

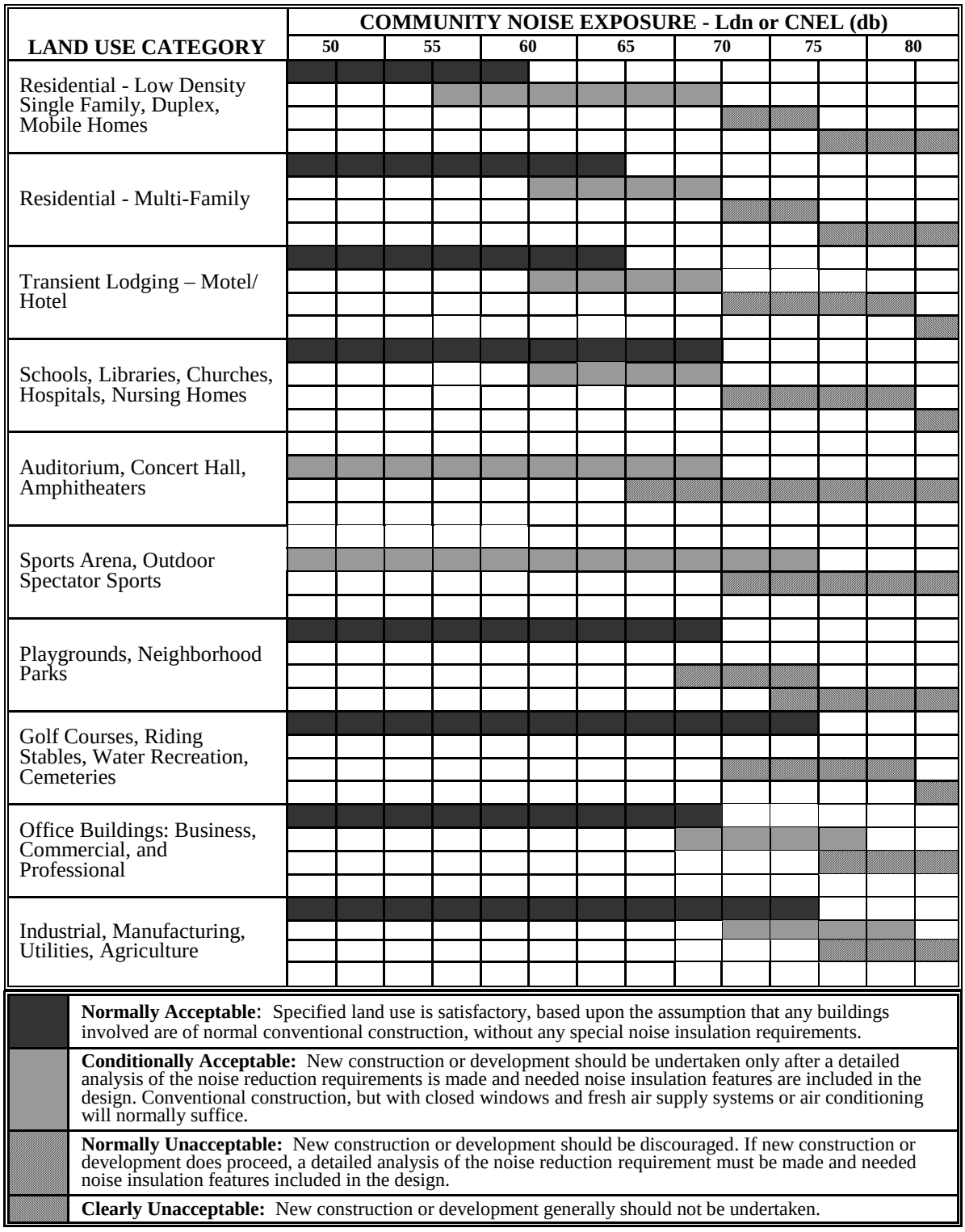
The Noise and Safety Element of the Santa Rosa General Plan states that the noise standards used by the City of Santa Rosa include: the Land Use Compatibility Standards for Community Noise environment (which are consistent with the State Guidelines, above), State of California Noise Insulation Standards (which the project will be required to comply with), and applicable standards in the City of Santa Rosa Noise Ordinance (see below).

Santa Rosa Noise Ordinance

Santa Rosa Municipal Code Section 17-16.120 states that "it is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus or similar mechanical device in any manner so as to create any noise, which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five decibels."

Section 17-16.030 establishes ambient base noise level criteria for various land uses. For single-family residential zones, the following criteria are used as a base from which noise levels can be compared: 55 dB for 7:00 a.m. to 7:00 p.m., 50 dB for 7:00 p.m. to 10:00 p.m., and 45 dB for 10:00 p.m. to 7:00 a.m.

Table 2: Land Use Compatibility for Community Noise Environment



Source: Governor's Office of Planning & Research, 2003

South Santa Rosa Area Plan

The Plan states that development shall comply with the standards and policies of the General Plan Noise Element (see Santa Rosa General Plan, above).

Standard city conditions of project approval limit the hours of construction to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction is permitted on Sundays and holidays.

Significance Criteria

Temporary construction noise impacts would be significant if construction occurred outside the hours of construction limited by the standard city conditions of project approval and noise levels from this construction exceeded the Santa Rosa Noise Ordinance standard of 60 dB between 7:00 a.m. and 7:00 p.m., 55 dB between 7:00 p.m. and 10:00 p.m., and 50 dB between 10:00 p.m. and 7:00 a.m.

Operational noise impacts of the residential development would be significant if they result in exceedance of noise standards contained in the Santa Rosa Noise Ordinance, or exceedance of vibration thresholds recommended by the Federal Transit Administration (FTA 2006), at nearby residential land uses.

Operation of the development would also result in a significant impact if it would result in a significant increase in cumulative noise exposure (generally from increased traffic noise). Increases in cumulative noise exposure (in CNEL/Ldn) of 5 dBA are generally considered significant in areas where the ambient noise environment is less than 60 dBA. In areas where the ambient noise environment is between 60 and 65 dBA, increases of 3.0 dBA, or greater, would be considered significant. In areas where the ambient noise environment exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant[4].

Existing Noise Sources and Levels

To quantify existing ambient noise levels in the immediate project vicinity, RCH conducted short-term (10-minute) measurements at five locations and long-term (72-hour) measurements at two locations at the project site. Noise measurements were made using Metrosonics db308 Sound Level Meters calibrated before and after the measurements.

The noise measurements are summarized in **Table 3** below. The Noise Appendix includes noise plots of the long-term data and a figure showing noise measurement locations. Noise measurement locations were selected to measure existing noise levels at nearby receptors that would be affected by future noise from the project, and to capture existing noise levels that would affect the proposed residences.

The dominant sources of noise during the measurements were traffic from Hearn Avenue and Dutton Meadow. The 24-hour noise levels (CNELs) were 51-52 dB near the center of the site (Site 1) and were 53-56 dB in the northeast area of the site (Site 2).

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[4] These thresholds were initially recommended by the Federal Interagency Committee on Noise (FICON) for assessing changes in ambient noise levels resulting from aircraft operations (FICON 1992), and are based on noise levels at which people typically become highly annoyed. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these criteria have since been recognized by various federal, state, and local agencies for the analysis of transportation noise impacts.

Table 3: Existing Noise Measurements

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Wednesday March 7, 2018 11:37-11:47 a.m.	5-minute Leq's: 50, 49	Siren was 55 dB. Airplane was 53 dB. Wind was 52 dB. Traffic was up to 50 dB. Back-up beep was 50 dB. Background noise was 47 dB. Quieter sounds included birds.
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Thursday March 8, 12:00 a.m. through Saturday March 10, 11:59 p.m., 2018 48-hour measurement	Hourly Leq's ranged from: 42-51 CNELs: 52, 52, 51	Unattended noise measurements do not specifically identify noise sources.
Site 1. Near the center of the site, approximately 750 feet from the centerline of Hearn Avenue and 950 feet from the centerline of Dutton Meadow	Monday March 12, 2018 10:42-10:52 a.m.	5-minute Leq's: 42, 42	Garbage truck was 44 dB. Traffic was up to 43 dB. Birds were up to 43 dB. Car horn was 42 dB. Background noise was <41.5 dB.
Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 12:08-12:18 p.m.	5-minute Leq's: 51, 53	Traffic on Hearn Ave was up to 60 dB. Motorcycle on Hearn Ave was 56 dB. Airplane was 56 dB. Dog barking was 52 dB. Background noise was 47 dB. Quieter noises included birds, wind, and voices.
Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Thursday March 8, 12:00 a.m. through Saturday March 10, 11:59 p.m., 2018 48-hour measurement	Hourly Leq's ranged from: 43-53 CNELs: 55, 56, 53	Unattended noise measurements do not specifically identify noise sources.
Site 2. Northeast area of the site, approximately 190 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:09-11:19 a.m.	5-minute Leq's: 49, 48	Cement truck on Hearn Ave was 57 dB. Birds were up to 56 dB. Trucks on Hearn Ave were 51-55 dB. Traffic on Hearn Ave was 46-51 dB. Background noise was <41.5 dB. Quieter noises included voices of neighbors.
Site 3. End of Sally Ann Street, approximately 230 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 1:02-1:12 p.m.	5-minute Leq's: 52, 51	Traffic on Hearn Ave was up to 62 dB. Bus was 58 dB. Background noise was 42 dB. Quieter noises included pedestrians, wind chimes, airplanes, and a car on Sally Ann St.

Site 3. End of Sally Ann Street, approximately 230 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:39-11:49 a.m.	5-minute Leq's: 52, 51	Loud car on Hearn Ave was 61 dB. Car on Sally Ann St was 61 dB. Traffic on Hearn was 47-60 dB. Airplane was 44 dB. Yard equipment was 42 dB. Background noise was <41.5 dB. Quieter noises included birds, voices, and a car idling.
Site 4. East end of Aloise Avenue, approximately 250 feet from the centerline of Hearn Avenue	Wednesday March 7, 2018 1:20-1:30 p.m.	5-minute Leq's: 46, 47	Motorcycle on Hearn Ave was 54 dB. Car door slam on Aloise Ave was 54 dB. Cars on Aloise Ave were up to 52 dB. Garage door opening was 51 dB. Honking was 51 dB. Voices were 49 dB. Traffic on Hearn Ave was up to 45 dB. Background noise was <41.5 dB. Quieter noises included back-up beeps, wind chimes, distant traffic, and birds.
Site 4. East end of Aloise Avenue, approximately 250 feet from the centerline of Hearn Avenue	Monday March 12, 2018 11:56 a.m.-12:06 p.m.	5-minute Leq's: 52, 51	Airplane was up to 62 dB. Dog barking was 60 dB. Loud car on Hearn Ave was 55 dB. Lawn mower was 51 dB. Traffic was up to 46 dB. Background noise was 43 dB. Quieter noises included wind chimes, back-up beeps, voices, and birds.
Site 5. West side of site, approximately 70 feet from the centerline of Dutton Meadow	Wednesday March 7, 2018 1:49-1:59 p.m.	5-minute Leq's: 56, 56	Traffic on Dutton Meadow was 54-69 dB. Truck was 69 dB. Bus was 63 dB. Whistle at school was 59 dB. Children were 48 dB. Background noise was 43 dB. Quieter noises included doves, wind, and an airplane.
Site 5. West side of site, approximately 70 feet from the centerline of Dutton Meadow	Monday March 12, 2018 1:38-1:48 p.m.	5-minute Leq's: 54, 52	Traffic on Dutton Meadow was 53-60 dB. Truck on Dutton Meadow was 60 dB. Car horn was 53 dB. Background noise was 45 dB. Quieter noises included distant traffic, birds, and children at the school.

Source: RCH Group, 2018

Existing Sensitive Receptors

According to the Santa Rosa General Plan, sensitive land uses include residences, schools, playgrounds, child care centers, hospitals, retirement homes, and convalescent homes. The nearest sensitive receptors to the project site include: residences on Aloise Avenue (directly adjacent to the project site, on the northern side), Meadow View Elementary School (to the west, with classrooms as close as 90 feet from project construction areas), residences on Hearn Avenue (on the north side of the street, as close as 80 feet from project construction areas), and residences on Pebblecreek Drive (to the southwest of the site, as close as 100 feet from project construction areas).

IMPACT ANALYSIS

a) *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?* **Less-than-Significant Impact with Mitigation Incorporated**

Master EIR and other previous CEQA Mitigation Measures

The Master EIR mitigation measures 3.2.5-1 (a) thru (c) would reduce noise impacts from construction to less than significant.

The project would include residence backyards, but given the 2018 measurements, noise levels at these outdoor activity areas would not exceed the State Guidelines standard of 60 dB for residential areas. This would be in compliance with Master EIR mitigation measure 3.2.5-2.

Cumulative noise from the 2018 project would not be substantially greater than identified in the Master EIR. The mitigation measures for that impact were determined to be infeasible and the impact of cumulative traffic noise on existing land uses was determined to be significant and unavoidable.

The 2018 project would implement Mitigation 5-1 from 2004 Dutton Meadows Initial Study.
Future Indoor Noise Environment. To maintain a habitable interior noise environment, units exposed to noise levels greater than 60 dBA Ldn shall be provided with forced-air mechanical ventilation to adequately ventilate the interior spaces of the units.

2018 Noise Assessment Update

Noise effects of the 2018 project would be associated with noise from construction of the residences, the effect of existing traffic noise on future residents, or long-term operational noise generated by the residences.

Construction Noise

The project includes the construction of 126 single-family residential units, of which 75 include accessory dwelling units. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., backhoes, bulldozers, excavators, front loaders, etc.) and other construction equipment (e.g., compactors, scrapers, graders, etc.). Construction worker traffic and construction-related material haul trips would raise ambient noise levels along local haul routes, depending on the number of haul trips made and types of vehicles used. Construction activities and associated traffic would occur primarily during the daytime.

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. As shown in **Table 4**, maximum noise levels generated by various types of construction equipment can range from 76 to 89 dB at 50 feet. **Table 5** gives average noise levels associated with construction activities at a distance of 50 feet, and shows that the highest levels typically occur during ground excavation and finishing (88 dB Leq).

Table 4: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Dump Truck	76
Air Compressor	78
Concrete Mixer (Truck)	79
Jackhammers	89
Scraper	84
Dozer	82
Paver	77
Generator	81
Auger Drill Rig	84
Front End Loader	79
Grader	85
Backhoe	78

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, 2006

Table 5: Typical Construction Activities Noise Levels

Construction Phase	Noise Level (dB Leq at 50 feet)
Ground Clearing	83
Excavation	88
Foundations	81
Erection	81
Finishing	88

Notes: Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Leq = equivalent sound level
Source: U.S. Environmental Protection Agency, Legal Compilation, 1973

The closest noise-sensitive land uses are less than 50 feet from the proposed project construction area, and could result in even higher noise levels. However, this noise would be intermittent and temporary. Implementation of **Mitigation Measures 3.2.5-1 (a) thru (c)** would reduce impacts of construction noise to less than significant.

Traffic Noise

Based on observations, existing environmental noise (primarily from traffic) is minimal. The project would include residence backyards, but given the measurements discussed above, noise levels at these outdoor activity areas would not exceed the State Guidelines standard of 60 dB for residential areas.

Operational Noise

Operational noise includes any long-term noise generated by the residences that would impact surrounding land uses. In general, residences are one of the quietest land uses (other than open space), and noise from the residences would be considered compatible with the surrounding residences. Any permanent increase in ambient noise levels in the project vicinity would not be substantially greater than existing levels without the project and would result in a less-than-significant noise increase.

The primary source of operational noise from the project would be new vehicle trips from project residents. Project-generated traffic noise would not increase noise levels by more than 1 dB along roadway segments in the project area. Persons would not be exposed to noise levels in excess of applicable standards. The noise impact would be less than significant.

b) *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?* **Less-than-Significant Impact**

Master EIR and other previous CEQA Mitigation Measures

No previous impacts from groundborne vibration were identified. None are recommended for the 2018 Dutton Meadows proposed project.

2018 Noise Assessment Update

Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. The ground vibration levels associated with various types of construction equipment are summarized in **Table 6**. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels.

Table 6: Representative Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity at 25 Feet (in/sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Vibratory Roller		0.210
Large Bulldozer		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: Federal Transit Administration, 2006

At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (ppv) threshold of 0.5 inch per second or less is sufficient to avoid structural damage. The Federal Transit Administration recommends a threshold of 0.5 ppv for residential and commercial structures, 0.25 ppv for historic buildings and archaeological sites, and 0.2 ppv for non-engineered timber and masonry buildings (FTA 2006).

The project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration (i.e., pile drivers that could be above 0.5 ppv). The closest structures to the project site are as close as 25 feet from the proposed construction area. As shown in **Table 6**, the predicted vibration levels from vibratory rollers, bulldozers, loaded trucks, and jackhammers at a distance of 25 feet would not exceed the 0.5 ppv threshold for residential and commercial structures. It is assumed that pile drives would not be used for construction of the project. Vibration impacts from construction would be less than significant.

c) *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?* **Less-than-Significant Impact**

Master EIR and other previous CEQA Mitigation Measures

The Master EIR identified Mitigation Measures 3.2.5-3 (a) thru (d) to mitigate permanent increases in noise to existing residences. The mitigations were found to be infeasible. Regardless, the impact of traffic noise from the 2018 Dutton Meadows project would be less than significant (less than 1 dB – see analysis below) and no mitigation would be required.

2018 Noise Assessment Update

Residential Noise

Residences are one of the quietest land uses (other than open space), and noise from the residences would be considered compatible with the surrounding land uses. Any permanent increase in ambient noise levels

in the project vicinity would not be substantially greater than existing levels. Therefore, permanent noise increases would be a less-than-significant.

Traffic Noise

As discussed above, the traffic noise from the project would not increase noise levels by more than 1 dB at any one location. This would have a minimal effect upon ambient noise levels and would be a less-than-significant noise impact.

d) *Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?* **Less-than-Significant Impact with Mitigation Incorporated**

Master EIR and other previous CEQA Mitigation Measures

The Master EIR mitigation measures 3.2.5-1 (a) thru (c) would reduce noise impacts from construction to less than significant.

2018 Noise Assessment Update

As discussed in a) above, construction activities could result in a temporary increase of ambient noise levels in the project vicinity, resulting in a potentially significant impact. The implementation of **Mitigation Measures 3.2.5-1 (a) thru (c)** would reduce temporary construction noise impacts to less than significant.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?* **No Impact**

Master EIR and other previous CEQA Mitigation Measures

The Master EIR did not identify any impacts related to airport land use plans.

2018 Noise Assessment Update

The project site is not located within an area covered by an airport land use plan or within two miles of a public or public use airport. Development on the site would not expose people working or residing at the project site to excessive airport noise levels and no impact would occur.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?* **No Impact**

Master EIR and other previous CEQA Mitigation Measures

The Master EIR did not identify any impacts related to private airstrips.

2018 Noise Assessment Update

There are no private airstrips located near the project site. The project would not increase onsite exposure to aircraft noise. Thus, no impact would occur.

References

California Department of Transportation (Caltrans), 1998. *Technical Noise Supplement*.

California Department of Transportation (Caltrans), 1998. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.

Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide*.

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Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06).

Governor's Office of Planning and Research (OPR), 2003. *State of California General Plan Guidelines*.

Santa Rosa, 2009. *Santa Rosa General Plan*, Chapter 12: Noise and Safety. November 3, 2009.

Santa Rosa, 2017. *Santa Rosa City Code*. Chapter 17-16 Noise.

Sonoma County, 2008. *South Santa Rosa Area Plan*.

U.S. Environmental Protection Agency, 1973. *Legal Compilation*.

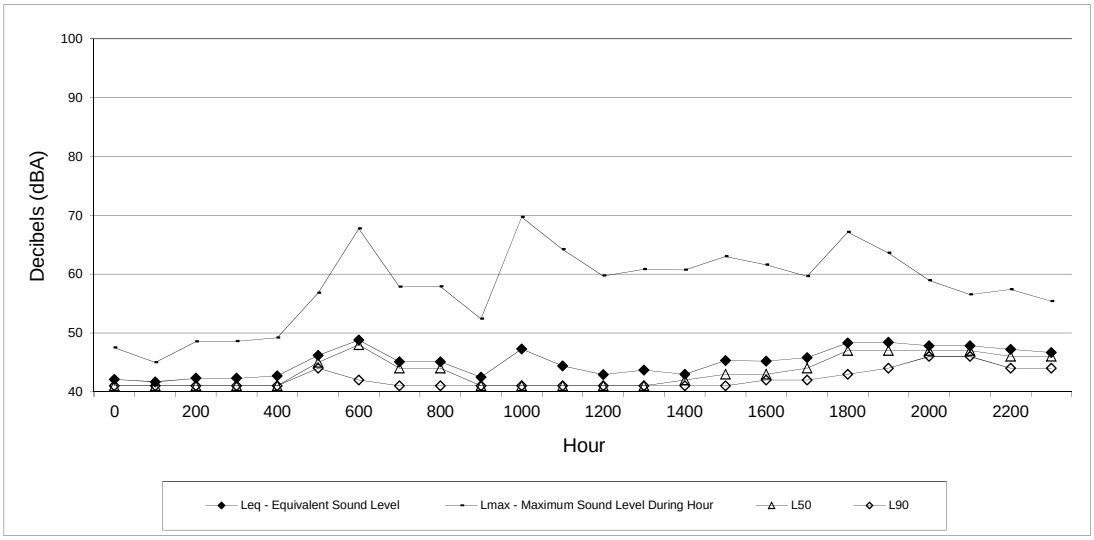
Dutton Meadows

Noise Appendix

Site 1 – 24-Hour Noise Plots (3 pages)

Site 2 – 24-Hour Noise Plots (3 pages)

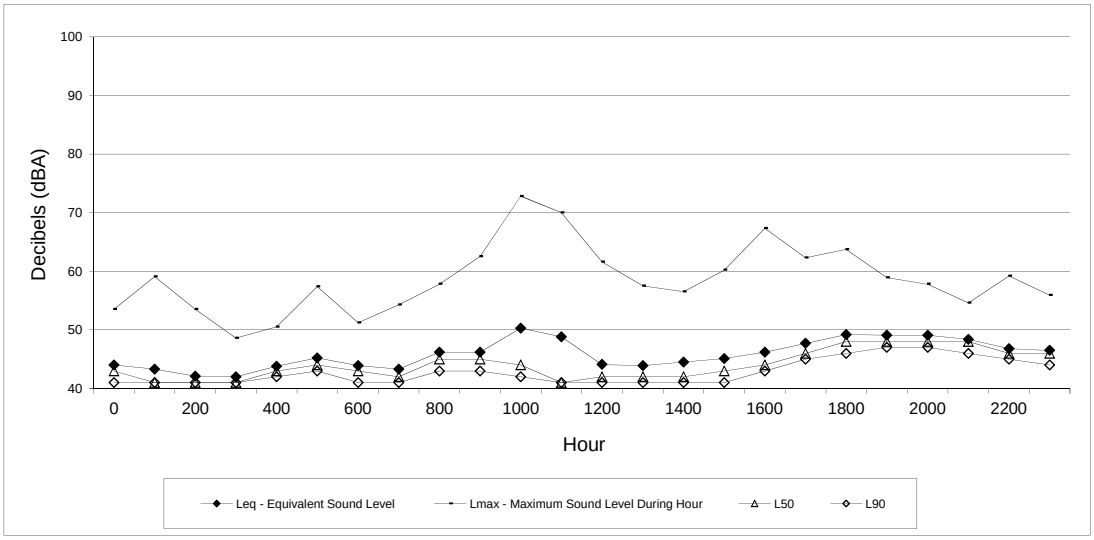
Noise Measurement Locations Figure



Site 1: Near the center of the site
Thursday March 8, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	42	48	41	41
100	42	45	41	41
200	42	49	41	41
300	42	49	41	41
400	43	49	41	41
500	46	57	45	44
600	49	68	48	42
700	45	58	44	41
800	45	58	44	41
900	43	52	41	41
1000	47	70	41	41
1100	44	64	41	41
1200	43	60	41	41
1300	44	61	41	41
1400	43	61	42	41
1500	45	63	43	41
1600	45	62	43	42
1700	46	60	44	42
1800	48	67	47	43
1900	48	64	47	44
2000	48	59	47	46
2100	48	57	47	46
2200	47	57	46	44
2300	47	55	46	44

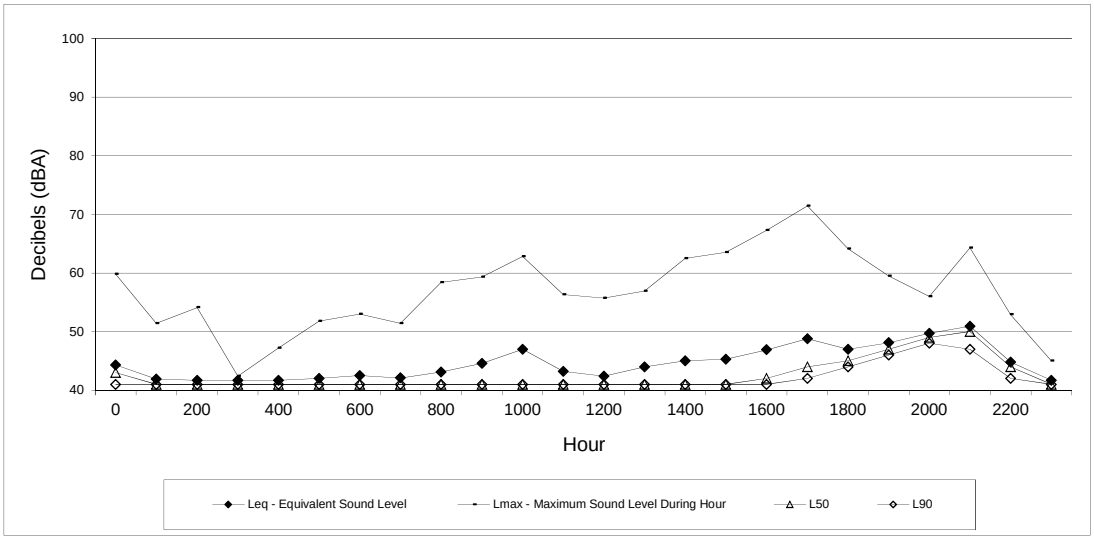
CNEL 52



Site 1: Near the center of the site
Friday March 9, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	44	54	43	41
100	43	59	41	41
200	42	54	41	41
300	42	49	41	41
400	44	51	43	42
500	45	57	44	43
600	44	51	43	41
700	43	54	42	41
800	46	58	45	43
900	46	63	45	43
1000	50	73	44	42
1100	49	70	41	41
1200	44	62	42	41
1300	44	58	42	41
1400	45	57	42	41
1500	45	60	43	41
1600	46	67	44	43
1700	48	62	46	45
1800	49	64	48	46
1900	49	59	48	47
2000	49	58	48	47
2100	48	55	48	46
2200	47	59	46	45
2300	47	56	46	44

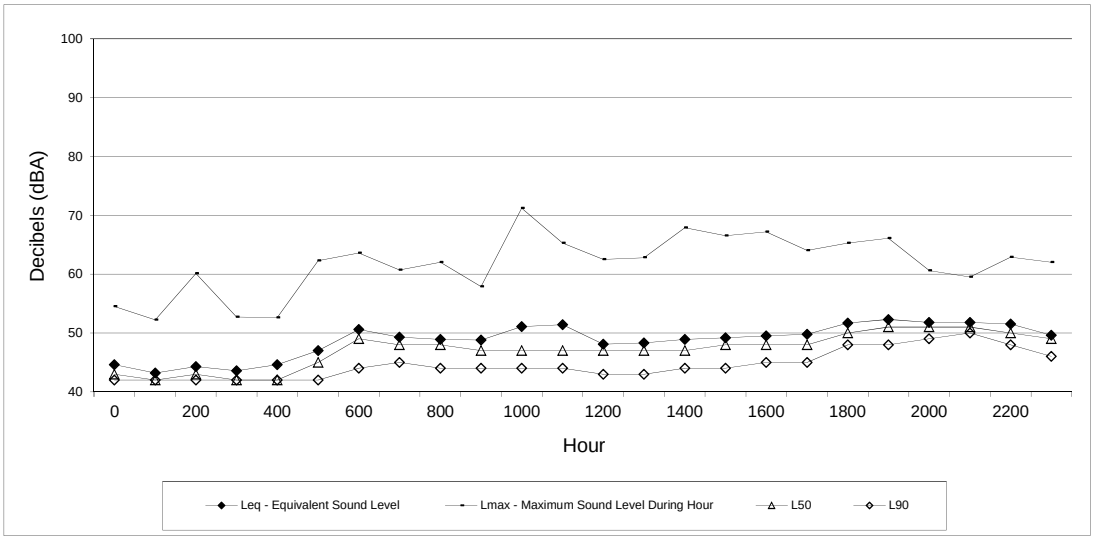
CNEL: 52



Site 1: Near the center of the site
Saturday March 10, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	44	60	43	41
100	42	51	41	41
200	42	54	41	41
300	42	42	41	41
400	42	47	41	41
500	42	52	41	41
600	43	53	41	41
700	42	51	41	41
800	43	58	41	41
900	45	59	41	41
1000	47	63	41	41
1100	43	56	41	41
1200	42	56	41	41
1300	44	57	41	41
1400	45	63	41	41
1500	45	64	41	41
1600	47	67	42	41
1700	49	71	44	42
1800	47	64	45	44
1900	48	60	47	46
2000	50	56	49	48
2100	51	64	50	47
2200	45	53	44	42
2300	42	45	41	41

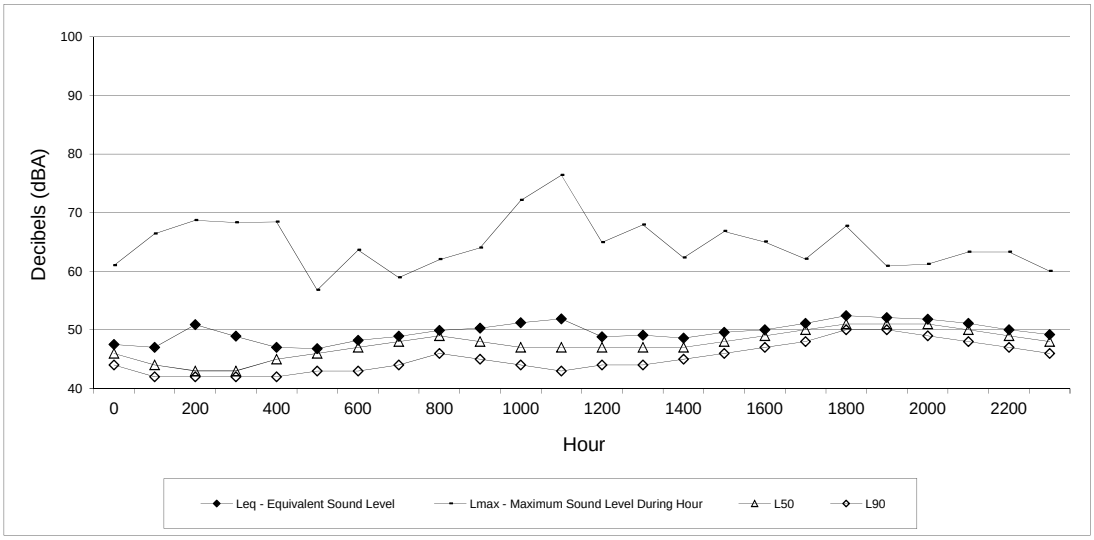
CNEL: 51



Site 2: NE area of the site
Thursday March 8, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	45	55	43	42
100	43	52	42	42
200	44	60	43	42
300	44	53	42	42
400	45	53	42	42
500	47	62	45	42
600	51	64	49	44
700	49	61	48	45
800	49	62	48	44
900	49	58	47	44
1000	51	71	47	44
1100	51	65	47	44
1200	48	63	47	43
1300	48	63	47	43
1400	49	68	47	44
1500	49	67	48	44
1600	50	67	48	45
1700	50	64	48	45
1800	52	65	50	48
1900	52	66	51	48
2000	52	61	51	49
2100	52	60	51	50
2200	52	63	50	48
2300	50	62	49	46

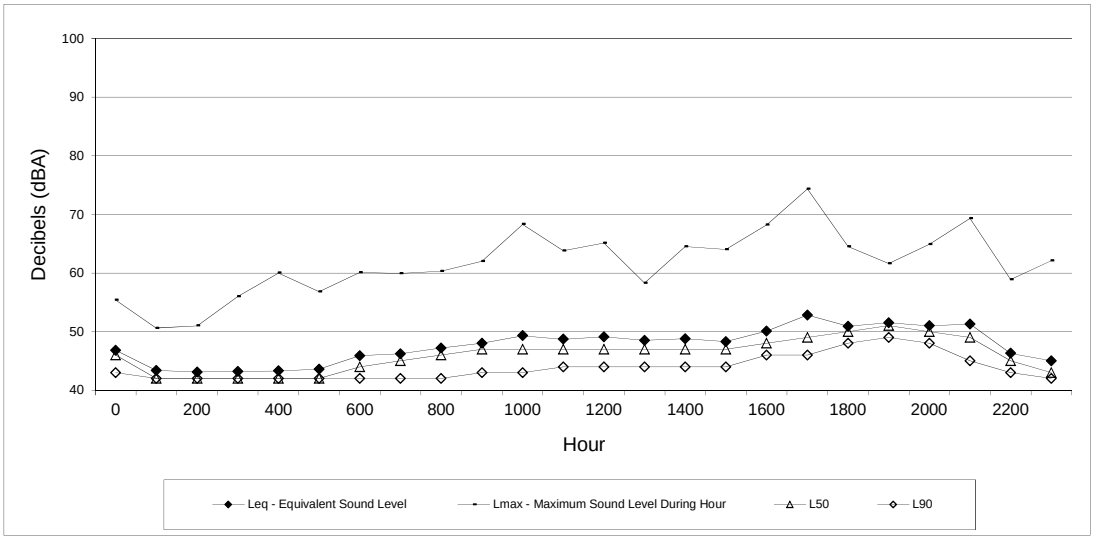
CNEL 55



Site 2: NE area of the site
Friday March 9, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	48	61	46	44
100	47	66	44	42
200	51	69	43	42
300	49	68	43	42
400	47	68	45	42
500	47	57	46	43
600	48	64	47	43
700	49	59	48	44
800	50	62	49	46
900	50	64	48	45
1000	51	72	47	44
1100	52	76	47	43
1200	49	65	47	44
1300	49	68	47	44
1400	49	62	47	45
1500	50	67	48	46
1600	50	65	49	47
1700	51	62	50	48
1800	52	68	51	50
1900	52	61	51	50
2000	52	61	51	49
2100	51	63	50	48
2200	50	63	49	47
2300	49	60	48	46

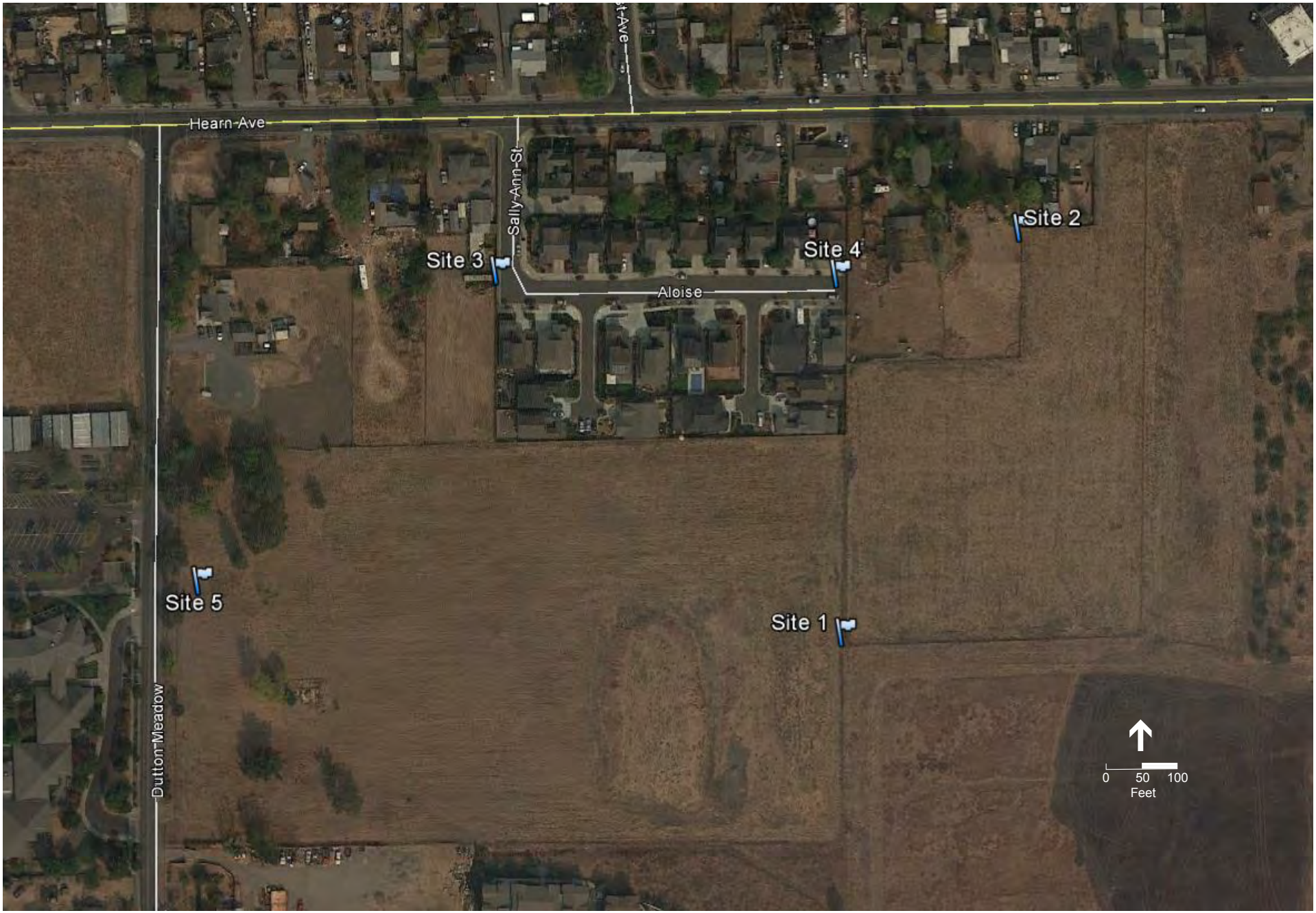
CNEL: 56



Site 2: NE area of the site
Saturday March 10, 2018

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L50	L90
0	47	55	46	43
100	43	51	42	42
200	43	51	42	42
300	43	56	42	42
400	43	60	42	42
500	44	57	42	42
600	46	60	44	42
700	46	60	45	42
800	47	60	46	42
900	48	62	47	43
1000	49	68	47	43
1100	49	64	47	44
1200	49	65	47	44
1300	49	58	47	44
1400	49	65	47	44
1500	48	64	47	44
1600	50	68	48	46
1700	53	74	49	46
1800	51	65	50	48
1900	52	62	51	49
2000	51	65	50	48
2100	51	69	49	45
2200	46	59	45	43
2300	45	62	43	42

CNEL: 53



SOURCE: Google Earth and RCH Group 2018

Dutton Meadows Project

Noise Measurement Locations

Appendix C: 2018 Cultural Resources Assessment

A CULTURAL RESOURCES EVALUATION OF THE MINOIA PROPERTY LOCATED AT 1112 AND 1200 HEARN AVENUE, SANTA ROSA, SONOMA COUNTY (APN 043-191-016 & 043-191-024).

SUBMITTED BY

Cassandra Chattan, ARCHAEOLOGICAL RESOURCE SERVICE

SUBMITTED FOR

Garrett Hinds, TRUMARK COMPANIES

November 26, 2003 **A.R.S. Project 03-074**

INTRODUCTION

As requested and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The evaluation consisted of three separate aspects:

1. A check of the information on file with our office and the Northwest Information Center of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources within or adjacent to the project area;
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits, or features, and standing structures greater than 45 years of age, to be located within the project area, and;
3. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits, features or isolated artifacts that would be adversely impacted by the proposed project.

FIGURE 1. PICTURE OF PROPERTY FROM THE SOUTH END LOOKING NORTH.

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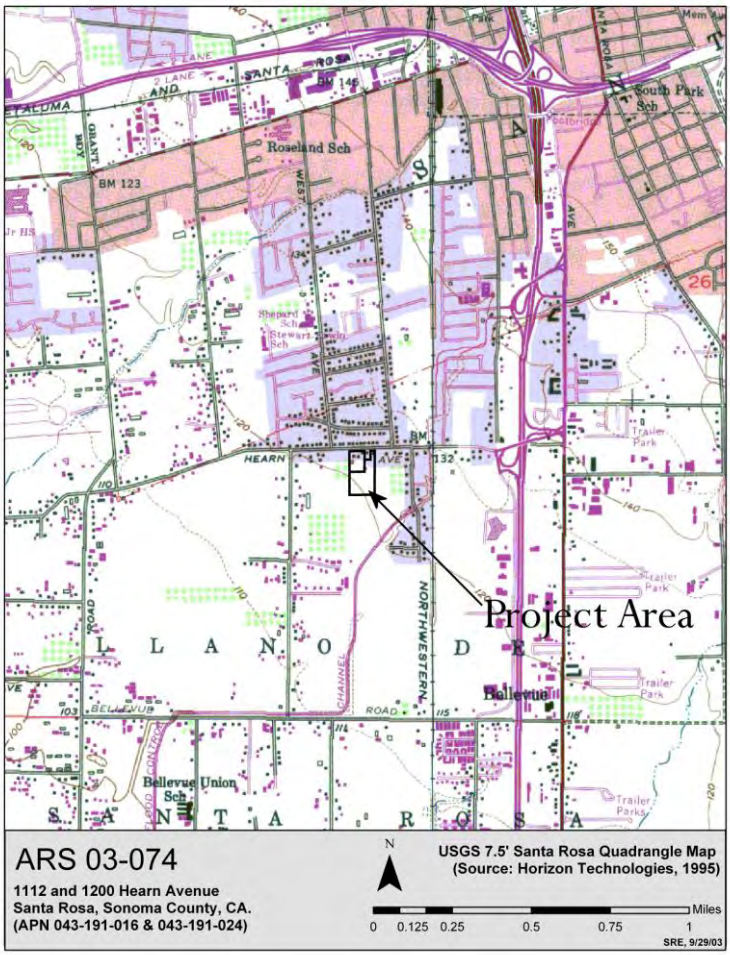
PROJECT DESCRIPTION

The applicant proposes to create a major subdivision of the property that currently consists of open grassland with two single-family dwellings, three small granny units, and a few barns and sheds.

PROJECT LOCATION

The project consists of two adjacent parcels located at 1112 and 1200 Hearn Avenue in an unincorporated area adjacent to the City of Santa Rosa, Sonoma County. The parcel at 1200 Hearn Avenue (APN 043-191-016) contains a single-family house, three garages, an elongated one-story structure divided into three rental units, and two sheds. The parcel at 1112 Hearn Avenue (043-191-024) contains a single-family house, a detached garage, a barn, and a small pump house. The parcels consist of a total of 6.3 acres that are mostly grassland. The properties are bounded by Hearn Avenue and single-family homes to the north, open grassland to the east, south and west and a single family home to the northwest.



The project area lies in the Mexican era land grant of *Llano de Santa Rosa* within unsectioned land of Township 7 North, Range 8 West, Mt. Diablo Base and Meridian. The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from the USGS 7.5' Santa Rosa Quadrangle Map (1954 Photorevised 1980) are:

4251500 Meters North,

524100 Meters East,

Zone 10

RESULTS OF LITERATURE CHECK

Prior to undertaking the field survey, archaeological base maps, reports and historical documents were consulted, including material on file at the Northwest Information Center of the California Historic Resources Information System (CHRIS), as well as at Archaeological Resource Service (ARS). Information was consulted regarding all previously recorded archaeological sites, historic properties and previously evaluated properties within a one-mile radius of the current project area. This research was used to assess the project area's archaeological sensitivity and determine if any known cultural resource might be impacted by the proposed project. We also performed research at the County Assessor's office.

PREHISTORIC SETTING

The current project area lies within the territory of the ethnohistoric *Bitakomtara* tribelet of the Southern Pomo linguistic affiliation (Stewart 1943). According to the ethnographer Omer Stewart (1943:53), the area of the *Bitakomtara*, covering about 200 square miles, is bounded on the north by Mark West Creek; on the east by Sonoma Canyon, Bear Creek, the summit of the Mayacama Mountains, and the peak of Sonoma Mountain north of Cotati to the south end of Laguna de Santa Rosa Creek; and on the west by Laguna de Santa Rosa. The old village site of *Hukabetca'wi*, was noted by the ethnographer S.A. Barrett as located "on the south bank of the Santa Rosa creek at a short distance from the depot of the California Northwestern railway in Santa Rosa" (Barrett 1909:222). This would be the closest recorded ethnographic village to the current project, yet it is at a significant distance and will not be negatively affected by the current project (Barrett 1908; McLendon and Oswalt 1979). Most of the ethnographic and prehistoric sites of the greater Santa Rosa area tend to be located along watercourses or around wetlands, such as those in the Laguna area. The current project area is located on the eastern side of the former Laguna within the floodplain.

The former marsh known as the *Llano de Santa Rosa, Llano* being Spanish for "plain" or "delta," was seasonally flooded with the overflow from Colgan and Santa Rosa creeks and their tributaries, which have since been channelized. Prehistoric populations are known to have exploited the plant and animal resources at the freshwater lakes and marshes that were seasonally present in the *Llano de Santa Rosa*. Because of the diverse natural resources contained within the lake and its surrounding marshes and seasonal wetland areas, Native subsistence activities were spread over the entire area.

Prehistoric sites throughout Sonoma County are often are marked by midden soil, a result of the build up of decomposed organic matter, or by concentrations of obsidian and chert debitage, shellfish remains, obsidian tools (such as projectile points, knives and scrapers), various kinds of ground stone, and midden soil with charcoal, fire-affected rock, and other constituents. However most of the prehistoric sites encountered in the Laguna area are short-term campsites and activities areas associated with the exploitation of the seasonal wetlands. Habitation sites in this area would need to be seasonally vacated due to flooding, and would not be expected to sustain long term occupancy due to the periods of inundation.

Evidence of prehistoric activity may be found between the open areas where basic subsistence activities occurred and the more upland position of sites that reflect their more permanently occupied settlements. Hunting implements such as projectile points are often found in these isolated contexts as well as certain types of implements used to procure and/or process various kinds of raw material into food, clothing, or other items. Some isolated artifacts may reflect the exploitation of seasonal wetlands, or vernal pools, that tend to develop in the poorly drained areas within the former lake basin (Origer and Fredrickson 1977, 1980; Flynn 1990, 1992).

Small temporary encampments are situated along the banks of intermittent streams, some of these being marked by small mounds and others by concentrations of obsidian and chert flakes in sporadic areas within the grasslands (Flynn 1986). Surface indicators of sites found within the Laguna may include shellfish remains, obsidian tools (such as projectile points, knives, and scrapers), obsidian and chert debitage, various kinds of ground stone, and midden soil with charcoal, fire-affected rock, and other constituents (Praetzellis and Praetzellis 1977; Flynn 1986, 1990; Roop and Flynn 1997). Chipped and ground stone implements and waste flakes in what seem to be apparent isolated finds have also been encountered (Flynn 1990; Bryne 1992, Morre 1996). These specimens may represent hunting losses or on-spot manufacture or repair of broken projectile points.

HISTORIC SETTING

The project area lies within the boundaries of the Mexican era land grant of Rancho Llano de Santa Rosa, bequeathed to Joaquin Carrillo by the Mexican Government in 1844. The grant consisted of three leagues adjoining his mother's land grant of the Cabeza de Santa Rosa (Munro-Fraser 1880). The grant extended from the Laguna de Santa Rosa on the west and southwest, the base of Sonoma Mountain near Kawana Springs at the east, and Santa Rosa Creek on the north. In the American period this area started out as large farms and by the late 1800s was characterized by small family farms between five and thirty-five acres in size. Scattered houses were characteristic of the area through the 1920s and in the 1950s there

had been suburban infill between the older residences. Today houses in tight proximity are located along the main roads, yet there are large grassland areas between these populated streets.

The property lies in an area commonly called Dutton Meadow named for Warren Dutton. Originally a banker from Tomales, Dutton began cultivation of French prunes on a half acre of his cherry orchards in 1880. In 1881 after realizing the high yield of his prune trees, Dutton purchased 200 acres southwest of Santa Rosa and planted almost 20,000 prune trees that he purchased from Luther Burbank. Several relevant circumstances occurred as a result of Dutton's "experiment." Burbank earned the reputation of "horticultural genius" for being able to provide Dutton with so many prune trees in such a short period of time (Dutton's order for 20,000 trees was placed in March and Burbank delivered that fall), and eventually prunes became the leading crop in the county (LeBaron et al. 1985).

In 1879 the property was part of 312 acres belonging to J.P. Clark. Clark was originally from Tennessee and came to Santa Rosa in 1852. He ran a Livery stable and stage route and the residence and an orchard on his property were located adjacent to the railroad tracks, away from the current project area (Thompson 1879: 60, 116). By 1897, the Clarke property had been subdivided into many smaller parcels and the current project area became part of 7 acres belonging to Henry Hobbs et al. The general area was characterized by small farms with most parcels between five and thirty-five acres in size (Reynolds and Proctor 1897). The 1914 USGS Santa Rosa 15' quadrangle map shows one house in the northwestern portion of the property where a house stands today on the current project area. By 1954 there were two residential structures and one barn on the western property and one residential structure on the eastern property. By 1980 another barn or shed had been added in the center of the field behind the house at 1112 Hearn Avenue. The project area currently contains eleven buildings; at least one of them is greater than 45 years of age.

The Office of Historic Preservation has determined that any structure greater than 45 years of age has the potential to be of historic value and should be evaluated as to whether it is eligible for the National Register of Historic Places and the California Register of Historic Places if it to be affected by proposed improvements.

PREVIOUS STUDIES

It was determined that while the property has not been previously evaluated for archaeological deposits, two of the standing structures on the project area were previously evaluated as to their potential to be eligible for the National Register of Historic Places. The general area was evaluated in the "Master Environmental Assessment" performed by L.S.A. in 1991. Susan Clark and Dennis Harris performed the historic evaluation portion of this document. All structures appearing to be of potential historic significance were inventoried. A vernacular structure built in 1949 at 1112 Hearn Avenue was noted as not eligible but in good condition. The bungalow and barn at 1200 Hearn Avenue were listed as constructed prior to 1920, and ineligible for the National Register but still of local interest and in excellent condition (Clark and Harris 1991). A result of the Master Environmental Assessment was that each proposed land use permit must be individually evaluated for historic resources.

The structures were again evaluated in 1996, as part of a DOE (DOE-49-96-0011-0000 and DOE-49-96-0009-0000) and once as part of a FHWA (FHWA951215A). Both the Chris and Clara Christensen House with an address of 1112 Hearn Avenue and built in 1954, and the Maria and Giacomo Bin Farm at 1200 Hearn Avenue, built in 1914, were assigned the National Register code of "6Y2" meaning the structures were "determined ineligible for the National Register by consensus, with no potential for the National Register, and not evaluated for a local listing" (OHP 2002).

In addition, four houses located directly to the east have also been previously evaluated which resulted in their being assigned Primary Numbers. P-49-001713, P-49-001714, P-49-001715, and P-49-001716 are all residential structures, some with outbuildings built between 1885 and 1954. Clark and Harris rated three of these as in good condition, with two eligible for a local listing as a contributor only (850 and 980 Hearn), and one as a non-contributor (976 Hearn) (Clark and Harris 1991:Appendix B, 8). Later evaluations of 850, 980 and 1004 Hearn as part of a DOE (DOE-49-96-0007-0000, DOE-49-96-0008-0000, and DOE-49-96-0010-0000) and as part of a FHWA (FHWA951215A) found these structures to be

(6Y2) "determined ineligible for the National Register by consensus, with no potential for the National Register, and not evaluated for a local listing" (OHP 2002).

At least thirteen archaeological surveys have been conducted within a mile of the current project and six recorded historic structures are located within a half of a mile of the project area. The closest prehistoric archaeological site is located at a distance of over mile.

Archaeological investigations have been performed on the properties immediately adjacent to the current project on the east, south, and west (Cartier 2000 and 2001). On the property to the west there were two houses built around 1910, which were determined not to be historically significant. Cartier did not observe any cultural materials, but recommended a program of spot check monitoring during construction, due to the poor visibility of the soil surface during the surface reconnaissance in conjunction with historic resources previously recorded on the adjacent lot (2001). On the south and east sides, a thirty-one acre project area consisting of three separate parcels was evaluated. One house built in the early part of the twentieth century was noted on the property but determined not to have any historical significance. Again, surface visibility was poor during the surface reconnaissance and spot check monitoring was recommended although no cultural materials were observed on the project area (Cartier 2000).

The majority of the other surveys within a mile of the current project have had negative findings (Chavez 1987; Cole 1981; Flynn 1990, 1992; Gerike 1981; King 1973; Hale 1986; Wilber 1986; Origer 1976; and Thompson 1986). The closest prehistoric site to the current project area is known to archaeologists as Son-1694 and is located at a distance of 1 mile. The site consists of a "very sparse linear distribution of obsidian flakes (one utilized), and broken obsidian float were disturbed along south" (Tremaine 1988). The material observed was believed to be associated with a buried site.

Additionally there have been a great amount of archaeological studies and prehistoric findings near the course of the *Laguna de Santa Rosa*, approximatelty four miles to the east. In 1977, archaeologists at Sonoma State College evaluated twenty-two hundred acres as part of the proposed Santa Rosa Wastewater system, and sixteen prehistoric sites were recorded as part of the field survey (Origer and Fredrickson 1977). These sites are characterized by scatters of obsidian flakes, or scatters of obsidian and chert flakes, and a midden deposits with shellfish remains and obsidian and chert flakes. All are located between seasonal creeks or on rises next to creeks and the Laguna (Sonoma State 1977a through 1977e). In 1980, as a second phase of the proposed wastewater project, Origer and Fredrickson excavated four sites near the Laguna; CA-Son-977, CA-Son-978, CA-Son-979 and CA-Son-980. All these sites are located at a distance of over two miles from the current project area; however, they are good examples of the types of prehistoric archaeological finds characteristic of the *Laguna* area. In the excavation of these sites, they encountered scatters of obsidian and chalcedony chipping waste, basalt chipping waste, chipped stone tools, ground stone tools, ceremonial items such as charmstones and crystals, midden soils, and food waste such as shell and bone (Origer and Fredrickson 1980). Archaeological monitoring of grading operations at several elevations near wetland areas also recovered significant prehistoric artifactual materials.

RESULTS OF SURFACE EXAMINATION

On November 24, 2003, the author and Sally Evans went to the property on Hearn Avenue and performed a surface reconnaissance. The property was inspected for the presence of both prehistoric and historic artifactual materials and sites. The area is very flat with no drainages or undulations to the terrain. While structures were present on the north edge of the

FIGURE 3. FARM COMPLEX VIEWED FROM THE SOUTH.

project area, approximately eighty percent was covered in high dense grasses, obscuring visibility of the soil surface. Canary grass or hay up to three feet in height made surveying very difficult. Nonetheless, the property was walked in a series of transects in approximately 10 meter intervals and the grasses were persistently pushed aside with a trowel to view the underlying soil. The soil consisted of a moist dark brown-black colored loam with occasional pebbles and dense with grass roots. Paths left by sheep on the property and occasional areas where the grass was flattened allowed for better visibility in these areas. No artifacts historic or prehistoric were observed on the property.

The structures were again inspected for their potential to be of historic importance. The houses have been previously evaluated and were "determined ineligible for the National Register by consensus, with no potential for the National Register, and not evaluated for a local listing" (OHP 2002). The structures were therefore inspected to see if they were potentially of local importance.

FIGURE 4. HOUSE AT 1200 HEARN AVENUE.

The property at 1200 Hearn Avenue was inspected first. In the recent past, this complex has been used as rental dwellings and the pasture has been used for boarding a small flock of sheep. The main house is a single story cottage with a front gabled roof and clad with drop lapped boards. The structure originally had a full front porch, which has been enclosed. There are brackets along the eaves on the front of the house, but other than these there are no decorative elements to the house. There is a small addition to the rear of the structure. The house was built in 1914 but is not an excellent example of this type of architecture. It does not add to a historic feel of the area and there are no people or events associated with the structure that are important to history.

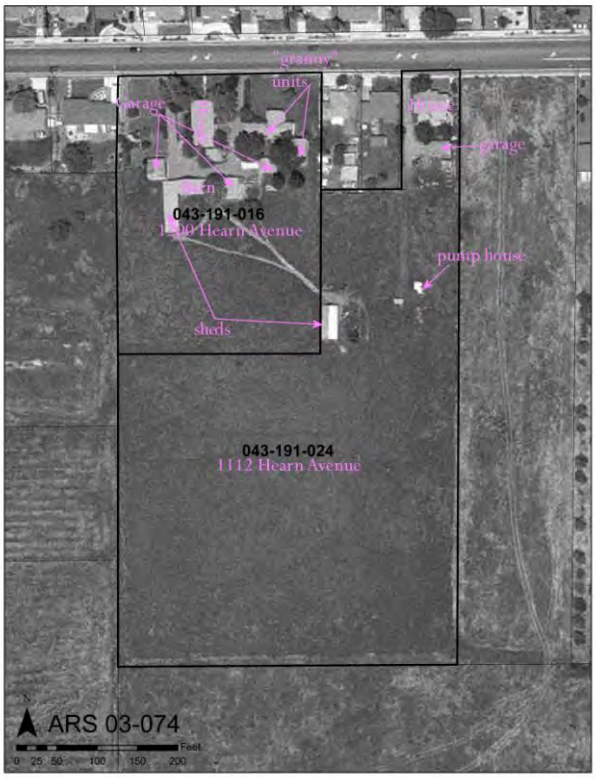


FIGURE 5. AERIAL PHOTO OF PROJECT AREA WITH STRUCTURES IDENTIFIED.

There are two small "granny" units located to the east of the main house, and one of these is composed of two separate units. These structures are clad with horizontal shiplap boards. The southern structure is built on piers and has two additions. One addition is on the west side and has slightly different sized boards, and another is on the north side in the center of the structure and has the same size cladding. The building has exposed rafters and wood double hung windows along the front. A few aluminum sashed windows are on the back side. The southeastern structure is of the same design but is built on a concrete foundation. It is single story rectangular structure without additions. These structures are very simple and are later additions to the property to create rental accommodations.

A front gabled and horizontal wood sided garage is located to the southwest of the rental dwellings, and another garage with horizontal board sides and a shed roof is located to the southeast of the first garage and is attached to a barn. A third garage, freestanding with a side gabled roof and horizontal board

siding is located to the west of the rest of the structures on the property. None of these garages are of historic importance, or add to the character of the property.

A large barn is located directly to the south of the main house. The barn has a garage addition on the east side and another shed addition on the west side. It is two stories high and has a hayloft door under the front gable. The front of the structure is clad with horizontally placed shiplapped clapboards. The rear of the structure is composed of vertically placed boards of various sizes and lengths. The western addition extends beyond the rear of the structure to the south and is clad with vertically placed boards each roughly 10 inches in width, and there are square window openings along the sides that lack panes.

The structures at 1112 Hearn Avenue were inspected next. The house on property is also used as a rental dwelling, and the fields at the rear are attached to the property at 1200 Hearn and have been used for boarding sheep. The house is a small side gabled structure, clad with horizontal shiplaped boards, with a shed roof addition along the rear. The house is very basic, without stylistic elements and was built in 1954. It is similar to the rental dwellings located on the property at 1200 Hearn Avenue. A small detached garage is located to the rear of the house. A small pump house is located in the field several hundred feet to the south of the house, and a barn is located to the west of the pump house along the property line. The barn is used in conjunction with the farm complex to the west. It is open on the east side and has vertical board and battens on the other three sides. There was also a small cement pad between the pump house and the barn.

CONCLUSIONS AND RECOMMENDATIONS

No prehistoric or historic artifacts were observed during the surface examination. Although soil visibility was poor in most areas due to the dense grasses, these were scraped aside often and it is likely that had there been a significant site or deposit on the property, evidence of such would have been observed. While the house on the property at 1200 Hearn Avenue is greater than 45 years of age, none of the structures on the project area appear to be of historic importance. Even as a whole the small farm has been extensively modified and is no longer representative of the small farms that were located in this area in the past. There are no attributes that make this property of historic importance either for the National Register, California Register or a local listing.

The current project will not have any impact upon the known archaeological resources of the area. Further archaeological investigation is not warranted at this time. However, there is a chance that buried historic or prehistoric artifacts could be present on the property. If a concentration of artifacts or cultural soils, including deposits over fifty years in age associated with the house, such as outhouse shafts or trash pits, are encountered during earth disturbing activities, work should cease in that area and a qualified archaeologist should be notified and an evaluation performed.

Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Modified cobbles or boulders of schist also might be found in buried contexts. Historic artifacts potentially include all by-products of human land use greater than 50 years of age.

If human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission should be contacted by the Coroner so that a “Most Likely Descendant” can be designated.

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A CULTURAL RESOURCES EVALUATION OF THE PROPERTIES LOCATED AT 2666 AND 2684 DUTTON MEADOWS AND 1112 AND 1200 HEARN AVENUE, SANTA ROSA, CA

SUBMITTED BY

Andrew Von Pinnon, ARCHAEOLOGICAL RESOURCE SERVICE

SUBMITTED FOR

TRUMARK COMPANIES

June 11, 2018 **A.R.S. Project 18-019**

INTRODUCTION

As requested and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The following basic tasks were accomplished as part of this project:

1. A check of the information on file with our office and the Regional Office of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources,
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits, and;
3. Contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area;
4. Contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area;
5. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits.
6. Preparation of a report describing the work accomplished, the results of the research, and making appropriate recommendations for further action, if warranted.

PROJECT DESCRIPTION

The applicant proposes to create a major subdivision of the property that consists of several single-family homes. The archaeological project involved a reconnaissance of the proposed project area to determine the presence of absence of potentially significant archaeological resources.

PROJECT LOCATION

The project area consists of four parcels located at 2666 and 2684 Dutton Meadow and 1112 and 1200 Hearn Avenue, Santa Rosa, Sonoma, California. The parcel at 1200 Hearn Avenue (APN 043-191-016) contains an A-frame barn with an attached chicken house that lies perpendicular to the barn and runs in a north-south direction. An older residence is located north of the barn within the same parcel. The parcels at 1112 Hearn Avenue (APN 043-191-024) and 2666 and 2684 Dutton Meadow largely consist of open land. Together, the parcels consist of a

total of 17.14 acres. The properties are bounded by Dutton Meadows (formerly known as South Dutton Avenue) to the west, Hearn Avenue and single-family homes to the north, open grassland to the east, and open grasslands and single-family homes and apartment complexes to the south.

The project area lies in the Mexican era grant of *Llano de Santa Rosa* within unsectioned land of Township 7 North, Range 8 West, Mt. Diablo Base and Meridian as shown on the USGS 7.5' Santa Rosa Quadrangle Map (1954 (photorevised 1980)). The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from Google Earth are:

4251590 Meters North,

523910 Meters East,

Zone 10

REGULATORY SETTING

There are no previously recorded prehistoric or historic resources located within the project area. Archaeological resources, once identified, are evaluated using criteria established in the California Environmental Quality Act (CEQA) (14 CCR 15064.5 and PRC 21084.1). Significant historical resources need to be addressed before environmental mitigation guidelines are developed and approved. A "significant historical resource" (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical Resources. As per Title 14, California Code of Regulations Section 15064.5, historical resources are those that are:

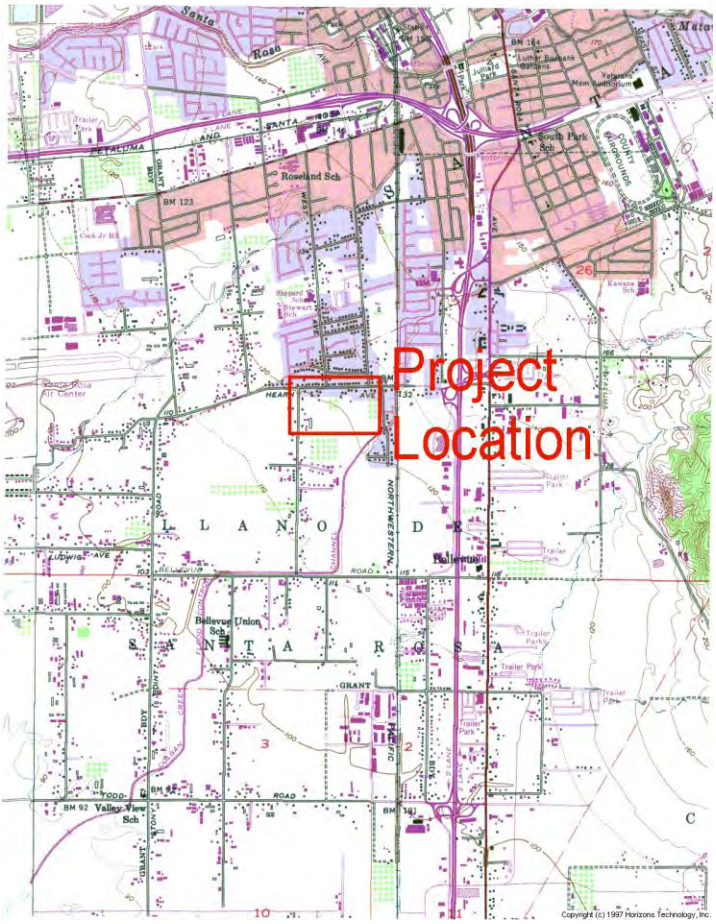

FIGURE 1 -- PROJECT LOCATION

- Listed in, or eligible for listing in, the California Register of Historic Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 et. seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource Code; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be

listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of our history; or
2) Is associated with the lives of persons important in our past; or
3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

FIGURE 2 -- PROJECT AREA SHOWING THE PROPOSED DEVELOPMENT PLAN

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and "unique archaeological resources." A "unique archaeological resource" has been defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstratable public interest in that information,
2) Has a special and particular quality such as being the oldest of its type or the best available example of its type, or

3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

As of July 2015, two new classes of resources have been defined. Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resources as defined in PRC sections 5020.1(j) or 5024.1.

SACRED LANDS INVENTORY / NATIVE AMERICAN CONSULTATION

The California Native American Heritage Commission (NAHC) works to identify, catalogue, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9. A check with the NAHC was done to determine if there are sites listed in the Sacred Lands file located within or near to the current project area. However, the NAHC did not respond so it is recommended that the lead agency contact any tribes that have requested consultation.

RESULTS OF LITERATURE CHECK

Prior to undertaking the field survey, archaeological base maps, reports and historical documents were consulted, including material on file at the Northwest Information Center of the California Historic Resources Information System (CHRIS), as well as at Archaeological Resource Service (ARS). Information was consulted regarding all previously recorded archaeological sites, historic properties and previously evaluated properties within a one-mile radius of the current

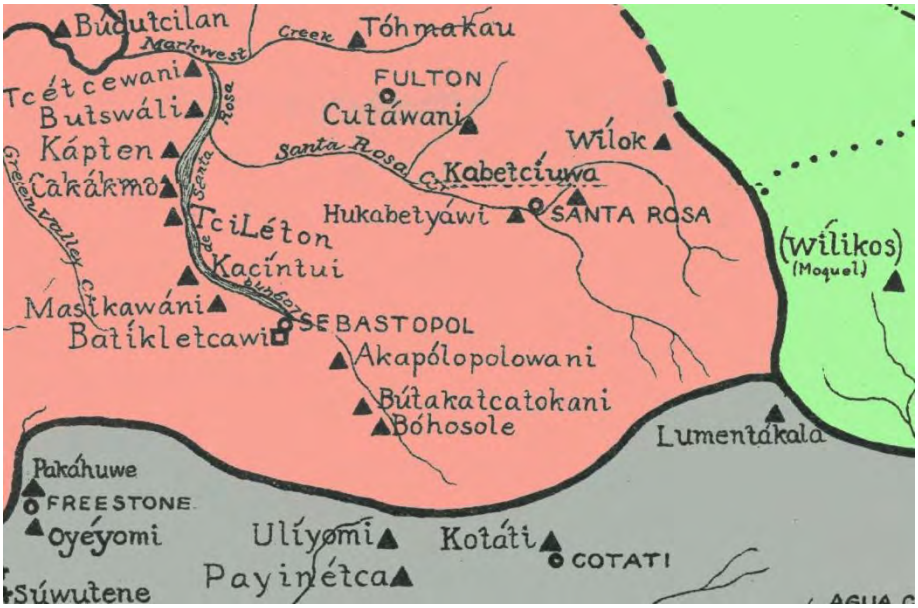

FIGURE 3 -- ETHNOGRAPHIC TERRITORIES

Barretts 1908 map of ethnographic territories shows the project area to lie in Pomo (pink) territory, bordered by Coast Miwok (gray) and Wappo (green).

project area. This research was used to assess the project area's archaeological sensitivity and determine if any known cultural resource might be impacted by the proposed project.

PREHISTORIC SETTING

The current project area lies within the territory of the ethnohistoric *Bitakomtara* tribelet of the Southern Pomo linguistic affiliation (Stewart 1943). According to the ethnographer Omer Stewart (1943:53), the area of the *Bitakomtara*, covering about 200 square miles, is bounded on the north by Mark West Creek; on the east by Sonoma Canyon, Bear Creek, the summit of the Mayacama Mountains, and the peak of Sonoma Mountain north of Cotati to the south end of Laguna de Santa Rosa Creek; and on the west by Laguna de Santa Rosa. The old village site of *Hukabetca'wi*, was noted by the ethnographer S.A. Barrett as located "on the south bank of the Santa Rosa creek at a short distance from the depot of the California Northwestern railway in Santa Rosa" (Barrett 1909:222). This would be the closest recorded ethnographic village to the current project, yet it is at a significant distance and will not be negatively affected by the current project (Barrett 1908; McLendon and Oswalt 1979). Most of the ethnographic and prehistoric sites of the greater Santa Rosa area tend to be located along watercourses or around wetlands, such as those in the Laguna area. The current project area is located on the eastern side of the former Laguna within the floodplain.

The former marsh known as the *Llano de Santa Rosa, Llano* being Spanish for "plain" or "delta," was seasonally flooded with the overflow from Colgan and Santa Rosa creeks and their tributaries, which have since been channelized. Prehistoric populations are known to have exploited the plant and animal resources at the freshwater lakes and marshes that were seasonally present in the *Llano de Santa Rosa*. Because of the diverse natural resources contained within the lake and its surrounding marshes and seasonal wetland areas, Native subsistence activities were spread over the entire area.

Prehistoric sites throughout Sonoma County are often marked by midden soil, a result of the build up of decomposed organic matter, or by concentrations of obsidian and chert debitage, shellfish remains, obsidian tools (such as projectile points, knives and scrapers), various kinds of ground stone, and midden soil with charcoal, fire-affected rock, and other constituents. However most of the prehistoric sites encountered in the Laguna area are short-term campsites and activities areas associated with the exploitation of the seasonal wetlands. Habitation sites in this area would need to be seasonally vacated due to flooding, and would not be expected to sustain long term occupancy due to the periods of inundation.

Evidence of prehistoric activity may be found between the open areas where basic subsistence activities occurred and the more upland position of sites that reflect their more permanently occupied settlements. Hunting implements such as projectile points are often found in these isolated contexts as well as certain types of implements used to procure and/or process various kinds of raw material into food, clothing, or other items. Some isolated artifacts may reflect the exploitation of seasonal wetlands, or vernal pools, that tend to develop in the poorly drained areas within the former lake basin (Origer and Fredrickson 1977, 1980; Flynn 1990, 1992).

Small temporary encampments are situated along the banks of intermittent streams, some of these being marked by small mounds and others by concentrations of obsidian and chert flakes in sporadic areas within the grasslands (Flynn 1986). Surface indicators of sites found within the Laguna may include shellfish remains, obsidian tools (such as projectile points, knives, and scrapers), obsidian and chert debitage, various kinds of ground stone, and midden soil with charcoal, fire-affected rock, and other constituents (Praetzellis and Praetzellis 1977; Flynn 1986, 1990; Roop and Flynn 1997). Chipped and ground stone implements and waste flakes in what seem to be apparent isolated finds have also been encountered (Flynn 1990; Bryne 1992,

Morre 1996). These specimens may represent hunting losses or on-spot manufacture or repair of broken projectile points.

HISTORIC SETTING

The project area lies within the boundaries of the Mexican era land grant of Rancho Llano de Santa Rosa, bequeathed to Joaquin Carrillo by the Mexican Government in 1844. The grant consisted of three leagues adjoining his mother's land grant of the Cabeza de Santa Rosa (Munro-Fraser 1880). The grant extended from the Laguna de Santa Rosa on the west and southwest, the base of Sonoma Mountain near Kawana Springs at the east, and Santa Rosa Creek on the north. In the American period this area started out as large farms and by the late 1800s was characterized by small family farms between five and thirty-five acres in size. Scattered houses were characteristic of the area through the 1920s and in the 1950s there had been suburban infill between the older residences. Today houses in tight proximity are located along the main roads, yet there are large grassland areas between these populated streets.

FIGURE 4 -- THE PROJECT VICINITY IN 1866

Hearn and Dutton Meadows are not yet present. The project area appears to be in the blank space above the word "Santa" near the center right of the map.

The property lies in an area commonly called Dutton Meadow named for Warren Dutton. Originally a banker from Tomales, Dutton began cultivation of French prunes on a half acre of his cherry orchards in 1880. In 1881 after realizing the high yield of his prune trees, Dutton purchased 200 acres southwest of Santa Rosa and planted almost 20,000 prune trees that he purchased from Luther Burbank. Several relevant circumstances occurred as a result of Dutton's "experiment." Burbank earned the reputation of "horticultural genius" for being able to provide Dutton with so many prune trees in such a short period of time (Dutton's order for 20,000 trees was placed in March and Burbank delivered that fall), and eventually prunes became the leading crop in the county (LeBaron et al. 1985).

In 1879, the properties at 1112 and 1200 Hearn Avenue were part of 312 acres belonging to J.P. Clark. Clark was originally from Tennessee and came to Santa Rosa in 1852. He ran a Livery stable and stage route and the residence and an orchard on his property were located adjacent to the railroad tracks, away from the current project area (Thompson 1879: 60, 116). By 1897, the Clarke property had been subdivided into many smaller parcels and the current project area became part of 7 acres belonging to Henry Hobbs et al. The general area was characterized by small farms with most parcels between five and thirty-five acres in size (Reynolds and Proctor 1897). The 1916 USGS Santa Rosa 15' quadrangle map shows one house in the northwestern portion of the property where a house stands today on the current project area. By 1954 there were two residential structures and one barn on the western property and one residential structure on the eastern property. By 1980 another barn or shed had been added in the center of the field behind the house at 1112 Hearn Avenue.

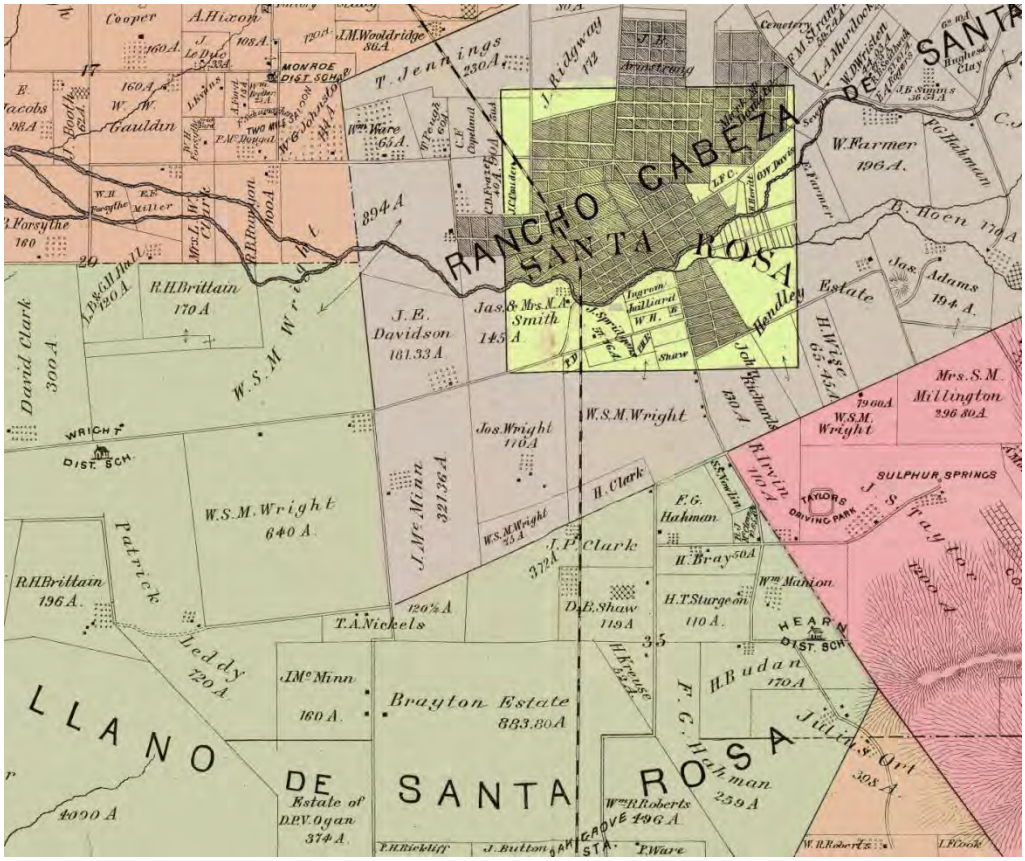

FIGURE 5 -- THE PROJECT VICINITY IN 1878

In 1879, the properties at 2666 and 2684 Dutton Meadows were part of the 883.8 acre Brayton Estate (Thompson 1879). The book Santa Rosa: A Nineteenth Century Town mentions that in May of 1888, "there was a 'Special Excursion and Auction' at the Brayton Ranch, two miles south of Santa Rosa, by the same company which was auctioning lots in the new town of Los Guilicos on the railroad" (LeBaron et al 1985: 110). By 1897, the Brayton property had been subdivided, and the parcel was within the 41.5 acre holdings of Susan J. Cunningham (Reynolds and Proctor 1897). Small farms characterized the general area at this time, with most parcels between five and thirty-five acres in size. The 1916 USGS Santa Rosa 7.5' quadrangle map shows one house in the western portion of 2684 Dutton Meadows.

The Office of Historic Preservation has determined that any structure greater than 45 years of age has the potential to be of historic value and should be evaluated as to whether it is eligible

for the National Register of Historic Places and the California Register of Historic Places if it to be affected by proposed improvements.

PREVIOUS STUDIES

FIGURE 6 -- AN OVERVIEW OF THE PROJECT AREA

The area had been recently disced, which improved surface visibility.

Previous archaeological investigations have been performed within the proposed project area (Cartier 2001; Chattan 2003). In 2001, Robert Cartier conducted a cultural resource evaluation of the properties at 2666 and 2684 Dutton Meadows. On the property to the west there were two houses built around 1910, which were determined not to be historically significant. Cartier did not observe any cultural materials, but recommended a program of spot check monitoring during construction, due to the poor visibility of the soil surface during the surface reconnaissance in conjunction with historic resources previously recorded on the adjacent lot. Two years later, Cassandra Chattan and Sally Evans performed a surface reconnaissance of 1112 and 1200 Hearn Avenue but found no prehistoric or historic artifacts. The majority of other surveys within a mile of the proposed project area have also yielded negative findings (Chavez 1987; Cole 1981; Flynn 1990, 1992; Gerike 1981; King 1973; Hale 1986; Wilber 1986; Origer 1976; and Thompson 1986).

The buildings and structures at 1112 and 1200 Hearn Avenue were previously evaluated as to their potential to be eligible for the National Register of Historic Places. The general area was

evaluated in the “Master Environmental Assessment” performed by L.S.A. in 1991. Susan Clark and Dennis Harris performed the historic evaluation portion of this document. All structures appearing to be of potential historic significance were inventoried. A vernacular structure built in 1949 at 1112 Hearn Avenue was noted as not eligible but in good condition. The bungalow and barn at 1200 Hearn Avenue were listed as constructed prior to 1920, and ineligible for the National Register but still of local interest and in excellent condition (Clark and Harris 1991). A result of the Master Environmental Assessment was that each proposed land use permit must be individually evaluated for historic resources.

FIGURE 7 -- ONE OF THE RAISED MOUNDS

This may be imported material.

The structures were again evaluated in 1996, as part of a DOE (DOE-49-96-0011-0000 and DOE-49-96-0009-0000) and once as part of a FHWA (FHWA951215A). Both the Chris and Clara Christensen House with an address of 1112 Hearn Avenue and built in 1954, and the Maria and Giacomo Bin Farm at 1200 Hearn Avenue, built in 1914, were assigned the National Register code of “6Y2” meaning the structures were “determined ineligible for the National Register by consensus, with no potential for the National Register, and not evaluated for a local listing” (OHP 2002). In the same report prepared by Cassandra Chattan in 2003, the buildings and structures at these properties were again inspected for their potential to be of historic importance, but found that there are no attributes that make this property of historic importance either for the National Register, California Register or a local listing.

RESULTS OF SURFACE EXAMINATION

On June 5, 2018, the author and Ryan Poska went to the properties at 2666 and 2684 Dutton Meadows and 1112 and 1200 Hearn Avenue and performed a surface reconnaissance. The properties were inspected for the presence of both prehistoric and historic artifactual materials and sites. The parcels were walked in transects with the soil surface examined for the presence of prehistoric or historic artifacts, features or culturally modified soils. The fields were heavily plowed and some areas contained high concentrations of annual grasses. Located in the eastern portion of parcel 043-071-007 were two large berms, referred to as Berms 1 and 2.

No prehistoric features or sites were observed on the properties. One abalone shell fragment was found within the bulge of Berm 2. Other historic isolates were found on these properties including whiteware ceramics, some stoneware, window glass, and broken bottles. A concrete pad measuring 22 feet (north-south) by 20 feet (east-west) was found in the western portion of the proposed project area. Associated features include a pile of concrete and metal refuse and portions of a walkway. Located in the southwest corner of the property is an artifact concentration consisting of glazed stoneware pipe, milk glass vessels, and window glass. However, these features did not appear to warrant significance.

Although the property at 1200 Hearn Avenue was only viewed from afar due to wired fencing that prohibited access, the parcel contained an A-frame barn and an attached chicken coop lying perpendicular to the barn in a north-south direction. In addition, a possible historic residence lies north of the barn. Other buildings and structures may still be extant on these properties.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that an architectural historian evaluate the buildings and structures associated with 1200 Dutton Meadows to determine if these features contain historical importance.

The property does not contain any archaeological resources that warrant a finding of significance. The current project will not have any impact upon the known archaeological resources of the area. Therefore, further archaeological investigation is not warranted at this time. However, there is a chance that buried historic or prehistoric artifacts could be present on the property. If a concentration of artifacts or cultural soils, including deposits over fifty years in age associated with the house, such as outhouse shafts or trash pits, are encountered during earth disturbing activities, work should cease in that area and a qualified archaeologist should be notified and an evaluation performed.

Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Modified cobbles or boulders of schist also might be found in buried contexts. Historic artifacts potentially include all by-products of human land use greater than 50 years of age.

If human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission should be contacted by the Coroner so that a “Most Likely Descendant” can be designated.

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APPENDIX 1— SIGNIFICANCE IN THE EVALUATION OF CULTURAL RESOURCES AS HISTORIC PROPERTIES

To be significant an archaeological site must qualify for registration as an "historic resource" the following criteria must be met for this listing:

> *An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850). CEQA provides somewhat conflicting direction regarding the evaluation and treatment of archeological sites. The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.*

If an archaeological site does not qualify for listing, the directive is clear. The Public Resources Code states:

> *(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.*

APPENDIX 2 – PROFESSIONAL STANDARDS FOR CONSULTANTS

Secretary of the Interior's Standards

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

2. At least four months of supervised field and analytic experience in general North American archeology; and

3. Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

Appendix D: 2018 Biological Resource Analysis

BIOLOGICAL RESOURCE ANALYSIS
DUTTON MEADOWS TRUMARK HOMES PROJECT
CITY OF SANTA ROSA, CALIFORNIA
APNs: 043-071-007, 022, 023, 043-191-024, 016

November 21, 2018

Prepared on Behalf of:

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Prepared by

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Attachment B. USFWS Biological Opinion, dated May 24, 2005

Attachment C. Corps Section 7 Request Letter, 2003

Attachment D. RWQCB Water Quality Certification for the Dutton Meadows Phase I Project, (WDID No. 1B01099WNSO), May 19, 2006

1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the proposed Dutton Meadows Trumark Homes Project located at 2684 Dutton Meadows in the City of Santa Rosa, California (Figures 1 and 2). The purpose of our analysis is to provide a description of existing biological resources within the proposed development site (hereinafter the project site) and to identify significant or potentially significant impacts that could occur to sensitive biological resources from development of this project site and associated infrastructure.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFW.

In this analysis, we present the state, federal, and local regulations that would be relevant to impacts to sensitive biological resources. This *Biological Resources Analysis* also provides mitigation measures for "significant" and "potentially significant" impacts that could occur to biological resources if the project site is developed. Whenever possible, upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regulations §§ 15000 et seq). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of Santa Rosa for the proposed project pursuant to the CEQA.

2. PROPOSED PROJECT

The applicant is proposing to construct a 211 unit residential development, including 130 single family dwellings and 81 accessory dwelling units, with associated infrastructure and connector roads, as illustrated on the Dutton Meadows Site Exhibit, dated November 12, 2018 (Attachment A).

3. PROJECT SITE ACREAGE AND APNS

The 18.68-acre project site is composed of five APNs (Exhibit A). Two sets of these APNs have been subject to resource agency different permitting efforts: "Bellevue Ranch 8" and the "Minoia Property."

- Bellevue Ranch 8 (also known as the DM Associates, LLC property) is located at 2684 Dutton Meadow (8.00 acres, APN 043-071-007), 2666 Dutton Meadow Drive (3.55 acres, APN 043-071-022) and 2650 Dutton Meadow Drive (0.52-acre, APN 043-071-023);

- Minoia Property is located at 1112 Hearn Avenue (4.68 acres, APN 043-191-024) and 1200 Hearn Avenue (1.93 acres, APN 043-191-016).

4. PROPERTY LOCATION AND SETTING

The project site is located at 2732 Dutton Meadows in the City of Santa Rosa, California (Figures 1 and 2). The project site is immediately east of Dutton Meadows and Dutton Meadows Elementary School. The project site is bordered to the south by a recently constructed residential development and an undeveloped parcel. Hearn Avenue and single-family residences occur on the northern project site boundary. Several additional undeveloped parcels occur to the east of the project site (Figure 3).

The earliest Google Earth image of the project site in 1993 shows it was entirely devoted to hay production, and was disked between crops. While it is not known how many years before 1993 that the project site was farmed, presumably it has been farmed for many years. The Bellevue Ranch 8 parcels supported several single-family homes, but these homes were removed in preparation for the development project in the early 2000s. Similarly, there is a single-family residence and an old barn/stable structure on the Minoia Property. In preparation for development, in 2006 the site was partially leveled removing all wetlands pursuant to permits authorized for the project by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), U.S. Fish and Wildlife Service (USFWS), and the (then) California Department of Fish and Game (CDFG) (now California Department of Fish and Wildlife – CDFW). Also, under a grading permit issued for the project site in 2006 by the City of Santa Rosa, large quantities of fill were placed on the project site, which remain today. Owing to the great recession, development activities ceased in 2007. The residential housing project is once again moving forward.

Since the project site was partially leveled/filled in 2006, the majority of the project site continued to be disked or was otherwise routinely mowed as necessary to control threat of fire. The site currently supports highly disturbed anthropogenic habitats. Figure 3 provides an aerial photograph of the project site showing the current land conditions of the project site and surrounding areas.

5. CITY OF SANTA ROSA REGULATORY BACKGROUND FOR DUTTON MEADOWS SPECIFIC PLAN PROJECT – COMPLIANCE WITH CEQA

In September 1993, the City of Santa Rosa published the Southwest Santa Rosa Area Plan, a Draft Environmental Impact Report covering the project site location (EIP 1993). This was revised into a Final Environmental Impact Report in April 1994 (EIP 1994). The Southwest Santa Rosa Area Plan and Master EIR (State Clearinghouse Number 92083076) were certified on June 21, 1994.

The Area Plan (“Specific Plan”) was prepared in accordance with the City's General Plan, which directed the City to "prepare area plans for southwest and southeast Santa Rosa, using this General Plan as a guide, to comprehensively address issues unique to each area and refine the land use plan for each area...." As a long-range development program, the Area Plan reflects the Santa Rosa General Plan land use diagram and General Plan development policies relevant to the southwest area. The Specific Plan encompasses approximately 3,800 acres and includes policies, goals and objectives for residential, commercial, institutional, and park/open space to be built in the area.

In accordance with Public Resources Code section 21157.6 and CEQA Guidelines Section 15179, the Master EIR expired in 1999. In order to use the Master EIR for purposes of environmental review for subsequent projects within the Southwest Plan Area, a review of the Master EIR was completed in June 2000. The review determined that the Master EIR was still valid for purposes of CEQA environmental review for new project proposals within the Area Plan boundaries.

The Southwest Santa Rosa Redevelopment Plan and Subsequent EIR was certified by the City of Santa Rosa in 2000 (City of Santa Rosa 2000). The Redevelopment Plan was prepared to provide the City with detailed information about the environmental effects of a comprehensive redevelopment plan for portions of the Area Plan. The Redevelopment EIR also provided an update of the Master EIR.

Finally, in January 2005, the City of Santa Rosa adopted a Draft Supplemental EIR (SEIR) that tiers from the Master EIR, Redevelopment EIR, and General Plan EIR (City of Santa Rosa 2005). The SEIR addressed potential impacts at both the project and programmatic level of review. The SEIR assessed biological impacts from development of the Specific Plan Area including the proposed project under review herein. A *Biological Assessment* for the Dutton Meadow Development Project was prepared by Olberding Environmental, Inc. and Laurence P. Stromberg, Ph.D. (dated June 11, 2002) and was incorporated into the findings presented in the SEIR.

6. ANALYSIS METHODS

6.1 Site Investigation

M&A biologists Ms. Hope Kingma and Ms. Christy Owens conducted a general survey of the project site on June 15, 2018 to record biological resources and to assess the likelihood of resource agency regulated areas on the project site. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. All plant and wildlife species observed on the project site are compiled in Tables 1 and 2, respectively. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species.

6.2 Background Research

Prior to preparing this biological resource analysis report, M&A researched the most recent version of CDFW's Natural Diversity Database (CNDDB 2018) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within a zone of influence. All special-status plant and wildlife species records known to occur within 3 miles of the project site are compiled and discussed in Tables 3 and 4.

6.3 Special-Status Plant Surveys

As reported in the Dutton Meadows Project Draft Subsequent Environmental Impact Report (January 2005 -SCH #2002092016), protocol level rare plant surveys were conducted prior to

site grading activities at the project site in 2000 through 2003. Surveys for special-status plant species were conducted using methods consistent with the then current CDFG guidelines for assessing the effects of proposed developments on rare and endangered plants and plant communities (CDFG 2000). The surveys were conducted within the 'window' during which virtually all target species were either in flower or were readily identifiable (Stromberg 2003, Olberding 2003).

6.4 CTS Surveys

During the winter of 2001-02 and during the spring of 2002, CTS surveys were conducted by Dr. Mark R. Jennings, Gretchen E Flohr, and a crew of assistants. The site was surveyed using the protocol methods developed by CDFG (Brode 1997). Surveys for juvenile and adult salamanders were conducted by one or more individuals on rainy or wet nights. Each individual looked for salamanders on the ground surface, or in likely small mammal burrows, with the assistance of headlamps and flashlights, by walking slowly abreast along transects back and forth across the site so the entire site was examined. Additionally, Dr. Jennings also surveyed all paved roads in the vicinity of the site (within one-half mile) at the conclusions of the on-site surveys. Adult and juvenile surveys were conducted on December 22, 2001, and January 8 and 28 and February 20 and 26, 2002. Areas containing standing water were dip-netted during the January and February terrestrial surveys and on April 3 and 18, 2002. A second-year of CTS surveys following the CDFG protocol were not conducted because the USFWS informed the applicant that it would assume that the species is present on the project site and that mitigation would be required.

7. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

7.1 Topography and Hydrology

The project site is essentially level, with the exception of the mounds of fill material that were deposited on the Bellevue Ranch 8 project site. All parcels within the project site have been graded and have been disked and routinely harvested and/or mowed over the years for the production of volunteer hay crops, and as necessary to control fuels. The western portion of the project site drains to the shallow roadside ditch along Dutton Meadows.

7.2 Plant Communities and Associated Wildlife Habitats

M&A compiled a list of plant species observed on the project site on June 15, 2018 (Table 1). Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Table 2 is a list of wildlife species observed on the project site. Nomenclature for wildlife follows CDFW's *Complete list of amphibian, reptile, bird, and mammal species in California* (2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

The plant communities found onsite are primarily ruderal herbaceous habitats, that is, communities that are a result of human influence and disturbance to the natural environment. There is a shallow roadside ditch along Dutton Meadows. The project site does not currently support any seasonal wetland habitats. Below we discuss the plant communities found on the project site.

7.2.1 RUDERAL HERBACEOUS HABITAT

This project site is dominated by ruderal herbaceous habitat. Ruderal (weedy) communities are assemblages of plants that thrive in waste areas, intensively maintained urban and agrarian landscapes and other sites that have been disturbed by human activity. Ruderal herbaceous species are often associated where undesirable or competitive vegetation is frequently suppressed by mowing, disking, and/or spraying during the growing season.

Ruderal habitat occurs throughout the project site. Dominant grass and forb species within this habitat include slender wild oat (*Avena barbata*), perennial ryegrass (*Festuca perennis*), ripgut grass (*Bromus diandrus*), bindweed (*Convolvulus arvensis*), Harding grass (*Phalaris aquatica*), bristly ox-tongue (*Helminthotheca echioides*), common vetch (*Vicia sativa*), cheeseweed (*Malva parviflora*), and cut-leaf geranium (Geranium dissectum). As noted above, the majority of the project site has been disced and routinely harvested and/or mowed over the years for the production of volunteer hay crops, and as necessary to control fuels.

There are a few trees growing on the project site and along Dutton Meadows and Hearn Avenue, including Northern California black walnut (*Juglans hindsii*), Oregon white oak (*Quercus garryana*), redwood (*Sequoia sempervirens*), Lombardy poplar (*Populus nigra italica*), weeping willow (*Salix babylonica*), and pine trees (*Pinus* sp.).

Typically, ruderal communities provide habitat for those animal species adapted to man. Wildlife species observed on the project include Anna's hummingbird (*Calypte anna*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), house finch (*Haemorhous mexicanus*), western fence lizard (*Sceloporus occidentalis*), and Botta's pocket gopher (*Thomomys bottae*), among others.

7.2.2 ROADSIDE DITCH

There is a shallow 2-foot wide roadside ditch along Dutton Meadows. This ditch is highly ephemeral and appears to only convey water during significant storm events. This ditch was excavated in uplands along the road, and is dominated by upland vegetation, such as slender wild oat, goose grass (*Galium aparine*), soft chess (*Bromus hordeaceus*), summer cottonweed (*Epilobium brachycarpum*), and bindweed. There are a few scattered wetland plant species growing in the ditch including common velvet grass (*Holcus lanatus*), Himalayan blackberry (*Rubus armeniacus*), and tall flatsedge (*Cyperus eragrostis*); however, hydrophytic vegetation is not dominant, and therefore this ditch is not considered a wetland feature. In addition, as stated in the 2015 Clean Water Rule, *ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands* or d*itches that do not flow, either directly or through another water, into [a traditional navigable water, interstate water, or the territorial seas]*, are not considered waters of the U.S. (§ 230.3(s)(2)(iii)). Therefore, the roadside ditch along Dutton Meadows is not considered a jurisdictional feature.

7.3 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development.

Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The proposed project will not interfere with the movement of native wildlife. It is not within a regionally or locally significant wildlife corridor. As illustrated in Figures 2 and 3, the project site is surrounded by development, thus there is no corridor value to/from or between regionally significant open spaces. Wildlife species not adapted to living in close quarters with humans, would not be found on or using the project site. Finally, the project site has been completely enclosed by a tall chain-link fence for almost a decade making it most unlikely that mammals could use the site as a significant wildlife corridor. ***Thus, M&A concludes that the construction of the proposed project would not result in significant adverse impacts to regionally or locally important wildlife corridors.***

8. SPECIAL-STATUS SPECIES DEFINITION

8.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq*.) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in most cases, would qualify for State listing, and CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a

case by case basis due to local significance or recent biological information (more on CNPS Rank species below);

- migratory nongame birds of management concern listed by the USFWS (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFW (2016);

- animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

- bat Species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "RED OR HIGH." This priority is justified by the WBWG as follows: "Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

In the paragraphs below, we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federally listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFW prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an "Inventory" of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the Fish and Game Code and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern and are reviewed by CDFW and maintained on "watch lists."

Additionally, in 2006 CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- .2 is "fairly endangered in California (20-80% of occurrences threatened)";
- .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

8.2 Potential Special-Status Plant Species on the Project Site

Figure 4 provides a graphical illustration of the known records for special-status plant species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. As reported in the Dutton Meadows Project Draft Subsequent Environmental Impact Report (January 2005 -SCH #2002092016), protocol level rare plant surveys were conducted at the project site in 2000 through 2003 prior to site grading activities. Surveys for special-status plant species were conducted using methods consistent with the then current CDFG guidelines for assessing the effects of proposed developments on rare and endangered plants and plant communities. The surveys were conducted within the 'window' during which virtually all target species were either in flower or were readily identifiable. Field surveys for special-status plants were conducted by thoroughly searching each wetland and conducting a transect survey of the annual grassland habitats. No

federal or state listed species were observed during any of the surveys conducted on the project site (Stromberg 2003, Olberding 2003).

The project site falls within a geographic region designated by the USFWS and the Corps as the *Santa Rosa Plain*. The Santa Rosa Plain has a number of state and federally listed species and there are regulatory agency rules that govern how projects must evaluate impacts to wetlands and listed species. Due to sensitivity of federally and state-listed species known from the Santa Rosa Plain, we discuss these species further below.

8.2.1 SONOMA SUNSHINE

Sonoma sunshine (*Blennosperma bakeri*) is a federal and state-listed endangered plant species. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site outside the *Blennosperma bakeri* Southern Core Area (Figure 5). This annual member of the sunflower family is found in vernal pools and grassland habitats in the Santa Rosa Plain and from the Sonoma area. Sonoma sunshine flowers from March through May. It is threatened by urbanization, grazing and agriculture.

The closest CNDDB record for Sonoma sunshine is located 1.8 miles southwest of the project site (Occurrence No. 37) (Figure 4). Sonoma sunshine plants were not detected during appropriately timed rare plant surveys conducted in 2001 and 2002 prior to site grading. Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve. ***Pursuant to the CEQA, with mitigation that includes vernal pool creation and preservation of extant vernal pool endangered plant habitat at the Gobbi Preserve, implementation of the proposed project will not result in significant impacts to federally listed plants.***

8.2.2 BURKE'S GOLDFIELDS

Burke's goldfields (*Lasthenia burkei*) is a federally and state listed endangered species protected pursuant to the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) respectively. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site outside the *Lasthenia burkei* Southern Core Area (Figure 6).

This small, slender annual member of the sunflower family is found in meadows, seeps, and vernal pools. The yellow flowers of the Burke's goldfields bloom from April through June. This species is known only from southern portions of Lake and Mendocino counties, the western portion of Napa County, and from northeastern Sonoma County (the Santa Rosa Plain). Historically, 39 colonies were known from the Santa Rosa Plain, two colonies were known from Lake County, and one colony was known in Mendocino County. The occurrence in Mendocino County is most likely extirpated. From north to south in the Santa Rosa Plain, the species occurs from north of the community of Windsor to east of the city of Sebastopol. It is threatened by agriculture, urbanization, development, grazing, road widening, road maintenance, and non-native plants.

The closest CNDDB record for Burke's goldfields is located 2.2 miles south of the project site (Occurrence No. 43) (Figure 4). Burke's goldfields were not detected during appropriately timed

rare plant surveys conducted in 2001 and 2002 prior to site grading. Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve. ***Pursuant to the CEQA, with mitigation that includes vernal pool creation and preservation of extant vernal pool endangered plant habitat at the Gobbi Preserve, implementation of the proposed project will not result in significant impacts to federally listed plants.***

8.2.3 SEBASTOPOL MEADOWFOAM

Sebastopol meadowfoam (*Limnanthes vinculans*) is a federal- and state-listed endangered species. It is also a CNPS Rank 1B.1 species. The USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) designates the project site outside the *Limnanthes vinculans* Southern Core Area (Figure 7).

This annual member of the meadowfoam family blooms April through May, and is found in meadows and seeps, seasonally wet grasslands, and vernal pools. Although the first leaves are narrow and undivided, leaves on the mature plant have three to five undivided leaflets along each side of a long stalk (petiole). The shape of the leaves distinguishes Sebastopol meadowfoam from other members of the *Limnanthes* genus. It is threatened by urbanization, agriculture, grazing, non-native plants, and vehicles. The only known natural occurrences of this species have been recorded in Sonoma County.

The closest CNDDB record for Sebastopol meadowfoam is located 1.0 mile west of the project site (Occurrence No. 1) (Figure 4). Sebastopol meadowfoam plants were not detected during appropriately timed rare plant surveys conducted in 2001 and 2002 prior to site grading. Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve. ***Pursuant to the CEQA, with mitigation that includes vernal pool creation and preservation of extant vernal pool endangered plant habitat at the Gobbi Preserve, implementation of the proposed project will not result in significant impacts to federally listed plants.***

8.3 Potential Special-Status Wildlife Species on the Project Site

Figure 4 provides a graphical illustration of the known records for special-status wildlife species within 3 miles of the project site and helps readers visually understand the number of sensitive species known to occur near the project site. A search of the CNDDB found five records for special-status wildlife species occurring within 3 miles of the project site (Table 4). The only species with potential to occur on the project site are discussed below.

8.3.1 CALIFORNIA TIGER SALAMANDER

The project site is located within the known range of the Sonoma County "Distinct Population Segment" (DPS) of CTS. Under the FESA, the USFWS emergency listed the Sonoma County DPS as endangered on July 22, 2002. The USFWS formalized the listing of the Sonoma County DPS of CTS as endangered on March 19, 2003 (USFWS 2003). The USFWS determined that this population is significantly and immediately imperiled by a variety of threats including habitat destruction, degradation, and fragmentation due to urban development, road construction, pesticide drift, collection, and inadequate regulatory mechanisms. In addition, it was determined that this population could face extinction because of naturally occurring events (e.g., fires,

droughts) due to the small and isolated nature of the remaining breeding sites and low number of individuals in this DPS.

In 2011, the USFWS designated revised critical habitat for the Sonoma County DPS of CTS. In total, approximately 47,383 acres (19,175 hectares) of land were designated as Critical Habitat for the Sonoma County DPS of CTS under the revised Final Rule (USFWS 2011). ***The project site is located within this mapped critical habitat*** (Figure 8). Per the USFWS Recovery Plan for the Santa Rosa Plain (USFWS 2016), the project site is located within the Llano Crescent-Stony Point "Core Area" (Figure 9).

On March 4, 2010, CTS was also state-listed as a threatened species under the CESA. Proposed projects may not impact CTS without incidental take authority from both the USFWS and the CDFW. Prior to implementing a project that would result in "take" (i.e., to harm, harass, or kill) of CTS, the USFWS must prepare an incidental take permit pursuant to either Section 7 or Section 10 of the FESA. Similarly, projects that could result in take of CTS also require incidental take authority from the CDFW pursuant to the CESA.

CTS occur in grasslands and open oak woodlands that provide suitable over-summering and/or breeding habitats. M&A has worked with populations that are almost at sea level (Catellus Site in the City of Fremont) to almost 2,900 feet above sea level (Kammerer Ranch, East Santa Clara County). CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. While 1.3 miles is typically considered the maximum migration distance of CTS to/from their breeding pools to upland over-summering habitat, there is literature suggesting that the CTS could migrate up to 1.5 miles from their breeding pools. This migration distance is reported by the USFWS' Recovery Plan for the Santa Rosa Plain (USFWS 2016) where it states: Based on distances travelled per night, Searcy and Shaffer (2011) estimated that Central CTS are physiologically capable of moving up to 2.4 km (1.5 mi) each breeding season, with an average dispersal distance estimated to be 0.56 km (1,840 ft). Orloff (2007) found that the majority of CTS dispersed at least 0.5-mile (0.8 km) from the breeding site, with a smaller number of salamanders appearing to move even farther—from 1.2 to 2.2 km (0.75 to 1.3 mi) between breeding ponds and upland habitat. M&A biologists Mr. Geoff Monk and Ms. Sarah Lynch have observed CTS migrating up to 0.6-mile from their underground refugia to breeding ponds (personal data from Livermore, California collected in 1997). As such, unobstructed migration corridors are important component of CTS habitat.

In Sonoma County, CTS emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of CTS do not occur unless it has been raining hard and continuously for several hours. Typically, for larger movements of CTS to occur, nighttime temperatures also must be above 48° F (G. Monk and S. Lynch pers. observations). Other factors that encourage larger movements of CTS to their breeding ponds include flooding of refugia (observed by G. Monk in Springtown, east Alameda County in 1997) as occurs after significant rainfall events.

During the spring, summer, and fall months, most known populations of the CTS throughout this species range in California predominately use California ground squirrel (*Otospermophilus*

beechyi) burrows as over summering habitat (G. Monk personal observation). However, in Sonoma County where California ground squirrel populations are scarce to non-existent, subterranean refugia likely include Botta's pocket gopher burrows, deep fissures in desiccated clay soils, and debris piles (e.g., downed wood, rock piles).

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. In such locations, CTS attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about ¾ the diameter of a dime to the full diameter of a dime.

Occasionally CTS are found breeding in slow moving streams or ditches. In 1997, Mr. G. Monk observed CTS breeding in large, still ditches in Fremont, California. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain CTS egg attachment through hatching, and thus, are not usually used successfully by CTS for breeding (G. Monk and S. Lynch, pers. observations). Similarly, streams and/or ditches that support predators of CTS or their eggs and larvae such as fish, bullfrogs (*Lithobates catesbeiana*), red swamp crayfish (*Procambarus clarkii*), or signal crayfish (*Pacifastacus leniusculus*), almost never constitute suitable breeding habitat.

In most of the range of CTS, seasonal wetlands that are used for breeding typically must hold water into the month of May to allow enough time for larvae to fully metamorphose. Typically, in Sonoma County pools that are 16 inches or deeper in the peak winter months will remain inundated long enough to provide good breeding conditions for CTS. In dry years, seasonal wetlands, especially shallower pools, may dry too early to allow enough time for CTS larvae to successfully metamorphose. Under such circumstances, desiccated CTS larvae are often found in dried pools. In addition, as pools dry down to very small areas of inundation, CTS larvae become concentrated and are very susceptible to predation.

The closest adult CTS observation (CNDDB Occurrence No. 1105) is located 440 feet northwest of the project site. There is an additional adult CTS observation (CNDDB Occurrence No. 1243) that is located 1,020 feet southwest of the project site. The closest breeding CTS location is 1,100 feet west of the project site (CNDDB Occurrence No. 483). In compliance with the conditions in the USFWS's BO for the Specific Plan, and CDFG's Agreement with Gobbi Mitigation Preserve LLC, impacts to CTS were fully mitigated for this project in compliance with the USFWS's BO for the Specific Plan Area, via purchase of mitigation credits from the Gobbi Preserve (also see USFWS applicability). The Gobbi Preserve is located within the Llano Crescent-Stony Point "Core Area."

According to the *Programmatic Biological Opinion* (USFWS 2007), a 2:1 mitigation ratio is required for projects that are greater than 500 feet and within 2,200 feet of a known breeding site, or within 500 feet of an adult occurrence. In compliance with the conditions in the USFWS' BO, the Corps' permit and RWQCB Water Quality Certification, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 23.92 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, providing 2:1 mitigation for impacts to 11.96 acres of suitable CTS habitat on the Bellevue

Ranch 8 parcels. Similarly, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 12.15 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, thus providing 2:1 mitigation for impacts to 6.07 acres of potential CTS habitat on the Minoia Property. Finally, by agreement with Dutton Village Partners LLC, Trumark Companies LLC, and DM Associates, and Hern Avenue LLC, 0.38 acre of CTS mitigation credits were purchased from the Gobbi Mitigation Preserve LLC for to compensate for impacts to listed species that will occur when Minoia and Pelitz Park Land is developed and dedicated to the City of Santa Rosa as a component of the Dutton Meadows Specific Plan development project. ***Accordingly, all impacts to CTS have been adequately mitigated.***

8.3.2 WHITE-TAILED KITE

The white-tailed kite (*Elanus caeruleus*) is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13). The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Although the surrounding terrain may be semiarid, kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*) accounting from between 50-100% of their diet (Shuford 1993).

The nearest CNDDB record for this species is located 0.1 mile east of the project site (Occurrence No. 77). The project site provides suitable hunting grounds for white-tailed kites, and the trees on and immediately adjacent to the project site provide potentially suitable nesting habitat. ***Accordingly, impacts to white-tailed kite are regarded as potentially significant pursuant to the CEQA.*** Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

9. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss their pertinence to the proposed development.

9.1 Federal Endangered Species Act

The FESA forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the NMFS. The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the USFWS and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather, they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the

geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, for the applicant to obtain an "incidental take permit," the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

9.1.1 Responsible Agency

FESA gives regulatory authority to the USFWS for federally listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally listed marine mammals and anadromous fish.

9.1.2 APPLICABILITY TO THE PROPOSED PROJECT

The project site does not provide fisheries habitat; thus, the project would not result in impacts to federally listed anadromous fish species. As such, consultation with the NMFS for the proposed project is not warranted.

Protocol level rare plant surveys were conducted at the project site in 2000 and 2001 prior to site grading activities, and no endangered plant species were observed. Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve.

The *Biological Assessment* for the Dutton Meadow Development Project was prepared by Olberding Environmental, Inc. and Laurence P. Stromberg, Ph.D. (dated June 11, 2003). On August 5, 2003 the Corps initiated Section 7 consultation with USFWS for the Dutton Meadows subdivision. On May 24, 2005 the USFWS issued a Biological Opinion (BO) for the Dutton Meadows Subdivision Phases Two Through Five, Santa Rosa, Sonoma County, California (Corps File No. 26342N). The USFWS BO covered the entire Dutton Meadows Specific Plan Area that includes the Bellevue Ranch 8 and Minoia Properties (the current "project site").

Per the USFWS's BO, to compensate for adverse effects resulting from development of the Dutton Meadows Specific Plan Area (CH2MHill 2005) to 54.43 acres of California tiger salamander upland dispersal, foraging and "aestivation" (over-summering) habitat, and to 4.37 acres of seasonal wetlands and a drainage ditch, the applicant was required to purchase CTS preservation and habitat enhancement credits from the 108.8-acre "Gobbi Preserve No. 2" (" Gobbi Preserve"). The Gobbi Preserve was to be permanently protected and dedicated by its sponsor, the Gobbi Mitigation Preserve LLC, to the CDFG.

The Gobbi Preserve is located within the Llano Crescent-Stony Point "Core Area" designated in the Santa Rosa Plain Conservation Strategy (USFWS 2016). The Gobbi Preserve is in proximity to several other mitigation banks and preserves including the Gobbi Ranch Mitigation Site (Gobbi Preserve No. 1), Southwest Santa Rosa Vernal Pool Preservation Bank (aka Engle Bank), Hale Mitigation Bank, and the Carinalli-Todd Road Mitigation Bank. Thus, the dedication and preservation of the Gobbi Preserve that occurred to compensate for impacts to "suitable" special-status habitats on the project site, provides a regionally significant contribution to the preservation system being established to both preserve and promote the continued existence of special status species on the Santa Rosa Plain.

To ensure the permanent protection of the Gobbi Preserve, the CDFG and Gobbi Mitigation Preserve LLC entered into an Agreement (Agreement No. 1802-2006-003-03) to formally establish the Gobbi Preserve. This Agreement establishes that the Gobbi Preserve was being created/preserved as compensatory mitigation for impacts to suitable CTS habitat, suitable endangered vernal pool plant species, and for impacts to 4.37 acres of seasonal wetland habitat that would result from development of the 56.88-acre Dutton Meadows Specific Plan Area, which includes the Bellevue Ranch 8 property and the Minoia Property (the project site). Meeting the mitigation compensation goals established for the Gobbi Preserve, in the fall of

2005, Gobbi Preserve LLC constructed approximately 5.66 acres of vernal pools, connecting swales, and other seasonal wetlands in the Gobbi Preserve, creating California tiger salamander breeding and upland habitats, and habitat for listed vernal pool plant species. The Gobbi Preserve now supports a robust CTS population and significant colonies of listed vernal pool plants including Sebastopol meadowfoam, Sonoma sunshine, and Burke's goldfields (G. Monk personal observations circa 2007).

In compliance with the conditions in the USFWS' BO, the Corps' permit and RWQCB Water Quality Certification, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 23.92 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, providing 2:1 mitigation for impacts to 11.96 acres of suitable CTS habitat on the Bellevue Ranch 8 parcels. Similarly, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 12.15 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, thus providing 2:1 mitigation for impacts to 6.07 acres of potential CTS habitat on the Minoia Property. Finally, by agreement with Dutton Village Partners LLC, Trumark Companies LLC, and DM Associates, and Hern Avenue LLC, 0.38 acre of CTS mitigation credits were purchased from the Gobbi Mitigation Preserve LLC for to compensate for impacts to listed species that will occur when Minoia and Pelitz Park Land is developed and dedicated to the City of Santa Rosa as a component of the Dutton Meadows Specific Plan development project. ***Therefore, all impacts to suitable habitats for federally listed species that would be affected by the proposed project, have been adequately mitigated pursuant to the compliance requirements set forth in the USFWS' BO prepared for the Dutton Meadows Specific Plan Area.***

Accordingly, potentially significant adverse impacts to federally listed plants and animals from the development of the project site have mitigated to a level regarded as less than significant pursuant to the CEQA.

9.2 Federal Migratory Bird Treaty Act

The MBTA of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;

- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

9.2.1 Applicability to The Proposed Project

Common songbirds and raptors, such as white-tailed kite, that could nest in the trees on the site or directly adjacent would be protected pursuant to the MBTA. As long as there is no direct mortality of species protected pursuant to the MBTA caused by development of the site, there should be no constraints to development of the site. Preconstruction surveys will be conducted prior to any grading or tree removal activities. To comply with the MBTA, non-disturbance buffers would have to be established around any active nesting site and would have to be of sufficient size to protect the nesting birds from harm. Upon completion of nesting, the buffers could be removed, and the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites in the Impacts and Mitigations section below.

9.3 **California Endangered Species Act**

9.3.1 Section 2081 of the California Endangered Species Act

In 1984, the state legislated the CESA (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFW determines that a proposed project could impact a State listed threatened or endangered species, CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFW and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFW will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant’s objectives to the greatest extent possible; and,
    c) capable of successful implementation; and,

4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a HCP as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy*"* federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal incidental take permit) pursuant to the FESA, to submit the federal opinion or permit to CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFW determines that the federal incidental take permit is consistent with state law, and that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state CESA permit under Section 2081(b). Section 2081(b) is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

9.3.2 Applicability to the Proposed Project

Several state-listed plant and wildlife species are known to occur in the region of the project site (Tables 3 and 4). No state-listed plant species have been identified on the project site during protocol surveys conducted in 2001 and 2002 prior to grading.

The CDFG and Gobbi Mitigation Preserve LLC established an Agreement (1802-2006-003-03) to create the Gobbi Preserve ("Preserve") in Sonoma County as compensatory mitigation for

impacts to CTS habitat, habitat for Sebastopol meadowfoam, which is a Federal and State endangered species, and impacts to 4.37 acres of seasonal wetland habitat resulting from development at the 56.88-acre Dutton Meadows Specific Plan area, which includes the Bellevue Ranch 8 property and the Minoia Property. This agreement specifically states:

> *Agreement between Gobbi Mitigation Preserve, LLC and the California Department of Fish and Game. Ref. No. 1802-2006-003-03*
>
> *This agreement ("Agreement") is made and entered into by and between Gobbi Mitigation Preserve, LLC, a California Limited Liability Company ("Gobbi LLC"), and the California Department of Fish and Game ("DFG"), a department of the State of California. This Agreement is to establish the Gobbi Preserve ("Preserve") site in Sonoma County (described in Exhibits A, Band C) as compensatory mitigation for impacts to habitat for the California tiger salamander (Ambystoma californiense) ("CTS"), which is a Federal endangered species and a State designated Species of Special Concern, and habitat for Sebastopol meadowfoam (Limnanthes vinculans), which is a Federal and State endangered species, and impacts to 4.37 acres of seasonal wetland habitat subject to State and Federal jurisdiction through construction of at least 5.46 acres of new seasonal wetlands (vernal pools and swales) related to development of single and multiple-family housing, parks, and commercial and retail development at the 56.88-acre Dutton Meadows Specific Plan area, which includes the following properties:*
>
> *• Dutton Village Partners, LLC property located at 2732 Dutton Meadow (12.05 acres, APN 043-071-029);*
>
> *• DM Associates, LLC property located at 2684 Dutton Meadow (8.00 acres, APN 043-071-007), 2666 Dutton Meadow Drive (3.55 acres., APN 043-071-022) and 2650 Dutton Meadow Drive (0.52-acre, APN 043-071-023);*
>
> *• Peletz/Denenberg property located at 1130 Hearn A venue (2.49 acres, APN 043-191-02 l) and a 17.0 I-acre parcel (APN 043-200-004) with no street address;*
>
> *• Minoia Property located at 1112 Hearn Avenue (4.68 acres, APN 043-191-024) and 1200 Hearn Avenue (l. 93 acres, APN 043-191-016); and*
>
> *• Nelson Property located at 976 Hearn Avenue (0.21 -acre, APN 043-191-018), 980 Hearn Avenue (5.65 acres, APN 043-191-019) and 1004 Hearn Avenue (0.23-acre, APN 043- 191 -020).*
>
> *It is acknowledged that the purpose of this Agreement is to set forth the obligations and rights of DFG and Gobbi LLC with respect to the compensatory mitigation of the Project, establishment and management of the Preserve and the significant environmental impacts*

on CTS and its habitat, habitat for Sebastopol meadowfoam and Sonoma sunshine and seasonal wetland habitat.

In compliance with the conditions in the CDFG Agreement, Bellevue Ranch 8 (DM Associates, LLC) purchased 23.92 acres of preservation and CTS mitigation credits from the Gobbi Preserve, thus providing 2:1 mitigation for impacts to 11.96 acres of potential habitat on the Bellevue Ranch 8 parcels. Minoia Property purchased 12.15 acres of preservation and CTS mitigation credits from the Gobbi Preserve, thus providing 2:1 mitigation for impacts to 6.07 acres of potential habitat on the Minoia Property. In addition, DM Associates purchased 0.38 acre of preservation and CTS mitigation credits from the Gobbi Preserve for the Minoia Park Land. ***Therefore, all impacts to state listed species from development of the project site under consideration herein have been adequately mitigated.***

9.4 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (MBTA).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under CDFG Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite and golden eagle (*Aquila chrysaetos*), are protected under CDFG Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

9.4.1 Applicability to the Proposed Project

Raptors that potentially could be impacted by the project include white-tailed kite, and common birds such as mourning dove (*Zenaida macroura*), California scrub jay (*Aphelocoma californica*), and house finch (*Haemorhous mexicanus*), among others. Preconstruction nesting surveys would have to be conducted to ensure that there is no direct take of nesting birds including their eggs, or young. Any active nests that were found during preconstruction surveys would have to be avoided by the project. Suitable non-disturbance buffers would have to be established around nest sites until the nesting cycle is complete. Please review specific requirements for avoidance of nest sites for nesting bird species in the Impact and Mitigation section.

9.5 Santa Rosa Plain Conservation Strategy (USFWS 2005)

The Federal listing of CTS resulted in uncertainty for many local jurisdictions, landowners, and developers about its effects on their current and proposed activities. Because of this uncertainty, local private and public interest groups met with the USFWS to discuss a cooperative approach to protecting CTS, while allowing currently planned and future land uses to occur within its range. The result of these discussions was the creation of the Final Santa Rosa Plain Conservation Strategy (USFWS 2005).

The purpose of the Strategy is threefold: (1) to establish a long-term conservation program sufficient to mitigate potential adverse effects of future development on the Santa Rosa Plain,

and to conserve and contribute to the recovery of the listed species and the conservation of their sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of Sonoma County California tiger salamander and listed plants that may occur in the course of carrying out a broad range of activities on the Plain. The Strategy establishes interim and long-term mitigation requirements and designates conservation areas where mitigation will occur. It describes how habitat preserves will be established and managed. It also includes guidelines for translocation, management plans, adaptive management and funding. The Strategy identifies areas within the Plain that should be conserved to benefit the listed plants and Sonoma County California tiger salamander. Their designation was based upon the following factors: 1) known distribution of the California tiger salamander; 2) the presence of suitable habitat; 3) presence of large blocks of natural or restorable land; 4) proximity to existing Preserves; and 5) known location of the listed plants. The designation of conservation areas also generally attempted to avoid future development areas established by urban growth boundaries and city general plans. The objective of these conservation areas is to ensure that preservation occurs throughout the distribution of the species.

The goal of the *Conservation Strategy* is to preserve a large enough area of suitable habitat to ensure the conservation of CTS and listed plants and contribute to their recovery. In order to do this, areas are identified within the Santa Rosa Plain that currently do or potentially could support CTS and listed plants, as well as the areas that currently do or likely will support development. This information was used to develop appropriate "conservation areas" and requirements as well as mitigation guidelines and requirements, in order to "provide consistency, timeliness and certainty for permitted activities."

Proposed projects within the potential CTS range will fall into one of three categories:

a.) Projects within 1.3 miles of a known CTS breeding site, and likely to impact CTS breeding and/or upland habitat; or
b.) Projects beyond 1.3 miles from a known CTS breeding site, but within the "Potential for Presence of California tiger salamander" or "Potential for Presence of California tiger salamander and Plants"; or
c.) Projects where "Presence of California tiger salamander is Not Likely".

Different mitigation ratios are recommended for each of these categories.

The *Conservation Strategy* recommends that projects filling *potential* listed plant habitat should mitigate these impacts via the preservation of existing occupied habitat at a 1:1 ratio, and projects filling *known* listed plant habitat should mitigate these impacts via the preservation of existing occupied habitat at a 2:1 ratio, as per a Programmatic Biological Opinion (USFWS 1998) in effect at the time of the *Conservation Strategy* was prepared in 2005. The USFWS' 2007 Programmatic Biological Opinion (USFWS 2007) has since superseded the 1998 Programmatic Biological Opinion.

The *Conservation Strategy* recommends that projects filling wetlands should mitigate these impacts via the preservation of wetlands at a minimum of a 1:1 replacement ratio, depending on

the quality of the filled wetlands, as per a Programmatic Biological Opinion (USFWS 1998) in effect at the time of the *Conservation Strategy* was prepared in 2005. The 1998 Programmatic Biological Opinion was superseded by a Programmatic Biological Opinion prepared by the USFWS for the Corps in 2007 (USFWS 2007). Currently the 2007 *Programmatic Biological Opinion* is under revision to incorporate the elements of the Recovery Plan for the Santa Rosa Plain (USFWS 2016)(See Recovery Plan below). This revised *Programmatic Biological Opinion* is currently under revision has not been released to the public at this time (Ms. Sahrye Cohen (Corps), pers. comm. with Mr. Geoff Monk on March 23, 2017).

9.5.1 APPLICABILITY TO THE PROPOSED PROJECT

Mitigation credits were purchased in accordance with the USFWS's BO for the Dutton Meadows Subdivision Specific Plan Area, dated May 24, 2005. This mitigation was implemented prior to the USFWS' publication of the Conservation Strategy (USFWS 2005). Regardless, mitigation implemented is consistent with the goals and objectives established for listed species in the Santa Rosa Plain in the USFWS's 2005 Conservation Strategy (USFWS 2005), the USFWS Programmatic Biological Opinion (USFWS 2007), and the USFWS' Santa Rosa Plain Recovery Plan (USFWS 2016). ***As such, the project has mitigated all impacts to federally listed species in compliance with the Federal Endangered Species Act to a level regarded as less than significant pursuant to the CEQA.***

9.6 Santa Rosa Plain Programmatic Biological Opinion (USFWS 2007)

The *Programmatic Biological Opinion* (USFWS 2007) is based on the biological framework presented in the *Conservation Strategy*. This *Programmatic Biological Opinion* replaced (supersedes) the July 17, 1998 *Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain* (USFWS 1998), that was prepared for listed plant species on the Santa Rosa Plain. Projects that require a Corps permit, that remain consistent with objectives stated in the *Conservation Strategy*, can be appended to the *Programmatic Biological Opinion* at the discretion of the USFWS. Projects that are appended to the *Programmatic Biological Opinion* will be provided individual take authorization for impacts to federally listed species.

<u>Impacts to Listed Plant Species</u>

Seasonal wetlands are considered "suitable habitat" for listed plants if they are within the range of listed plants occurring on the Santa Rosa Plain. Seasonal wetlands are considered "occupied habitat" if surveys have been conducted following USFWS protocols and listed species are recorded on the site, or if listed species have been recorded on the site in the past. Even if two years of protocol rare plant surveys have been conducted proving absence of federally listed plants, seasonal wetlands are still regarded as "suitable" listed plant species habitat. The following mitigation to impacts ratios are required to adhere to the *Programmatic Biological Opinion* (USFWS 2007):

Burke's Goldfields

- Impacts to Occupied Habitat: 3:1 occupied or established habitat.

- Impacts to Suitable Habitat: 1:1 occupied or established habitat AND 0.5:1 established habitat.

Sonoma Sunshine

- Impacts to Occupied Habitat: 3:1 occupied or established habitat.

- Impacts to Suitable Habitat: 1:1 occupied or established habitat AND 0.5:1 established habitat.

Sebastopol Meadowfoam

- Impacts to Occupied Habitat: 2:1 occupied or established habitat.

- Impacts to Suitable Habitat: 1:1 occupied or established habitat AND 0.5:1 established habitat.

In addition, as per the *Programmatic Biological Opinion* (USFWS 2007), for impact sites with occupied or suitable habitat that are north of Santa Rosa Creek, the Preserve must support Burke's goldfields and/or Sonoma sunshine. For impact sites with suitable habitat that are located south of Santa Rosa Creek, the Preserve must support Sebastopol meadowfoam, Burke's goldfields, and/or Sonoma sunshine.

Impacts to California Tiger Salamander

For projects that may affect CTS, mitigation requirements will apply to the entire Project area, except the portions of the project site that are covered with existing hardscape. The USFWS is requiring the same mitigation ratios for impacts to mapped CTS Critical habitat. The following mitigation to impacts ratios are required by the *Programmatic Biological Opinion* (USFWS 2007) for project sites that affect Corps regulated waters of the U.S.:

Mitigation of 3:1

For projects that are within 500 feet of a known breeding site.

Mitigation of 2:1

For projects that are greater than 500 feet and within 2,200 feet of a known breeding site, and for projects beyond 2,200 feet from a known breeding site, but within 500 feet of an adult occurrence.

Mitigation of 1:1

For projects that are greater than 2,200 feet and within 1.3 miles of a known breeding site.

Mitigation of 0.2:1

For projects that are greater than 1.3 miles from a known breeding site and greater than 500 feet from an adult occurrence, but excluding "No Effect" areas.

In addition, as per the *Programmatic Biological Opinion*, "projects and other activities will incorporate measures to minimize their potential direct and indirect effects on CTS. Minimization measures may vary based on environmental factors and site location as determined by the USFWS and [the CDFW]."

9.6.1 APPLICABILITY TO THE PROPOSED PROJECT

Protocol level rare plant surveys were conducted at the project site in 2000 and 2001 prior to site grading activities, and no special-status plant species or endangered plant species were observed. Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve.

On May 24, 2005 the USFWS issued a Biological Opinion (BO) for the Dutton Meadows Subdivision Phases Two Through Five, Santa Rosa, Sonoma County, California (Corps File No. 26342N). The USFWS BO covered the Bellevue Ranch Property and the Minoia Property. In compliance with the conditions in the USFWS BO, Bellevue Ranch 8 (DM Associates, LLC) purchased 23.92 acres of preservation and CTS mitigation credits from the Gobbi Preserve, thus providing 2:1 mitigation for impacts to 11.96 acres of potential habitat on the Bellevue Ranch 8 parcels. Minoia Property purchased 12.15 acres of preservation and CTS mitigation credits from the Gobbi Preserve, thus providing 2:1 mitigation for impacts to 6.07 acres of potential habitat on the Minoia Property. In addition, the Minoia Property purchased 0.38 acre of preservation and CTS mitigation credits from the Gobbi Preserve for the Minoia Park Land. All impacts to federally listed species were mitigated as required by the USFWS.

This mitigation was implemented prior to the USFWS publication of the *Programmatic Biological Opinion* (USFWS 2007). Regardless, mitigation implemented is consistent with the goals and objectives established for listed species in the Santa Rosa Plain in the USFWS Programmatic Biological Opinion (USFWS 2007) and the USFWS' Santa Rosa Plain Recovery Plan (USFWS 2016). ***As such, the project has mitigated all impacts to federally listed species in compliance with the Federal Endangered Species Act to a level regarded as less than significant pursuant to the CEQA.***

9.7 USFWS Recovery Plan for the Santa Rosa Plain (USFWS 2016)

In December 2016, the USFWS adopted a formal Recovery Plan for the Santa Rosa Plain (Recovery Plan) addressing recovery efforts necessary to protect and otherwise eventually recover the federally listed Sonoma County Distinct Population Segment of CTS and three vernal pool plants: *Blennosperma bakeri* (Sonoma sunshine)*; Lasthenia burkei* (Burke's goldfields)*; Limnanthes vinculans* (Sebastopol meadowfoam) (USFWS 2016). All four species are confined almost entirely to the Santa Rosa Plain. The Recovery Plan and its objectives are implemented through cooperative CEQA lead agencies, and through federal nexus agency consultations (e.g., Corps consultations) with the USFWS via Section 7 of the FESA. Any federal nexus agency that consults with the USFWS pursuant to Section 7 will obtain a letter of

no effect or a Biological Opinion that provides or denies "incidental take authority." Any conditions of a Biological Opinion issued to the Corps for a pending project are to become conditions of the Corps' permit authorization.

Pursuant to the FESA Incidental take includes loss of listed species' habitat or harm that could occur to a federal listed species. An Incidental Take Permit allows an otherwise legally sanctioned activity to proceed even if there could be a collateral impact to a federal listed species. Similarly, any Section 10 FESA consultation with the USFWS, which is allowed for in the FESA for all non-federal entities, that results in Incidental Take authority granted by the USFWS to the non-federal entity, would otherwise include provisions for compliance with the objectives of the Recovery Plan.

The USFWS has determined that the primary threats to the three listed vernal pool plants and the CTS on the Santa Rosa Plain is the reduction and fragmentation of habitat due to urban development, agricultural land conversion, and habitat degradation that modifies vernal pool hydrology, and colonization of seasonal wetlands by competitive invasive plants. Consequently, the Recovery Plan focuses on these threats. In order to downlist or delist the four species that are imperiled in the Santa Rosa Plain the threats to the species' habitat must be reduced or eliminated. The USFWS criteria for downlisting are based upon preservation of extant vernal pools systems and attending uplands that support wetland complexes. The USFWS has segmented the Santa Rosa Plain into "Core" and "Management Areas" (Figures 5-7) where species preservation, and habitat enhancement and management must occur to recover these four listed species. Core areas comprise the heart of the species historical (and current) range and represent central blocks of contiguously occupied habitat that function to allow for dispersal, genetic interchange between populations, and metapopulation dynamics. Management areas are occupied habitat peripheral to the species' Core areas.

[The following information has been obtained from various personal communications in 2016 and 2017 between Mr. G. Monk and Mr. Vincent Griego and/or Mr. Ryan Olah of the Sacramento Endangered Species Office of the USFWS]. The USFWS is now requiring that projects that impact federally listed plant species in Core habitats, and/or California tiger salamander Core habitat (Exhibits A and B), mitigate through preservation and enhancement of extant listed species habitats in the same Core Area where the impacts will occur. Mitigation for Core area species always takes precedence over Management area species. The USFWS is also now requiring that impacts to specific federally listed species' Management Areas, be mitigated in the affected species Core areas or its Management Areas as designated in the USFWS' 2016 Santa Rosa Plain Recovery Plan (USFWS 2016) (Ryan Olah pers. comm. with G. Monk, January 18, 2017).

9.7.1 APPLICABILITY TO THE PROPOSED PROJECT

The project site is located outside the Southern Core area for *Blennosperma bakeri, Lasthenia burkei* and *Limnanthes vinculans*, as identified in the USFWS' 2016 Recovery Plan for the Santa Rosa Plain (see Figures 5-7). Regardless, impacts to potential habitat for federally listed plants have been mitigated by the applicant via the purchase of mitigation credits from the Gobbi Preserve.

Per the USFWS *Recovery Plan for the Santa Rosa Plain* (USFWS 2016), the project site is located within the Llano Crescent-Stony Point "Core Area" (Figure 9). Thus, CTS mitigation credits must be purchased from a bank within that Core Area. The Gobbi Preserve is located within the Llano Crescent-Stony Point "Core Area." In compliance with the conditions in the USFWS BO on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 23.92 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, providing 2:1 mitigation for impacts to 11.96 acres of suitable CTS habitat on the Bellevue Ranch 8 parcels. Similarly, on July 7, 2006 Dutton Village Partners, LLC by agreement with DM Associates, LLC (a Trumark Homes affiliate), purchased 12.15 acres of CTS preservation mitigation credits from Gobbi Mitigation Preserve LLC, thus providing 2:1 mitigation for impacts to 6.07 acres of potential CTS habitat on the Minoia Property. Finally, by agreement with Dutton Village Partners LLC, Trumark Companies LLC, and DM Associates, and Hern Avenue LLC, 0.38 acre of CTS mitigation credits were purchased from the Gobbi Mitigation Preserve LLC for to compensate for impacts to listed species that will occur when Minoia and Pelitz Park Land is developed and dedicated to the City of Santa Rosa as a component of the Dutton Meadows Specific Plan development project.

Mitigation implemented is consistent with the goals and objectives established for listed species in the Santa Rosa Plain in the USFWS' Santa Rosa Plain Recovery Plan (USFWS 2016). ***As such, the project has mitigated all impacts to federally listed species in compliance with the Federal Endangered Species Act to a level regarded as less than significant pursuant to the CEQA.***

10. CITY OF SANTA ROSA TREE ORDINANCE

The Santa Rosa City Code, Chapter 17.24, has three articles that pertain to the protection of trees within the City of Santa Rosa to discourage the alteration, removal or relocation of trees, including any heritage, protected, or street tree, without a permit.

10.1.1.1 Article III – Prohibitions – Tree alteration, removal, relocation-Permit required.

Article III has provisions that protect trees which are defined as any woody plant with a single trunk diameter of 4 inches or more or a combination of multiple trunks having a total diameter of 8 inches or more. This article also protects the following types of trees:

(a) Heritage tree which includes any of the following trees, whether located on public or private property, at a diameter equal to or greater than those listed below:

Species	**Diameter**
Valley oak (*Quercus lobata*)	6
Coast live oak (*Quercus agrifolia*)	18
Black oak (*Quercus kelloggii*)	18
Oregon oak (*Quercus garryana*)	18
Canyon oak (*Quercus chrysolepis*)	18
Blue oak (*Quercus douglasii*)	6
Interior live oak (*Quercus wislizenii*)	18
Coast redwood (*Sequoia sempervirens*)	24
Bay (*Umbellularia californica*)	24

Madrone (*Arbutus menziesii*)	12
Douglas's fir (*Pseudotsuga menziesii*)	24
Red alder (*Alnus rubra*)	18
White alder (*Alnus rhombifolia*)	18
Big leaf maple (*Acer macrophyllum*)	24

(b) Protected tree which means any tree, including a heritage tree, designated to be preserved on an approved development plan or as a condition of approval of a tentative map, a tentative parcel map, or other development.
(c) Street tree which means any tree having a single trunk circumference greater than 6 and one-quarter inches or a diameter greater than 2 inches, a height of more than 6 feet, and one half or more of its trunk is within a public right of way or within 5 feet of the paved portion of a City street or a public side walk.

The following tree species are exempt from the above provisions (except for those that may exist as street trees): acacia, silver maple, poplar, ailanthus, hawthorn, fruitless mulberry, privet, pyracantha, Monterey pine, Monterey cypress, and fruit and nut trees (except walnut trees). A permit is not required for these tree species alteration, removal or relocation.

10.1.1.1 Article IV – Permit Category II – Tree alteration, removal or relocation on property proposed for development-Requirements.

Article IV requires the following:

(a) All development proposals and subdivision applications shall clearly designate all trees and heritage trees on the property by trunk location and accurate outline of the dripline and shall indicate those trees proposed to be altered, removed or relocated. The reasons for the removal of any tree shall be stated in writing. The development plan or tentative subdivision map shall indicate the genus and species, shape, drip-line and trunk circumference of each tree and heritage tree. The owner of the property and person in control of the proposed development shall protect and preserve each tree and heritage tree situated within the site of the proposed development during the period the application for the proposed development is being considered by the City. The proposed development shall be designed so that:

(1) The proposed lots and/or improvements preserve any heritage trees to the greatest possible extent.

(2) The road and lot grades protect heritage trees to the greatest extent possible and the existing grad shall be maintained within each such tree's root zone.

(b) If the proposed project is approved, the recordation of the final map or issuance of a grading permit or building permit for the project shall constitute a permit to alter, remove or relocate any trees designated for alteration, removal or relocation upon the project's approved plans. Any change in the trees to altered, removed or relocated as designated on the approved development plan or tentative map shall only be permitted upon the written

approval of the Director or, when the Director determines that the proposed change may be substantial, by the Planning Commission.

(c) A tree replacement program that will require the applicant to replace trees and heritage trees approved for removal as part of the approval of the project in accordance with subdivision 1; each protected tree removed or damaged shall be replaced in accordance with subdivision 2. For each 6 inches or fraction thereof of the diameter of a tree which was approved for removal, two trees of the same genus and species as the removed tree (or another approved species), each of a minimum 15-gallon container size, shall be planted on the project site. For each 6 inches or fraction thereof of the diameter of a tree which was not approved for removal, four trees of the same genus and species as the removed tree (or another approved species), each of a minimum 15-gallon container size, shall be planted on the project site.

(d) If the development site is inadequate in size to accommodate the replacement trees, the trees shall be planted on public property with the approval of the Director of the City's Recreation and Parks Department. Upon the request of the developer and the approval of the Director, the City may accept an in-lieu payment of $100.00 per 15-gallon replacement tree on the condition that all such payments shall be used for tree-related educational projects and/or planting programs of the City.

(e) The following requirements will apply any applicant of property upon which a protected tree is located:

(1) Before the start of any clearing, excavation, construction or other work on the site, every protected tree shall be securely fenced off at the "protected perimeter" which shall either be the root zone or other limit as may be established by the City.

(2) If the proposed development, including any site work for the development, will encroach upon the protected perimeter of a protected tree, special measures shall be utilized, to allow the roots to obtain oxygen, water and nutrients as needed. Any excavation, cutting, filling, or compaction of the existing ground surface within the protected perimeter, if authorized at all by the Director, shall be minimized and subject to such conditions as may be imposed by the Director. No significant change in existing ground level shall be made within the dripline of a protected tree.

(3) No oil, gas, chemicals or other substances that may be harmful to trees shall be stored or dumped within the protected perimeter. All brush, earth and other debris shall be removed in a manner which prevents injury to the protected tree.

(4) Underground trenching for utilities shall avoid major support and absorbing tree roots of protected trees. If avoidance is impractical, tunnels shall be made below the roots. Trenches shall be consolidated to USFWS as many units as possible. Trenching within the drip line of protected trees shall be avoided to the greatest extent possible and shall only be done under the at-site directions of a certified arborist.

(5) No concrete or asphalt paving shall be placed over the root zones of protected trees. No artificial irrigation shall occur within the root zone of oaks.

(6) No compaction of the soil within the root zone of protected trees shall occur.

(7) If the trees proposed to be removed can be economically relocated, the developer shall move the trees to a suitable location on the site shown on the approved plans.

10.1.1.2 Article V – Permit category II – Street trees and plantings on and adjacent to public streets and sidewalks.

Article V pertains to the alteration, removal, and relocation of street trees and entails the following:

(a) As per Section 17-24.075, no tree growing within a planting strip or within any public right-of-way shall be removed or altered by or at the instigation of the abutting property owner or anyone other than a duly authorized officer, agent or employee of the City, except upon issuance of a permit therefore by the Director of Recreation and Parks who may require, as a condition of permitting the removal or alteration of a tree, the posting of security for such work and the planting, at the expense of the permittee, of a tree to replace the one removed from a list approved under Section 17-24.070 of the city code.

As per Section 17-24.080, a permit approved by the Director of Recreation and Parks under the provisions of this article shall be valid for a period of 60 days from its issuance unless a longer term is set forth in the permit. If the work to be done under the permit does not commence prior to the permit's expiration and thereafter expeditiously pursued, the permit shall become null and void.

10.1.2 APPLICABILITY TO THE PROPOSED PROJECT

A *Tree Preservation and Mitigation Report* was prepared for the Dutton Meadows project site by Horticultural Associates, dated June 5, 2018. A total of 64 trees were evaluated and includes all trees that are present on the project site that are over 4 inches in trunk diameter, per the Santa Rosa Tree Ordinance. According to the report, native species on the site include 25 valley oaks and 2 box elders. Non-native species on the site include black walnut, pecan, liquidambar, coast redwood, weeping willow, cottonwood, silk tree, olive, English walnut, Grecian laurel, Japanese maple, Lombardi poplar, maple, deodar cedar, Italian cypress, stone Pine, dogwood, eucalyptus, pear, glossy privet, and hawthorn.

Currently, all trees are slated for removal due to the density of this development project, and the existing location of trees. Thus, it will be impossible to save any of the trees at this site. Article 4, Section 17-24.050 Permit Category II-Tree Alteration, Removal, or Relocation on Property Proposed for Development, C (1) requires two 15-gallon size trees to be replanted for every 6 inches of trunk diameter removed. The applicant will be required to obtain a permit from the City of Santa Rosa to remove the trees on the project site. Impacts to trees are regarded as significant. Mitigation that includes tree replacement per the specifications of the City of Santa Rosa Tree Ordinance will mitigate impacts to trees to a level regarded as less than significant.

11. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

11.1 U.S. Army Corps of Engineers Jurisdiction and Permitting

11.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), the Corps regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the OHWM or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in

> the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

11.1.1.1 Clean Water Rule 2015

In 2015, the Environmental Protection Agency (EPA) and the Corps published the Clean Water Rule: Definition of ''Waters of the United States''; Final Rule which defines the scope of waters protected under the CWA. This Final Rule was published in light of the statute, science, Supreme Court decisions in *U.S.* v. *Riverside Bayview Homes, Solid Waste Agency of Northern Cook County* v. *U.S. Army Corps of Engineers (SWANCC),* and *Rapanos* v. *United States (Rapanos)*, and the agencies' experience and technical expertise. The Clean Water Rule reflects consideration of the extensive public comments received on the proposed rule. The Clean Water Rule was stayed in federal court shortly after it was adopted in 2015. In August 2018, the stay was lifted and the Clean Water Rule (Rule) became effective once again and remains in effect today. The Rule ensures protection for the nation's public health and aquatic resources and increases CWA program predictability and consistency by clarifying the scope of "waters of the United States" protected under the Act.

The Rule only protects waters that have been historically covered by the CWA. A tributary, or upstream water, must show physical features of flowing water – a bed, bank, and ordinary high water mark – to warrant protection. The Rule provides protection for headwaters that have these features and have a significant connection to downstream waters. Adjacent waters are defined by three qualifying circumstances established by the Rule. These can include wetlands, ponds, impoundments, and lakes which can impact the chemical, biological or physical integrity of neighboring waters. All existing exclusions from longstanding agency practices are officially established for the first time. Waters used in normal agricultural, ranching, or silvicultural activities, as well as certain defined ditches, prior converted cropland, and waste treatment systems continue to be excluded from CWA protection.

11.1.1.2 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the CWA, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to the type of waters of the United States. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g., a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s). NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters.

11.1.2 Applicability to the Proposed Project

On May 8, 2001 the Corps confirmed the extent and location of Corps jurisdiction on the Bellevue Phase 8 Project Site (Corps File No. 24554N). Approximately 0.16 acre of seasonal wetland habitat was mapped on the Bellevue Ranch project site. August 19, 2003 the Corps issued a letter stating that the 0.2 acre of wetlands mapped on the Minoia Property are non-jurisdictional pursuant to the SWANCC decision (Corps File No. 26342N).

The Draft Subsequent EIR (January 2005 – SCH # 2002092016) includes Table 3.6-1 on page 3.6-2 that shows the extent of wetlands on the various parcels comprising the Specific Planning Area. For Bellevue Ranch 8 (DM Associates, LLC) this table indicates that 0.16 acre of Corps jurisdictional wetland were filled and no longer present in 2005. Table 3.6-1 also indicates that 0.2 acre of wetland remained on Minoia. The Corps in its August 5, 2003 letter to USFWS requesting Section 7 consultation for the Specific Plan area states that the Bellevue Ranch wetlands were removed prior to that permitting action (see Attachment C). Similarly, the USFWS in its Biological Opinion discusses that the Bellevue Ranch 8 ("Dutton Meadows") removed its wetlands (USFWS 2005). All other wetlands in the specific plan area were mitigated at the Gobbi Ranch 2 Mitigation Site.

Stromberg 2003, and Olberding and Stromberg 2003 state that all wetlands were removed from the project site. Dr. Lawrence Stromberg also states that Gobbi Mitigation Bank 2 created 5.66 acres of wetlands to compensate for the impacts to wetlands for the Dutton Meadows project (Harvey Rich pers. Comm. with G. Monk 08/0718). **Therefore, impacts to seasonal wetlands were adequately mitigated.**

The project site currently does not support any seasonal wetland habitats. Road improvements, such a curb and gutter along Dutton Meadows, and the access road off Dutton Meadows would impact a roadside ditch along Dutton Meadows; however, this ditch is not subject to Clean Water Act jurisdiction based on the 2015 Clean Water Act Rule. *The Clean Water Rule: Definition of ''Waters of the United States''; Final Rule* (Corps of Engineers June 29, 2015) excludes ditches

that are not excavated in wetlands/other waters, or that relocate a tributary (i.e. ditches that were excavated in uplands), and that do not drain wetlands. Moreover, the 2015 Clean Water Act excludes ditches associated with modes of transportation, such as roadways. The northmost end of the roadside ditch begins along Dutton Meadows immediately adjacent to the northwest corner of the project site. The flows into the ditch originate from street surfaces and other developed surfaces in the immediate vicinity of the project site. During large storm events surface runoff flows southward through the ditch towards high density development to the south. Since this roadside ditch was excavated in uplands along Dutton Meadows (road), and does not support a dominance of wetland vegetation nor drain any wetlands, a Clean Water Act permit from the Corps would not be required for this project. Since the ditch does not provide suitable habitat for listed plants or CTS, and since this ditch area was addressed and covered by USFWS' Biological Opinion for the Dutton Meadows Specific Plan Area, additional Section 7 consultation should also not be required.

11.2 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the CEQA, the CESA, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

11.2.1 Applicability to the Proposed Project

The RWQCB Water Quality Certification states: "Approximately 0.16 acres of seasonal wetland habitat was previously filled on the Dutton Meadows Phase I property in accordance with U.S. Army Corps of Engineers (File No. 24554N) and with the Regional Water Board authorization (WDID No. 1B01061WNSO – Bellevue Ranch, Phase 8)." "Mitigation for the Dutton Meadows Projects included the creation of 1.66 acres and the restoration of 4.0 acres of wetland habitat for a final mitigation ratio of 1.25:1, in addition to the establishment of the 108.8 acre Gobbi Preserve No. 2. Construction of the wetlands and establishment of the preserve has already been approved and began in Fall 2005 (WDID No. 1B04163WNSO)" (see Attachment D).

Stromberg 2003, and Olberding and Stromberg 2003 state that all wetlands were removed from the project site. Dr. Lawrence Stromberg also states that Gobbi Mitigation Bank 2 created 5.66 acres of wetlands to compensate for the impacts to wetlands for the Dutton Meadows project (Harvey Rich pers. Comm. with G. Monk 08/0718). **Therefore, impacts to seasonal wetlands have been adequately mitigated.**

As noted above, the roadside ditch along Dutton Meadows is not subject to Clean Water Act jurisdiction based on the 2015 Clean Water Act Rule. Since this roadside ditch was excavated in

uplands along Dutton Meadows (road), and does not support a dominance of wetland vegetation nor drain any wetlands, a Clean Water Act permit from the RWQCB would not be required for this project.

11.3 Porter-Cologne Water Quality Control Act

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the U.S. Environmental Protection Agency (USEPA), sediment is one of the most widespread pollutants contaminating U.S. rivers and streams. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the federal CWA and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices Plan (BMPs) of any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into any site development plan.

11.3.1 Applicability to The Proposed Project

Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, care will be required when constructing the proposed project to be sure that adequate pre-and post-construction Best Management Practices Plan (BMPs) are incorporated into the project implementation plans.

It should also be noted that prior to issuance of any permit from the RWQCB this agency will require submittal of a Notice of Determination from the City of Santa Rosa indicating that the proposed project has completed a review conducted pursuant to CEQA. The pertinent sections of

the CEQA document (typically the biology section) are often submitted to the RWQCB for review prior to the time this agency will issue a permit for a proposed project.

11.4 California Department of Fish and Wildlife Protections

11.4.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the project's location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
   (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
   (E) A copy of any other applicable local, state, or federal permit or agreement already issued.
   (F) Any other information required by CDFW" (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

11.4.2 Applicability to The Proposed Project

There are no streams or drainages that would likely be regulated by CDFW. Hence, a SBAA with CDFW would not be necessary for this project.

12. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORM WATER MANAGEMENT

12.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the State Water Resources Control Board (SWRCB) has elected to adopt only one statewide Construction

General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the State Water Board's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:
- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the

required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the CWA, the RWQCB regulates construction discharges under the National Pollutant Discharge Elimination System (NPDES). The project sponsor of construction or other activities that disturb more than 1 acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[1].

12.1.1 Applicability to The Proposed Project

The project will be required to obtain coverage under the SWRCB administered Construction General Permit. To obtain coverage the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, Stormwater Pollution Prevention Plan (SWPPP), Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify Best Management Practices (BMPs) for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

[1] CGP Order 2009-0009-DWQ remains in effect, but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

13. STANDARD URBAN STORM WATER MITIGATION PLAN (SUSMP)

The project site is within the boundaries of the SUSMP. The SUSMP guidelines were created to comply with the municipal storm water NPDES permit requirements enforced by the SWRCB and the RWQCB. The SUSMP guidelines were developed to assist project sponsors and municipal staff to implement the SUSMP requirements adopted by the North Coast Regional Water Quality Control Board. Since the SUSMP requirements apply to both privately sponsored projects and public capital improvement projects, these Guidelines are required to be used by development project applicants, municipal development project review staff, and municipal staff responsible for capital improvement projects. The SUSMP requirements ensure that projects otherwise meet Storm Water Management Plan requirements enforceable pursuant to the National Pollutant Discharge Elimination System (NPDES) C3 requirements.

The SUSMP goals for new and redevelopment projects are to manage, as close to the point of origin as possible, 1) storm water quality, 2) storm water quantity, and 3) to conserve natural areas of the development site. These three goals are described further below. It should be noted that the concept of "maximum extent practical" (MEP) applies to each of the goals. The MEP requirement is a technology based standard established by Congress in the Clean Water Act U.S.C. S 1342 (p)(3)(B)(iii) that municipal dischargers of storm water must meet. To achieve the maximum extent practicable standard, municipalities must employ whatever Best Management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the maximum extent practicable means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the cost would be prohibitive.

The SUSMP goals for new and redevelopment projects are as follows:

Storm Water Quality. The first goal is to prevent pollutants generated at development and redevelopment projects from reaching storm drains. Projects covered by the SUSMP must be designed to minimize the introduction of pollutants.

Storm Water Quantity. The second goal is to prevent increases in storm water runoff from the two-year 24 hour storm event for Sonoma County. SUSMP projects should incorporate best management practices to limit the post-development runoff to pre-development conditions to the MEP. Best management practices are methods used to minimize pollutants in storm water and the quantity of runoff. One of the objectives of these guidelines is to provide more specific information about how MEP will be achieved.

Conserve Natural Areas. The third goal is to conserve natural areas of a development site. This goal supports the other two goals by preserving areas where storm water runoff can be purified naturally by infiltration into the soil and flow over vegetated areas. SUSMP projects should strive to maximize the amount of land left in a natural, undisturbed condition, preserve riparian areas and wetlands, limit clearing of native vegetation, and maximize trees and vegetation.

This SUSMP applies to applicable projects that require a discretionary permit, including any ministerial permits that are based on the discretionary permit. Source controls will be recommended for all discretionary projects.

Projects that must comply with the SUSMP include:

a) Development projects that create one acre (43,560 square feet) or more of new impervious surface. This category includes development of any type on public or private land, which falls under the planning and building authority of Sonoma County or City of Santa Rosa, where one acre or more of new impervious surface, collectively over the entire project site, will be created.
b) Streets, roads, highways and freeways that create one acre (43,560 square feet) or more of new impervious surface. This category includes any newly constructed impervious surface used for the transportation of pedestrians, bicycles, and motorized vehicles.
c) Redevelopment projects that are located on an already developed site and result in the addition of and/or reconstruction of one acre (43,560 square feet) or more of new impervious surface. Only the additional and/or reconstructed portion(s) of the site must be included in treatment design. Excluded from this category are interior remodels and routine maintenance or repair, including roof or exterior surface replacement and resurfacing.
d) Development and redevelopment projects located directly adjacent to a natural waterway, modified natural waterway, or constructed channel or that requires a new storm drain outfall to such waterway, regardless of project size or impervious surface. This requirement is intended to protect environmentally sensitive areas. For redevelopment projects, excluded from this category are interior remodels and routine maintenance or repair, including roof or exterior surface replacement and resurfacing.

Regarding phased projects, new development or redevelopment activity that is part of a larger common plan of development that results in less than one acre of impervious surface must comply with SUSMP requirements. For example, if 50% of a subdivision is constructed and results in 0.9 acre of impervious surface and the remaining 50% of the subdivision is to be developed at a future date, the property owner must comply with SUSMP requirements.

13.1.1 SOURCE AND TREATMENT CONTROL REQUIREMENTS

Source control and treatment control BMPs are intended to reduce runoff and keep pollutants out of storm water throughout the life of the project. They may be described as post-construction BMPs or “post-development” control measures. Post-construction BMPs differ from construction BMPs, which are used during the construction phase to prevent erosion and keep construction-related pollutants from reaching storm water.

The SUSMP recognizes two types of post-development BMPs for storm water pollution control – source controls and treatment controls. Source controls include BMPs that are designed to prevent pollutants from reaching storm water runoff and minimize site runoff. Source controls include a large variety of BMPs that range from minimizing the amount of impervious surface used at a project site to specific pollution prevention BMPs such as providing a roof over waste storage areas. The municipal storm water NPDES permit characterizes source control as the first

line of defense at a project site and storm water treatment as a backup or additional line of defense. Source controls will be recommended for all discretionary projects.

Storm water treatment controls are engineered systems that are designed to remove pollutants from storm water. The SUSMP and NPDES permit have specific hydraulic design criteria for sizing storm water treatment controls to assure that an optimum amount of storm water receives treatment. Examples of storm water treatment controls include vegetated swales, extended detention basins, and bioretention areas. These are described in more detail in Chapter 4.

Source and treatment controls require long-term maintenance to continue to function effectively and avoid the creation of nuisance conditions. The SUSMP requires the project applicant to provide to the City or County a signed statement accepting responsibility for maintenance until the responsibility is legally transferred. The SUSMP further requires property owners to conduct maintenance inspection of all source and treatment control BMPs at least once a year or as specified by the designer or manufacturer.

13.1.2 Post-Construction Sediment and Erosion Control

Sediment is an important pollutant of concern in the North Coast Region. During construction sediment and erosion control BMPs must be implemented in accordance with the Statewide Construction Activity NPDES General Permit and the City of Santa Rosa or County of Sonoma grading permit programs. The design of projects must also consider potential sedimentation and erosion issues during long-term project operations and incorporate appropriate sediment and erosion controls in the project design.

Source Controls includes the need to select and maintain vegetation in landscaped pervious areas to prevent runoff from contacting bare earth and conveying sediment into the storm drain system. Similarly, pervious paving materials must also be selected, designed and maintained to avoid sedimentation and erosion.

13.1.3 Enforceability

The NPDES permit issued to the participating SUSMP entities requires these entities to control pollutant discharges to their respective storm drain systems. At a minimum, this legal authority empowers the participating entities to use enforcement mechanisms, including monetary fines, to require compliance by private entities within their jurisdictions. In the event that a project applicant fails to comply with the SUSMP requirements, the participating entities may determine that it is necessary to undertake enforcement actions, which may include a monetary fine.

13.1.4 Applicability to the Proposed Project

The proposed project will affect greater than one acre and is therefore subject to the SUSMP. The City of Santa Rosa, through its RWQCB MS 4 permit will enforce compliance with the 2016 revised SUSMP.

14. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if

there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

14.1.1 APPLICABILITY TO THE PROPOSED PROJECT

This report has been prepared as a Biology Resources Analysis suitable for incorporation into the Addendum to the 2005 Dutton Meadows Project Final Subsequent Environmental Impact Report (2005 SEIR). This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

15. IMPACTS ANALYSIS

Below the criteria used in assessing impacts to Biological Resources is presented.

15.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in

any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

15.1.1 THRESHOLDS OF SIGNIFICANCE

15.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

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

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

15.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates

impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

15.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

16. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section, we discuss potential impacts to sensitive biological resources including special-status animal species. We follow each impact with a mitigation prescription that when implemented would reduce impacts to a level regarded as less than significant pursuant to CEQA. This impact analysis is based on a Site Development Plan presented in Attachment A.

16.1 Impact BIO-1. Development of the project would have a potentially significant adverse impact on tree nesting raptors (Potentially Significant)

While unlikely, white-tailed kite could nest on the project site. Raptors (that is, birds of prey) are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their eggs and young are protected under California Fish and Game Codes Sections 3503, 3503.5.

Potential impacts from the proposed project include disturbance to nesting raptors, and possibly death of adults and/or young. No nesting raptors (birds of prey) have been identified on the proposed project site; however, no specific surveys for nesting raptors have been conducted. As such, in the absence of survey results, it must be concluded that impacts to nesting raptors from the proposed project would be **potentially significant pursuant to CEQA.** This impact could be mitigated to a level considered less than significant.

16.2 Mitigation Measure BIO-1. Tree Nesting Raptors

To avoid impacts to nesting raptors, a nesting surveys shall be conducted 15 days prior to commencing with construction work, if this work would commence between February 1 and August 31. The raptor nesting surveys shall include examination of all trees within 200 feet of the entire project site, not just trees slated for removal. A nest survey report shall be prepared upon completion of the survey and provided to the City of Santa Rosa with any recommendations required for establishment of protective buffers as necessary to protect nesting birds.

If nesting raptors are identified during the surveys, the dripline of the nest tree must be fenced with orange construction fencing (provided the tree is on the project site), and a 200-foot radius around the nest tree must be staked with bright orange lath or other suitable staking. If the tree is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. *The size of the buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated to disturbance.* If this occurs, the raptor biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. No construction or earth-moving

activity shall occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15. This date may be earlier or later, and would have to be determined by a qualified raptor biologist. If a qualified biologist is not hired to watch the nesting raptors, then the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1.

Implementation of this mitigation measure would reduce impacts to nesting raptors to a level considered **less than significant**.

16.3 Impact BIO-2. Development of the project would have a potentially significant adverse impact on common nesting birds (Potentially Significant)

Common nesting birds such as mourning dove, California scrub jay, and house finch, among others could be impacted by the proposed project. Common birds and their active nests are protected under California Fish and Game Code (Sections 3503, 3503.5), and the Federal Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young caused by implementation of the proposed project would be regarded as **potentially significant.** These impacts could be mitigated to levels considered less than significant pursuant to CEQA.

16.4 Mitigation Measure BIO-2. Nesting Passerine Birds

A nesting survey should be conducted on the project site and within a zone of influence around the project site. The zone of influence includes those areas off the project site where birds could be disturbed by earth-moving vibrations or noise. Accordingly, the nesting survey(s) must cover the project site and an area around the project site boundary. If project site disturbance associated with the project would commence between March 1 and September 1, the nesting surveys should be completed 15 days prior to commencing with the work. If common birds are identified nesting on or adjacent to the project site, a non-disturbance buffer of 75 feet should be established or as otherwise prescribed by a qualified ornithologist. The buffer should be demarcated with painted orange lath or via the installation of orange construction fencing. Disturbance within the buffer should be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed. A nest survey report shall be prepared upon completion of any required survey and provided to the City of Santa Rosa with any recommendations required for establishment of protective buffers as necessary to protect nesting birds.

Typically, most passerine birds in the region of the project site are expected to complete nesting by August 1. However, many species can complete nesting by the end of June or in early to mid-July. Regardless, nesting buffers should be maintained until August 1 unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date. If buffers are removed prior to August 1st, the qualified biologist conducting the nesting surveys should prepare a report that provides details about the nesting outcome and the removal of buffers. This report should be submitted to the City of Santa Rosa prior to the time that nest protection buffers are removed if the date is before August 1.

Implementation of this mitigation measure would reduce impacts to nesting common bird species to a level considered **less than significant**.

16.5 Impact BIO-5. Development of the project would have a potentially significant adverse impact on protected trees (Significant)

A *Tree Preservation and Mitigation Report* was prepared for the Dutton Meadows project site by Horticultural Associates, dated June 5, 2018. A total of 64 trees were evaluated and this includes all trees that are present over 4 inches in trunk diameter, per the Santa Rosa Tree Ordinance. According to the report, native species on the site include 25 valley oaks and 2 box elders. Non-native species on the site include black walnut, pecan, liquidambar, coast redwood, weeping willow, cottonwood, silk tree, olive, English walnut, Grecian laurel, Japanese maple, Lombardi poplar, maple, deodar cedar, Italian cypress, stone Pine, dogwood, eucalyptus, pear, glossy privet, and hawthorn.

Currently, all trees are slated for removal due to the density of this project, and the existing location of trees. Thus, it will be impossible to save any of the trees at this site. Impacts to protected trees resulting from the proposed project would be regarded as **significant.** These impacts could be mitigated to levels considered less than significant pursuant to CEQA.

16.6 Mitigation Measure BIO-5. Protected Trees

Article 4, Section 17-24.050 Permit Category II-Tree Alteration, Removal, or Relocation on Property Proposed for Development, C (1) requires two 15-gallon size trees to be replanted for every 6 inches of trunk diameter removed. Applicant will be required to obtain a permit to remove the trees on the project site. Implementation of this mitigation measure would reduce impacts to trees to a level considered **less than significant.**

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Appendix E: 2018 Arborist Report

HORTICULTURAL
Associates

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

DUTTON MEADOWS
SANTA ROSA, CA

Prepared For:

Trumark Homes
3001 Bishop Drive, Suite 100
San Ramon, CA 94583

Prepared by:

John C. Meserve
Consulting Arborist and Horticulturist
International Society of Arboriculture
ISA Certified Arborist, WE #0478A

June 5, 2018

HORTICULTURAL
Associates

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

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San Ramon, CA 94583

Re: Completed *Tree Preservation and Mitigation Report*, Dutton Meadows Subdivision, Santa Rosa, California

Alicia,

Attached you will find our completed *Tree Preservation and Mitigation Report* for the above noted site in Santa Rosa. A total of 64 trees were evaluated and this includes all trees that are present over 4 inches in trunk diameter, per the Santa Rosa Tree Ordinance.

Each tree is identified in the field with a numbered aluminum tag placed on the trunk at approximately eye level.

All trees in this report was evaluated and documented for species, size, health, and structural condition. The *Tree Inventory Chart* also includes information about expected impacts of the proposed development plan and recommendations for action based on the plan reviewed. The *Tree Location Plan* shows the location and numbering sequence of all evaluated trees.

The development plans that were provided for our use identified the locations of some trees, and others were added, and located by eye, if they were greater than 4 inches in diameter.

This report is intended to be a basic inventory of trees present at this site, which includes a general review of tree health and structural condition. No in-depth evaluation has occurred on any tree, and assessment has included only external visual examination without probing, drilling, coring, root collar examination, root excavation, or dissecting any tree part. Failures, deficiencies, and problems may occur in these trees in the future, and this inventory in no way guarantees or provides a warranty for their condition.

EXISTING SITE CONDITION SUMMARY

The project site consists of a large open field, bordered by subdivisions and a City street.

EXISTING TREE SUMMARY

Native tree species found on the site include Coast Live Oak, Valley Oak, and Boxelder.

Non-native species on the site include Black Walnut, Pecan, Liquidambar, Coast Redwood, Weeping Willow, Cottonwood, Silk Tree, Olive, English Walnut, Grecian Laurel, Japanese Maple, Lombardi Poplar, Maple, Deodar Cedar, Italian Cypress, Stone Pine, Dogwood, Eucalyptus, Pear, Glossy Privet, and Hawthorn.

CONSTRUCTION IMPACT SUMMARY

The density of this project, and the existing location of trees, will make it impossible to save any of the trees at this site.

Please feel free to contact me if you have questions regarding this report, or if further discussion would be helpful.

Regards,

John C. Meserve
Consulting Arborist and Horticulturist
International Society of Arboriculture
ISA Certified Arborist, WE #0478A

TREE INVENTORY CHART

TREE INVENTORY
Dutton Meadows Subdivision

June 5, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
1	*Juglans nigra*	Black Walnut	7+5.5	18	12	3	3	3	2
2	*Quercus lobata*	Valley Oak	9	20	12	3	3	3	2
3	*Carya illinoinensis*	Pecan	19.5	35	22	3	2	3	2
4	*Quercus lobata*	Valley Oak	11.5	30	16	3	3	3	2
5	*Quercus lobata*	Valley Oak	4.5	14	6	3	3	3	2
6	*Quercus lobata*	Valley Oak	5.5	16	6	3	3	3	2
7	*Quercus lobata*	Valley Oak	9.5	25	14	4	3	3	2
8	*Quercus lobata*	Valley Oak	36.5	50	39	4	3	3	2
9	*Liquidambar styraciflua*	Liquidambar	24	50	32	4	2	3	2
10	*Quercus lobata*	Valley Oak	39.5	45	33	3	2	3	2
11	*Sequoia sempervirens*	Coast Redwood	30	55	18	4	3	3	2
12	*Salix babylonica*	Weeping Willow	39	35	20	3	2	3	2
13	*Popoulus fremontii*	Poplar	16+17	60	28	4	2	3	2
14	*Quercus lobata*	Valley Oak	8+9	20	16	3	3	3	2
15	*Quercus lobata*	Valley Oak	9.5+7.5+11.5	32	18	2	3	3	2
16	*Quercus lobata*	Valley Oak	11+12	25	22	3	3	3	2

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TREE INVENTORY
Dutton Meadows Subdivision

17	*Quercus lobata*	Valley Oak	9.5	22	16	2	3	3	2
18	*Sequoia sempervirens*	Coast Redwood	34	45	18	3	3	3	2
19	*Albizia julibrissin*	Silk Tree	6+4+4.5	24	16	4	4	3	2
20	*Quercus lobata*	Valley Oak	12.5	35	18	3	3	3	2
21	*Olea europaea*	Olive	4+3+4+1	14	9	4	4	3	2
22	*Juglans regia*	English Walnut	5.5+6.5	15	12	4	4	3	2
23	*Laurus nobilis*	Grecian laurel	Multi-stem	18	10	4	3	3	2
24	*Acer negundo*	Box Elder	10	18	13	3	2	3	2
25	*Liquidambar*	Liquid amber	7.5	32	12	3	3	3	2
26	*Acer japonica*	Japanese maple	4.5+2.5+3+3	12	9	4	3	3	2
27	*Juglans regia*	English Walnut	18	16	18	3	3	3	2
28	*Populus trichocarpa*	Black Cottonwood	12	22	16	4	3	3	2
29	*Acer negundo*	Box Elder	7.5	9	5	3	2	3	2
30	*Populus nigra 'Italica'*	Lombardi poplar	±8+10+12+12	50	14	3	2	3	2
31	*Populus nigra 'Italica'*	Lombardi poplar	±4+12+8	45	12	3	2	3	2
32	*Acer species*	Maple	17	25	24	3	2	3	2
33	*Quercus lobata*	Valley Oak	10	30	20	4	2	3	2

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34	*Cedrus Deodara*	Deodar Cedar	24	50	20	4	3	3	2
35	*Populus nigra 'Italica'*	Lombardi poplar	Multi-stem	25	8	4	2	3	2
36	*Cupressus sempervirens*	Italian Cyprus	4	16	2	2	3	3	2
37	*Cupressus sempervirens*	Italian Cyprus	6	22	2	4	3	3	2
38	*Cedrus Deodara*	Deodar Cedar	17.5	35	16	4	3	3	2
39	*Quercus lobata*	Valley Oak	11	35	18	3	3	3	2
40	*Quercus lobata*	Valley Oak	11	30	16	3	3	3	2
41	*Pinus pinea*	Stone pine	33.5	40	29	4	2	3	2
42	*Cornus florida*	Dogwood	7	14	10	4	4	3	2
43	*Populus nigra 'Italica'*	Lombardi poplar	23	25	6	3	2	3	2
44	*Populus nigra 'Italica'*	Lombardi poplar	33	55	12	3	2	3	2
45	*Salix babylonica*	Weeping Willow	40	12	10	2	1	3	2
46	*Sequoia sempervirens*	Coast Redwood	26	50	14	2	2	3	2
47	*Quercus lobata*	Valley Oak	8+7+7+7.5	26	18	3	3	3	2
48	*Quercus lobata*	Valley Oak	19	40	20	3	3	3	2
49	*Quercus lobata*	Valley Oak	7+7.5	22	14	3	3	3	2
50	*Quercus lobata*	Valley Oak	6.5+6	20	14	4	4	3	2

51	*Quercus lobata*	Valley Oak	20.5	35	22	3	3	3	2
52	*Quercus lobata*	Valley Oak	17	24	22	3	3	3	2
53	*Quercus lobata*	Valley Oak	10	18	9	2	2	3	2
54	*Juglans regia*	English Walnut	5	16	12	3	2	3	2
55	*Quercus lobata*	Valley Oak	12	30	22	3	2	3	2
56	*Quercus lobata*	Valley Oak	13.5	20	24	3	2	3	2
57	*Juglans regia*	Black Walnut	5.5+9+7+9+7.5	18	18	4	3	3	2
58	*Quercus lobata*	Valley Oak	6.5	16	9	4	4	3	2
59	*Eucalyptus species*	Eucalyptus	Multi-stem	40	18	3	2	3	2
60	*Acer species*	Maple	4+3.5	20	12	2	2	3	2
61	*Acer saccharinum*	Silver Maple	±16	30	20	4	4	3	2
62	*Pyrus communis*	Edible Pear	±4+4+4	18	12	3	3	3	2
63	*Crataegus cordata*	Hawthorn	±14	22	16	4	2	3	2
64	*Ligustrum lucidum*	Glossy Privet	8+6.5+4.5	18	12	2	2	3	2

KEY TO TREE INVENTORY CHART

KEY TO TREE INVENTORY CHART

Dutton Meadows Subdivision
Santa Rosa, California

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level and the *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

Each trunk has been measured, to the nearest one half inch, to document its diameter at 4 feet above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size.

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

(5) Excellent - health and vigor are exceptional, no pest, disease, or distress symptoms.

(4) Good - health and vigor are average, no significant or specific distress symptoms, no significant pest or disease.

(3) Fair - health and vigor are somewhat compromised, distress is visible, pest or disease may be present and affecting health, problems are generally correctable.

(2) Marginal - health and vigor are significantly compromised, distress is highly visible and present to the degree that survivability is in question.

(1) Poor - decline has progressed beyond the point of being able to return to a healthy condition again. Long-term survival is not expected. This designation includes dead trees.

Structure

The following descriptions are used to rate the structural integrity of a tree. Trees with a rating of 3 or 4 are generally stable, sound trees which do not require significant pruning, although cleaning, thinning, or raising the canopy might be desirable. Trees with a rating of 2 are generally poor candidates for preservation unless they are preserved well away from improvements or active use areas. Significant time and effort would be required to reconstruct the canopy and improve structural integrity. Trees with a rating of 1 are hazardous and should be removed.

(4) Good structure - minor structural problems may be present which do not require corrective action.

(3) Moderate structure - normal, typical structural issues which can be corrected with pruning.

(2) Marginal structure - serious structural problems are present which may or may not be correctable with pruning, cabling, bracing, etc.

(1) Poor structure - hazardous structural condition which cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Development Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition - the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation due to their very close proximity to construction or because they are located within the footprint of construction and cannot be preserved.

(3) A significant impact on long term tree integrity can be expected as a result of proposed development.

(2) A moderate impact on long term tree integrity can be expected as a result of proposed development.

(1) A very minor or no impact on long term tree integrity can be expected as a result of proposed development.

(0) No impact is expected

Recommendations

Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

(1) Preservation appears to be possible.

(2) Removal is required due to significant development impacts.

(3) Removal is recommended due to poor health or hazardous structure.

(4) Removal is required due to significant development impacts and poor existing condition.

(5) Removal is recommended due to poor species characteristics.

(6) Install temporary protective fencing at the edge of the dripline, or edge of approved construction, prior to beginning grading or construction. Maintain fencing in place for duration of all construction activity in the area.

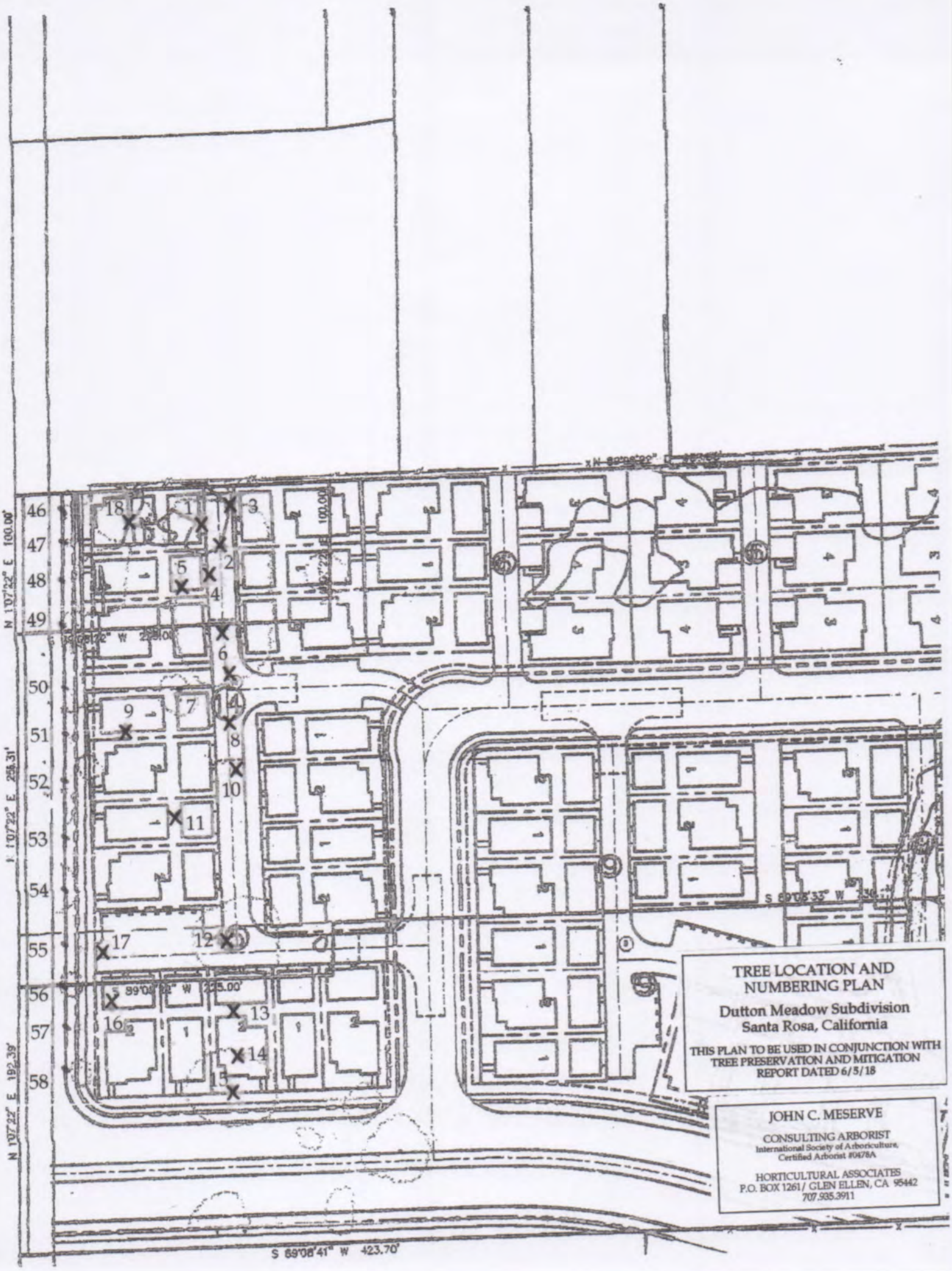
(7) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.

(8) Place a 4" layer of chipped bark mulch over the soil surface within the fenced dripline prior to installing temporary fencing. Maintain this layer of mulch throughout construction.

(9) Prune to clean, raise, or provide necessary clearance. Prune to reduce branches that are over-loaded, over-extended, largely horizontal, arching, or have foliage concentrated near the branch ends, per International Society of Arboriculture Pruning Standards.

Pruning to occur by, or under the supervision of, an Arborist certified by the International Society of Arboriculture. Pruning Standards are attached to this report.

TREE LOCATION PLAN


TREE LOCATION AND NUMBERING PLAN
Dutton Meadow Subdivision
Santa Rosa, California
THIS PLAN TO BE USED IN CONJUNCTION WITH TREE PRESERVATION AND MITIGATION REPORT DATED 6/5/18
JOHN C. MESERVE
CONSULTING ARBORIST
International Society of Arboriculture, Certified Arborist #0478A
HORTICULTURAL ASSOCIATES
P.O. BOX 1261 / GLEN ELLEN, CA 95442
707.935.3911
N 10°22' E 100.00'
N 10°22' E 255.31'
N 10°22' E 192.39'
S 89°08'41" W 423.70'
S 89°08'33" W
100.00'
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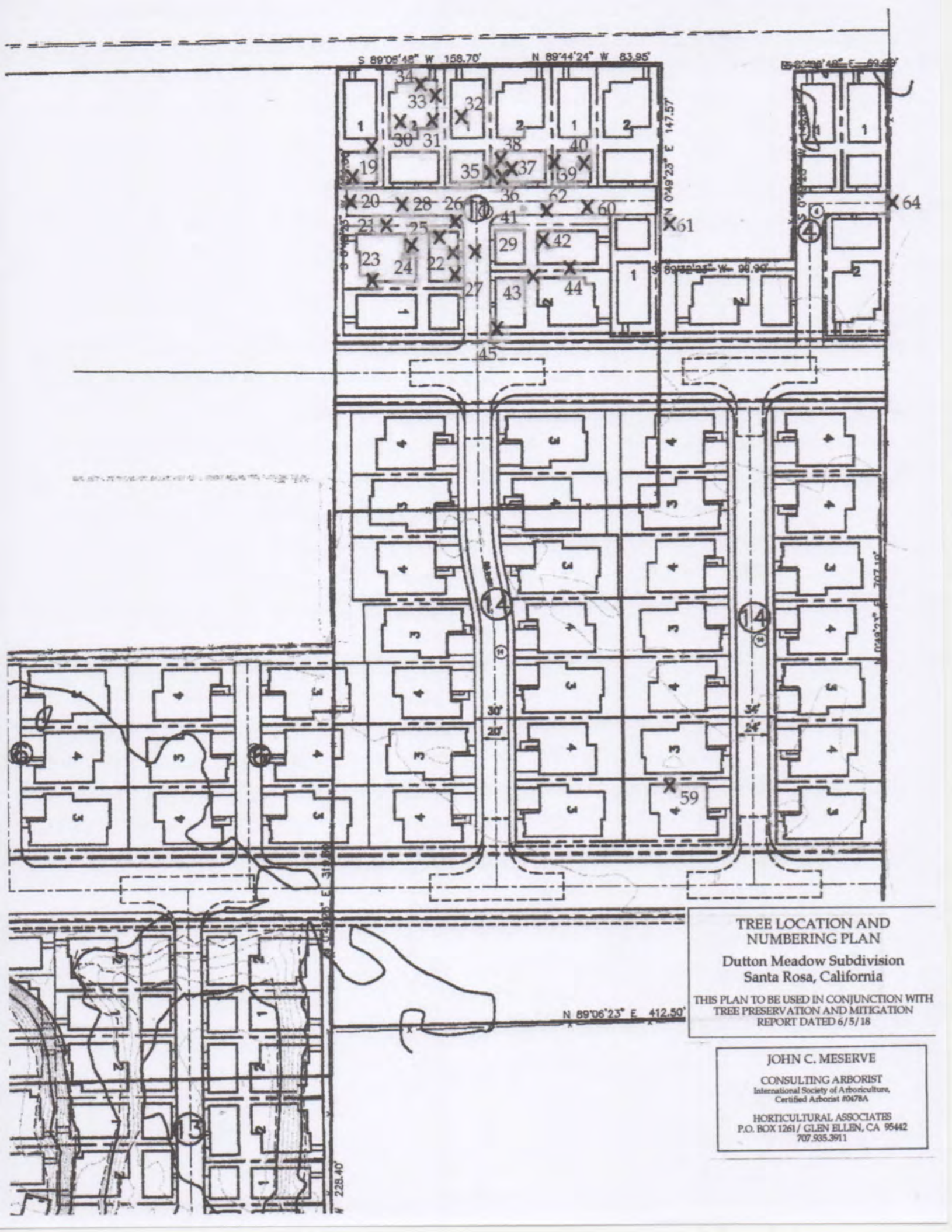

TREE LOCATION AND NUMBERING PLAN

Dutton Meadow Subdivision
Santa Rosa, California

THIS PLAN TO BE USED IN CONJUNCTION WITH TREE PRESERVATION AND MITIGATION REPORT DATED 6/5/18

JOHN C. MESERVE

CONSULTING ARBORIST
International Society of Arboriculture,
Certified Arborist #0478A

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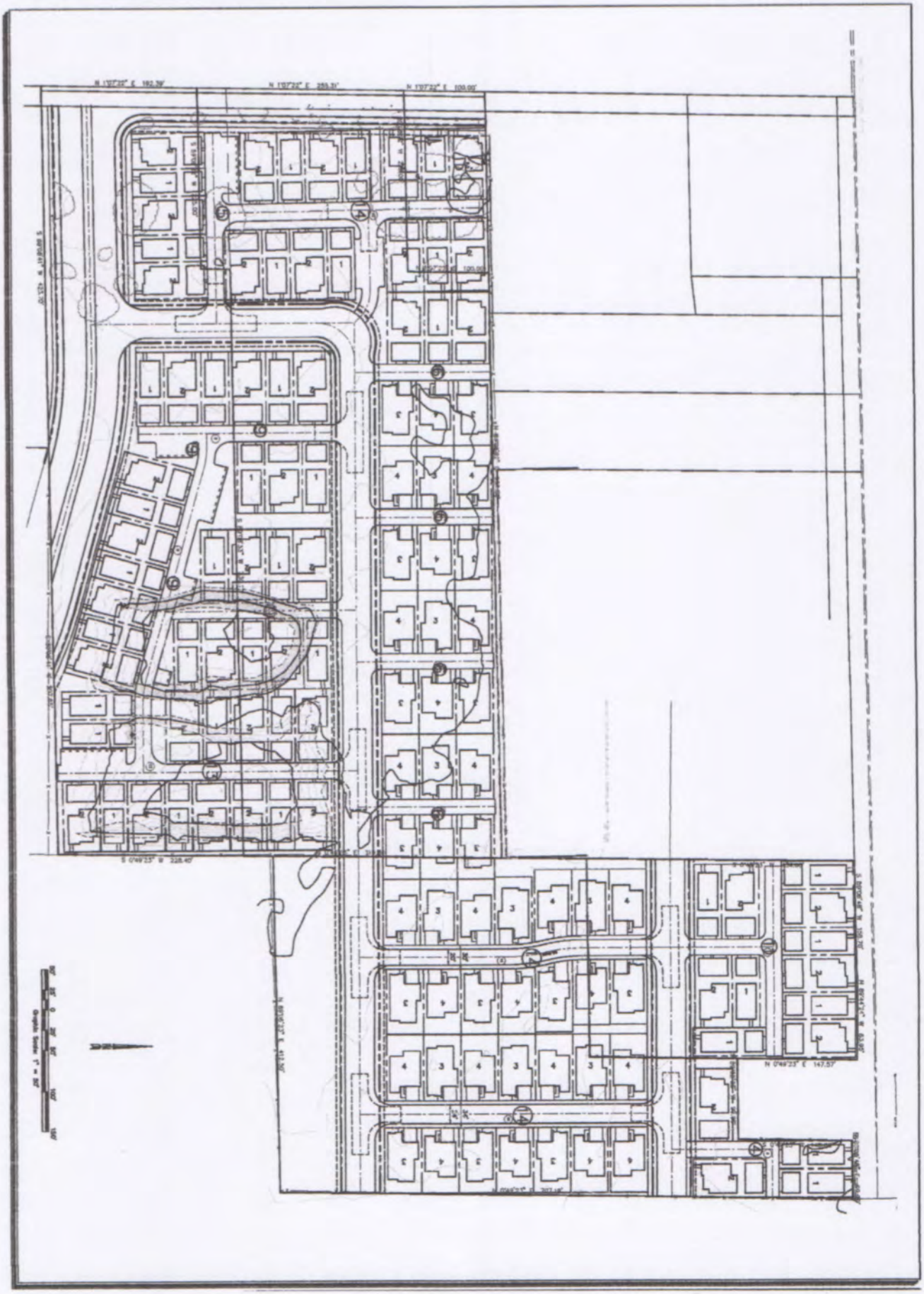

Appendix F: 2018 Phase I Environmental Site Assessment

DUTTON MEADOWS
SANTA ROSA, CALIFORNIA

PHASE I ENVIRONMENTAL SITE ASSESSMENT

SUBMITTED TO
Mr. Robin Miller
Trumark Homes, LLC
3001 Bishop Drive, Suite 100
San Ramon, CA 94583

PREPARED BY
ENGEO Incorporated

July 24, 2018

PROJECT NO.
7699.200.303

ENGEO
Expect Excellence

Project No.
7699.200.303

July 24, 2018

Mr. Robin Miller
Trumark Homes, LLC
3001 Bishop Drive, Suite 100
San Ramon, CA 94583

Subject: Dutton Meadows
Santa Rosa, California

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Mr. Miller:

ENGEO is pleased to present our phase I environmental site assessment of the subject property (Property), located in Santa Rosa, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and the American Standard Testing Method (ASTM) Practice E1527-13. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM E1527-13.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Kelsey Gerhart

Jeffrey A. Adams, PhD, PE

kg/jaa/dt

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EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the approximately 18-acre Property located southeast of the intersection of Dutton Meadow and Hearn Avenue in Santa Rosa, California (Property). Please refer to Table 1.1 for both physical addresses and Assessor's Parcel Numbers (APN) associated with the Property.

A review of historical aerial photography and previous reports found the Property had formerly been utilized for ranch and agricultural purposes. The eastern portion of the Property appears to have been cultivated with orchards, and the western portion of the Property had been utilized as a ranch; a portion of this ranch appears to have been used for the stockpiling of material.

The current development plan includes 127 single-family residential units, 75 detached garage units, interior roads, underground utilities, exterior flatwork, and landscaping.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property

In 2007, ENGEO conducted a phase II environmental site assessment for the Property to address both the historical use of the Property, including the former ranch and cultivation areas, and the presence of undocumented stockpiles at the Property.

A review of the analytical findings associated with the soil samples recovered from the former ranch and orchard areas did not identify pesticide concentrations above respective screening levels. Samples recovered from the former ranch and orchards exhibited metallic analytes (arsenic, lead, and mercury levels) consistent with background concentrations for the State of California. Based on the analytical findings, ENGEO indicated that the Property does not appear to have been significantly impacted from past agricultural practices.

For stockpile sampling, TPH-gasoline, OCP, PCB, VOC, and SVOC analytes were not detected above laboratory reporting limits. TPH-diesel and TPH-motor oil concentrations were below screening levels. Metallic analytes were reported within the expected range of background concentrations from the State of California. ENGEO opined that the stockpiled soils on the Property appear to be suitable, from an environmental standpoint, for unrestricted land use, and would not be classified as California hazardous waste based on the analyses performed.

At the time of the of the 2007 environmental site assessment, the earliest historical aerial photograph dated 1953 depicted orchards on the eastern portion of the Property. A review of the recently provided EDR aerial photograph dated 1942 found the orchard had extended over the central portion of the Property. This portion of the Property was not sampled at the time of the 2007 agrichemical assessment.

Based on the findings of this assessment, no controlled Recognized Environmental Conditions (RECs), or historical RECs were identified for the Property; however, the following REC was identified for the Property:

- A review of historical aerial photographs found the Property and the surrounding area had been historically utilized as agricultural land. Based on the readily available historical aerial photographs at the time of the 2007 assessment, an agrichemical assessment was performed on the eastern portion of the Property. A review of historical aerial photographs from the 1940s found the extent of the former orchard had traversed the central portion of the Property. Based upon the timeframe of agricultural use, pesticides or other agricultural chemicals might have been applied to the portion of the Property not sampled at the time of the 2007 assessment and thus could be present in near-surface soils. These chemicals are persistent in the environment and toxic concentrations may remain many years after application. ENGEO recommends an agrichemical assessment, including the recovery of near-surface soil samples, be performed within the uncharacterized former orchard area prior to site redevelopment activities.

Based on a review of records and historical aerial photographs, features of potential environmental concern were identified for the Property. These features, not considered to be RECs, include the following:

- Based on our review of historic aerial photographs, the existing structures situated on the northeastern portion of the Property were constructed no later than the early 1970s. In our experience, rural residential structures and associated outbuildings of this age may exhibit actionable concentrations of lead and organochlorine pesticides in near-surface soil at the building perimeters. Prior to site redevelopment, ENGEO recommends a near-surface soil-sampling program be conducted along the perimeter of the buildings to address potential lead and pesticide impact at the Property.

- Given the age of the existing structures, it is conceivable that both lead-based paint and asbestos-containing material are present within the structures. ENGEO recommends retaining a licensed contractor to perform an asbestos and lead-based paint survey prior to demolition.

- The existing stockpiles were characterized in 2007. If additional material has been imported to the Property and/or added to the stockpile subsequent to characterization activities performed in 2007, ENGEO recommends the stockpile be re-characterized prior to site reuse and/or off-haul.

- If a septic system is uncovered during future site grading activities, ENGEO recommends abandoning and disposing of the septic tank under appropriate State and local regulations.

- ENGEO recommends the existing well be properly abandoned/destroyed under appropriated State and local regulations.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). Any exceptions to, or deletions from, this practice are described in Section 5.1 of this report. Based on the findings of this assessment, ENGEO recommends additional studies as outlined above.

1.0 INTRODUCTION

1.1 SITE LOCATION AND DESCRIPTION

ENGEO conducted a phase I environmental site assessment for the approximately 18-acre Property located southeast of the intersection of Dutton Meadow and Hearn Avenue in Santa Rosa, California (Property). Please refer to Table 1.1 for both physical addresses and Assessor's Parcel Numbers (APN) associated with the Property.

TABLE 1.1: Property Information

PHYSICAL ADDRESS	APN	AREA (acres)
1200 Hearn Avenue	043-191-016	1.84
1112 Hearn Avenue	043-191-024	4.6
2684 Dutton Meadow	043-071-007	8.04
2666 Dutton Meadow	043-071-022	3.18
2650 Dutton Meadow	043-071-023	0.46

A review of historical aerial photography and previous reports found the Property had formerly been utilized for ranch and agricultural purposes. The eastern and central portions of the Property appear to have been cultivated with orchards, and the western portion of the Property had been utilized as a ranch; the southern portion of this ranch appears to have been used for the stockpiling of soil material.

1.2 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES

The northeastern portion of the relatively level Property is occupied by several residential structures and associated outbuildings. The remainder of the Property is primarily used as undeveloped open space with seasonal grasses and limited amounts of construction debris observed throughout. Two large stockpiles were observed on the southern portion of the Property at the time of the site reconnaissance.

The Property is bounded by residential development to the north and south, what appears to be former agricultural land to the east, and Meadow View Elementary School to the west. The Property is located in a predominantly residential area of Santa Rosa.

1.3 SITE AND VICINITY CHARACTERISTICS

According to published topographic maps, the relatively level Property lies at an elevation of approximately 122 feet above mean sea level (msl). The Property is located within the Coast Ranges geologic province of California, a series of northwest-trending ridges and valleys. Locally, the Property is mapped as underlain by alluvium and fluvial deposits (Sims, 1973). This material generally consists of sand, silt, gravel and clay.

Geocheck – Physical Setting Source Summary of the Environmental Resources Data report (Appendix A) indicated two Federal United States Geological Survey (USGS) and 17 state wells located within 1 mile of the Property. The Physical Setting Source Summary also provided hydrogeologic information for use as an indicator of groundwater flow direction in the immediate area. Based on 28 data points, groundwater flow within 1 mile of the Property appears to be variable.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the Property. The website identified three 'residential' wells and one water quality station within 1 mile of the Property. A residential well located approximately 0.7 mile southeast of the Property reported recent depth to groundwater measurements ranging between approximately 19 and 26 feet below the ground surface.

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

We reviewed the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website and map database to determine if any historic oil and/or gas wells were located within the Property. No wells were mapped within 1 mile of the Property.

1.4 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of Trumark Homes, LLC. The objective of this phase I environmental site assessment is to identify Recognized Environmental Conditions (RECs) associated with the Property. As defined in the ASTM Standard Practice E1527-13, an REC is "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

1.5 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of previous environmental reports.
- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

1.6 SIGNIFICANT ASSUMPTIONS OR DEVIATIONS FROM ASTM STANDARD PRACTICE

There were no significant deviations from the ASTM Standard.

1.7 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

1.8 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, Trumark Homes, LLC. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage, that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

2.0 RECORDS REVIEW

2.1 PROPERTY RECORDS

2.1.1 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report, prepared by First American Title Company and dated February 13, 2018, was provided for our review. The Property title is vested in:

- Hearn Avenue LLC, A California Limited Liability Company, as to Parcels A and B DM Associates, LLC, A California Limited Liability Company, as to Parcels C, D and E.

A review of the provided Title Report found several Notices of Non-Compliance (Violation) issued by the City of Santa Rosa Department of Community Development. In general, the reported violations of the Santa Rosa City Code (SRCC) were associated with the maintenance and upkeep of the existing structures on the Property.

This report is included in Appendix D.

2.2 PREVIOUS ENVIRONMENTAL REPORTS

ENGEO; Phase I Environmental Site Assessment, Minoia Property, Santa Rosa, California; April 20, 2007; Project No. 7699.2.002.02

ENGEO conducted a phase I environmental site assessment for the eastern portion of the greater study area in 2007.

Based on the findings of the assessment, ENGEO identified the following potential recognized environmental conditions (RECs) at the Property:

- Several material storage areas were observed during the site reconnaissance. Materials viewed in some of these areas included hazardous and potentially hazardous materials.

- An orchard occupied the southern Property area since at least the mid-1950s through the mid-1960s.

Based on the findings of their assessment, ENGEO recommended the following:

- A study should be conducted to evaluate the former orchard area for the presence of persistent agrichemicals.

- If not in use, the hazardous and potentially hazardous materials stored on the Property should be removed and disposed of in an appropriate manner.

- An asbestos and lead-based paint survey should be conducted of the structures prior to their renovation or demolition.

- The water well should be abandoned in accordance with State and local regulations if not used for beneficial purposes. Groundwater should be tested if it is intended for beneficial use.

- Septic systems, if determined to be present, should be removed in accordance with the State and local regulations.

ENGEO; Phase I Environmental Site Assessment, Dutton Meadow Properties, Santa Rosa, California; April 20, 2007; Project No. 7699.2.001.02

ENGEO conducted a phase I environmental site assessment for the western portion of the greater study area in 2007.

Based on the findings of the assessment, ENGEO identified the following potential RECs at the Property:

- Two large undocumented stockpiles were encountered during the site reconnaissance. No documentation was located concerning the origin of the soil.

- During a site reconnaissance of the Property, ENGEO observed a number of areas of debris, including empty paint and oil containers.

- A former poultry farm may have operated on the Property.

Based on the findings of their assessment, ENGEO recommended the following:

- A study should be conducted to evaluate the Property for the presence of persistent agrichemicals associated with the poultry farm operation.

- The stockpiled materials should be characterized prior to re-use on site or removed to an off-site location.

- The debris piles should be removed and disposed of in an appropriate manner. Efforts to secure the Property should be undertaken to discourage dumping of additional material.

- An asbestos and lead-based paint survey should be conducted of the structures prior to their renovation or demolition.

- Septic systems. If determined to be present, should be removed in accordance with the State and local regulations.

- Water wells, if determined to be present, should be abandoned in accordance with State and local regulations.

ENGEO; Phase II Environmental Site Assessment, Dutton Meadow Residential Development, Santa Rosa, California; October 3, 2007; Project No. 7699.2.001.03

ENGEO conducted a phase II environmental site assessment for the Property in 2007 to address both the historical use of the Property, including the former ranch and cultivation areas, and the presence of undocumented stockpiles at the Property.

On August 9, 2007, 16 discrete soil samples were recovered from the former ranch and cultivated areas. The soils samples were analyzed on a discrete basis for arsenic and analyzed as four 4-point composites for organochlorine pesticides (OCPs), lead, and mercury.

A review of the analytical findings associated with the soil samples recovered from the former ranch and orchard areas did not identify pesticide concentrations above respective screening levels.

Samples recovered from the former ranch and orchards exhibited metallic analytes (arsenic, lead and mercury levels) consistent with background concentrations for the State of California. Based on the analytical findings, ENGEO indicated that the Property does not appear to have been significantly impacted from past agricultural practices.

On September 29, 2007, ENGEO recovered a total of 44 soil samples from stockpiled material on site. The samples were analyzed as eleven 4-point composite samples for total petroleum hydrocarbons (TPH) as gasoline, diesel and motor oil, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), OCPS, polychlorinated biphenyls (PCBs), and CAM-17 metals.

TPH-gasoline, OCP, PCB, VOC, and SVOC analytes were reported below the laboratory reporting limits. TPH-diesel and TPH-motor oil concentrations were below screening levels. Metallic analytes were reported within the expected range of background concentrations from the State of California. ENGEO opined that the stockpiled soils on the Property appear to be suitable, from an environmental standpoint, for unrestricted land use, and would not be classified as California hazardous waste based on the analyses performed.

2.3 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

2.3.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

TABLE 2.3.1-1: Historical Topographic Maps

QUAD	YEAR	DESCRIPTION
Santa Rosa	1916	The Property appears to be occupied by two structures; one structure is depicted on the northeastern portion of the Property, and a second structure is visible on the southwestern corner of the Property. Two roadways are shown in the present-day locations of Hearn Avenue and Dutton Meadow. A railroad line is shown east of the Property.
Santa Rosa	1944	Land use conditions appear similar to the earlier topographic map. Several additional structures are visible on the adjacent parcels.
Santa Rosa/Sebastopol	1954	Orchards appear to be mapped on both the eastern and central portion of the Property. Four structures are visible on the northern portion of the easternmost parcels, and three structures are mapped on the western side of the Property. Orchards and small structures are shown in the surrounding area. Development, including the county fairgrounds and Veteran's Memorial Auditorium, appears to have had advanced further north of the Property. The Naval Auxiliary Air Station (identified as inactive) is mapped northwest of the Property.
Santa Rosa/Sebastopol	1968 and 1973	Several additional structures are shown on the western portion of the Property. The northern portion of the easternmost parcels appear to be mapped as part of the developed area and a single structure is shown on the central portion of the eastern side of the Property. A flood control channel and Highway 101 are mapped southeast and east of the Property, respectively. Residential development continues to spread further north of the Property. The Santa Rosa Air Center is now mapped west-northwest of the Property. Highway 101 is shown further east
Sebastopol/ Santa Rosa	1980 and 1998	Conditions at the Property appear similar to the earlier topographic maps. Development continues to spread in the surrounding area.
Sebastopol/ Santa Rosa	2012	Individual structures are no longer depicted on the topographic map. Paved roadways appear to be shown in their present-day configurations.

2.3.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix E.

TABLE 2.3.2-1: Aerial Photographs

YEAR	DESCRIPTION
1942	The eastern and central portion of the Property appears to have been cultivated with orchards. Structures, likely associated with both dwellings and agricultural practices, are visible on the northernmost portion of the eastern parcels and on the western side of the Property near the present-day Dutton Meadow roadway. The neighboring properties appear to also be utilized as agricultural land. A creek is visible further east of the Property.
1952	The central portion of the Property appear to no longer be cultivated with orchards. The easternmost portion of the Property remains cultivated with orchards and structures are visible on the northern portion of the eastern parcels. Two long, linear structures, possibly greenhouses, are visible on the eastern Property boundary. The western portion of the Property appears to be comprised of fallow land with structures (likely farmhouses and associated outbuildings) on the western Property boundary. Residential development is visible north of the Property.

YEAR	DESCRIPTION
1968 and 1973	Orchards are no longer visible on the Property. The northern and southern corners of the westernmost portion of the Property remains developed with several structures including a linear structure, likely a coop. Numerous structures are visible on the northern side of the easternmost portion of the Property. An additional structure is visible on the central portion of the easternmost parcels. Orchards are still visible both east and south of the Property. Residential development continues to spread further north of the Property.
1982 and 1985	Conditions at the Property and neighboring parcels appear similar to the earlier photographs. The structure, likely a coop, is no longer visible on the southwestern portion of the Property.
1993	Land use conditions at the Property appear similar to the earlier photographs with the exception of what appears to be dry farming activities on the western portion of the Property.
2006	The Property no longer appears to be utilized for agricultural activities. The southern part of the central portion of the Property appears to be occupied by two large stockpiles.
2010	The structures formerly located on the western portion of the Property appear to have been demolished, with the exception of one structure. Paths, likely associated with the hauling of import material, are visible within the vicinity of the stockpiled material. The northernmost portion of the eastern side of the Property remains developed.
2014	Structures are no longer visible on the western side of the Property. A few of the structures located on the eastern side of the Property appear to have been demolished, including the structure located on the central portion of the eastern parcels; several structures remain visible on the northwestern corner of the eastern parcels.

2.3.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties.

2.3.4 City Directory

City Directories, published since the 18th century for major towns and cities, lists the name of the resident or business associated with each address.

The following listings were identified for the Property:

- 1200 Hearn Avenue
  - Residential listings (individuals' names) (1953-2006)

- 1112 Hearn Avenue
  - Residential listings (individuals' names) (1953-1990)

No listings were identified for 2650, 2666, and 2684 Dutton Meadow.

Surrounding listings primarily include residential, school district/schools, and a church (the Tree of Fellowship). A city directory search conducted by EDR is located in Appendix F.

2.4 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A.

A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

2.4.1 Standard Environmental Records

2.4.1.1 Subject Property

The Property is not listed on the Standard Environmental Record source databases.

2.4.1.2 Other Properties

The following databases include facilities listed within the appropriate ASTM search distances of the Property on Standard Environmental Records sources.

TABLE 2.4.1.2-1

FACILITY	STREET	DATABASES
MEADOWVIEW ELEMENTARY SCHOOL EXPANSION	2641 DUTTON MEADOW	ENVIROSTOR
RAY'S FOOD CENTER	2423 DUTTON AVE	LUST
MEADOW VIEW EXPANSION, HEARN AVE. PARCELS	1550 & 1590 HEARN AVENUE	ENVIROSTOR
FOUCHE AUTO WRECKERS	2290 DUTTON AVE	SEMS, SLIC
FOUCHE BROS	2290 DUTTON AVENUE	SLIC, ENVIROSTOR
MEAD CLARK LUMBER SUPPLY	RAILROAD AVENUE 175	LUST
AM AND PM MINI MARKET	440 HEARN AVE	SLIC, LUST
A-1 MINI STORAGE	2868 DUTTON AVENUE, SOUTH	SLIC
SHELL SERVICE STATION	2575 CORBY DR	RCRA-SQG, LUST
CORBY SHELL	2575 CORBY AVE	LUST
MANLY HONDA	2750 CORBY AVENUE	AST, LUST
ROSELAND UNIVERSITY PREP CHARTER SCHOOL	1777 WEST AVENUE	ENVIROSTOR
MANLY MITSUBISHI	2755 CORBY AVENUE	LUST
BIDDULPH CHEVROLET	2770 CORBY AVE	RCRA-SQG, LUST
DUTTON & ASSOCIATES	1850 BURBANK AVENUE	SLIC
PRESTIG IMPORTS	2800 CORBY AVE	RCRA-SQG, LUST
MANI, RICHARD	200 TALMAGE	LUST
FORMER MANI SITE	200 TALMADGE ROAD	LUST
REDWOOD CHEMICAL	2450 STONEY POINT ROAD	ENVIROSTOR
DUTTON & ASSOCIATES	1800 BURBANK AVENUE	SLIC
PRESTIGE ACURA	CORBY AVENUE 2840	LUST
SANTA ROSA AMC-JEEP MAZDA	2820 CORBY AVE	LUST
ZUMWALT MAGRINI USED CARS	2820 CORBY	LUST
PRESTIGE ACURA	2840 CORBY AVENUE	LUST
UNITED GROCERS	DUTTON AVENUE 3000	LUST
MARKET WHOLESALE GROCERY CO	3000 DUTTON AVE	LUST
FREEMAN TOYOTA	2875 CORBY	LUST

FACILITY	STREET	DATABASES
HEPPER, TOM	2775 SANTA ROSA AVENUE	LUST
PRESTIGE LINCOLN MERCURY	2979 CORBY AVENUE	LUST
NEW ROSELAND AREA ELEMENTARY SCHOOL	1683 BURBANK AVENUE	ENVIROSTOR
MARTIN PROPERTY	BELLEVUE AVENUE EAST	ENVIROSTOR
GOLDEN TECHNOLOGY SITE	3017 AND 3019 SANTA ROSA AVENUE	ENVIROSTOR, RESPONSE
REDWOOD OIL COMPANY	455 YOLANDA AVENUE	LUST
SONOMA COUNTY INDIAN HEALTH PROJECT, INC	1440 STONY POINT ROAD	ENVIROSTOR
SANTA ROSA CIRCUITS	35 AND 48 WEST BARHAM AVENUE	ENVIROSTOR
FLYERS ENERGY 3017	459 YOLANDA AVENUE	LUST
SANTA ROSA PLATING WORKS	80 BARHAM AVE	ENVIROSTOR
BROMLEY PROPERTY	1500 SANTA ROSA	SLIC, LUST
TRANSCO TRANSMISSION	1470 SANTA ROSA AVENUE	LUST, ENVIROSTOR
BURT STREET DEVELOPMENT	YOLANDA & PETALUMA ROADS	VCP, ENVIROSTOR
PROPOSED DUTTON AVENUE SCHOOL SITE	3255/3261 DUTTON AVENUE	ENVIROSTOR
METAL ENGINEERING	532 ASTON AVE	LUST

2.4.2 Additional Environmental Records

2.4.2.1 Subject Property

The Property is listed on the following Additional Environmental Record source databases.

TABLE 2.4.2.1-1

FACILITY	STREET	DATABASES
HEARN AVE LLC VICTORIA VAGES	1112 HEARN AVE	HAZNET
BELLEVUE RANCH PHASE 8	2684 DUTTON MEADOW	FINDS

2.4.2.2 Other Properties

The following database(s) include(s) facilities listed within the appropriate ASTM search distances of the Property on the Additional Environmental Record sources.

TABLE 2.4.2.2-1

FACILITY	STREET	DATABASES
HEARN AVENUE LLC	1120 HEARN AVE	HAZNET
MEADOWVIEW ELEMENTARY SCHOOL EXPANSION	2641 DUTTON MEADOW	SCH
RAY & JOE LAZZINI	2423 DUTTON AVE	FID, SWEEPS UST
RAY'S FOOD CENTER	2423 DUTTON AVE	HIST UST, HIST CORTESE
EK TEST & REPAIR	2423 DUTTON AVE	HIST UST, CUPA
ANDYS SERVICE	2423 DUTTON AVE	EDR GAS STATIONS

FACILITY	STREET	DATABASES
MEADOW VIEW EXPANSION, HEARN AVE. PARCELS	1550 & 1590 HEARN AVENUE	SCH
SHIBBYS CLEANING	1525 HEARN AVE	EDR DRY CLEANERS
HAYNES RESIDENCE	2803 S DUTTON AVE	SWEEPS UST
SONOMA RANGER UNIT HEADQUARTER	2210 WESST COLLEGE AVE	FID, SWEEPS UST, HIST UST
GREG'S AUTOMOTIVE	DUTTON	PROP65
RELIABLE HARDWARE & STEEL CO.	2707 DOWD DR	FID, HIST UST, SWEEPS UST
MEAD CLARK LUMBER SUPPLY	3RD ST	HIST CORTESE
AM AND PM MINI MARKET	440 HEARN AVE	CHMIRS, SWEEPS UST
AM/PM MINI MART	440 HEARN AVENUE	PROP65, HIST CORTESE
SHELL SERVICE STATION	2575 CORBY DR	FINDS, ECHO, HAZNET
CORBY SHELL	2575 CORBY AVE	CUPA, HAZNET, SWEEPS UST, HIST CORTESE
MANLY HONDA	2750 CORBY AVENUE	HIST CORTESE
ROSELAND UNIVERSITY PREP CHARTER SCHOOL	1777 WEST AVENUE	SCH
MANLY MITSUBISHI	2755 CORBY AVENUE	SWEEPS UST, HIST CORTESE
BIDDULPH CHEVROLET	2770 CORBY AVE	FINDS, ENF, ECHO, FID, HIST UST, SWEEPS UST, HIST CORTESE
PRESTIG IMPORTS	2800 CORBY AVE	FID, ENF, HIST UST, EMI, CORTESE, SWEEPS UST
MANI, RICHARD	200 TALMAGE	HIST CORTESE
FORMER MANI SITE	200 TALMADGE ROAD	ENF
SANTA ROSA AMC-JEEP MAZDA	2820 CORBY AVE	FID, HIST UST, SWEEPS UST
ZUMWALT MAGRINI USED CARS	2820 CORBY	HIST CORTESE
PRESTIGE ACURA	2840 CORBY AVENUE	SWEEPS UST, HIST CORTESE
MARKET WHOLESALE GROCERY CO	3000 DUTTON AVE	HIST UST, HIST CORTESE
FREEMAN TOYOTA	2875 CORBY	PROP65, HIST CORTESE
HEPPER, TOM	2775 SANTA ROSA AVENUE	PROP65, HAZNET, HIST CORTESE, ENF
PRESTIGE LINCOLN MERCURY	2979 CORBY AVENUE	PROP65, HIST CORTESE
OPTICAL COATING LABORATORY INC	STORMDRAIN @ NORTHPOINT	PROP65
NEW ROSELAND AREA ELEMENTARY SCHOOL	1683 BURBANK AVENUE	SCH
FORMER ARCO STATION	1745 SANAT ROSA AVE	PROP65
MARTIN PROPERTY	BELLEVUE AVENUE EAST	SCH
GOLDEN TECHNOLOGY SITE	3017 AND 3019 SANTA ROSA AVENUE	HIST CALSITES, DEED
REDWOOD OIL COMPANY	455 YOLANDA AVENUE	EMI, PROP65, NPDES, ENF, CORTESE, HIST CORTESE
RESIDENCE	1267 CORBY AVE	PROP65
FLYERS ENERGY 3017	459 YOLANDA AVENUE	PROP65, HAZNET, HIST CORTESE, NPDES
BROMLEY PROPERTY	1500 SANTA ROSA	PROP65, HIST CORTESE
RINO GAS	1410 SANTA ROSA AVENUE	PROP65

FACILITY	STREET	DATABASES
TRANSCO TRANSMISSION	1470 SANTA ROSA AVENUE	PROP65, HIST CORTESE
ANGIE KENDALL	2611 GIFFEN AVENUE	PROP65
PROPOSED DUTTON AVENUE SCHOOL SITE	3255/3261 DUTTON AVENUE	SCH
METAL ENGINEERING	532 ASTON AVE	FID, HIST UST, PROP65, SWEEPS UST

The following summarizes relevant Property-related information:

- FINDS listing for Bellevue Ranch Phase 8 located at 2684 Dutton Meadow (dated October 10, 2015). The listing appears to be associated with a Clean Water Act Section 401 water quality certification.

- The HAZNET listing for the Property is associated with the disposal of the following waste:
  - 1112 Hearn Avenue – Hearn Ave LLC Victoria Vages: asbestos-containing waste; 5.52 tons disposed of at a landfill or a surface impoundment that will be closed as a landfill (2015)

The following summarizes nearby facilities identified on the GeoTracker and EnviroStor databases:

- Ray's Food Center, located at 2423 Dutton Avenue (approximately 150 feet northeast of the Property), is listed as a closed leaking underground storage tank (LUST) site. The identified contaminant of concern includes gasoline and the potential media of concern includes an aquifer used for drinking water supply. A review of the site history found four underground storage tanks (USTs) were removed from the Property in 1986. Approximately 450 cubic yards of soil was removed from the Property in 1990. Oxygen sparging was performed at the site but proved ineffective. A pilot test injection of 150 pounds of Klozur CR mixed with water occurred in 2013. Water supply wells located at 2450 Dutton Avenue and 1103 Hearn Avenue were sampled in 2015 and were non-detect for all constituents of concern. On September 12, 2017, the site was granted closure with site management requirements in place.

- Meadowview Elementary School Expansion, located at 2641 Dutton Meadow (approximately 200 feet northwest of the Property), is listed as a certified DTSC Cleanup Program site. In 2009, reports indicate that the shallow soil surrounding the former residence and an out-building were impacted with elevated concentrations of both lead and OCPs. Remedial work was performed in 2015. On June 1, 2016, DTSC approved the removal action completion report (RACR) with no further action.

- Fouche Auto Wreckers, located at 2290 Dutton Avenue (approximately 1,000 feet northeast of the Property), is identified as open cleanup program site that is under remediation. Soil and groundwater were reportedly affected by the auto wrecking activities performed at the site. A review of the case summary found soil cleanup work has been performed. As indicated in a report published by Edd Clark & Associates, Inc. (Edd) in 2015, historic and current groundwater monitoring at the site has indicated that 1,1,1-trichloroethane (TCA) and its breakdown product 1,1-dichloroethene (1,1-DCE) are the primary residual contaminants of concern in groundwater since the extensive cleanup was conducted in 2001 and 2006. Based on groundwater sampling performed in 2015, TCA and 1,1-DCE were reported at

concentrations of <0.5 micrograms per liter (µg/L) in all the remaining wells; Edd opined that the remedial actions at the site had removed the former source of halogenated VOCs (HVOCs) at the site. As indicated on the GeoTracker database, soil testing for lead and groundwater testing for HVOCs is ongoing, and the site is currently being developed into residential housing.

Based on the distances to the identified database sites, the reported direction of groundwater flow, and the EDR findings, none of the above-stated off-Property sites would be expected to pose an environmental risk to the Property. Properties that are on the "Orphan Summary" list appear to be located beyond the ASTM recommended radius search criteria and/or do not appear to pose an environmental risk to the Property.

2.5 REGULATORY AGENCY FILES AND RECORDS

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

TABLE 2.5-1: Regulatory Agency Records

NAME OF AGENCY	RECORDS REVIEWED

City of Santa Rosa City Clerk	We contacted the City of Santa Rosa for files pertaining to the Property. We reviewed the following Property-related files at City Hall on July 20, 2018:
	
	• 2684 Dutton Meadow
	  ○ Permit - 16,000-cubic-yard stockpile (2005)
	  ○ Permit - Demolition of substandard house (2012)
	• 1112 Hearn Avenue
	  ○ Permi t- Replace existing power pole (2008)
	  ○ Permit - Additions/alterations to residential structure (expired 2008)
	  ○ Permit - Electrical (expired 2008)
	  ○ Permit - Demolition of 925-square-foot house, 400-square-foot shed and clean up garbage, trailers, and vehicles (2014)
	  ○ Permit - Additions/alterations (expired 2015)
	  ○ Permit - Repair or replace three windows. Fix damaged trim and/or framing around windows (2007)
	• 1200 Hearn Avenue
	  ○ Permit - Additions/alterations to residential structure (expired 2008)
	  ○ Permit - Demolition of 556-square-foot garage structure (2011)
	  ○ Permit - Demolition of 1,274-square-foot duplex structures J #3T324 (2011)
	  ○ Permit - Replace existing furnace in Unit C (2013)
	  ○ Map showing the extent of the non-jurisdictional wetlands on the project site (2003)
	  ○ Letter from RWQCB titled, Notice of Coverage, Waiver of Waste Discharge Requirement for Minor Dredging and Filling Activities (2006)

NAME OF AGENCY	RECORDS REVIEWED

	• 2650 Dutton Meadow
	  ○ Permit - Comply with code enforcement case and demo SFD and rear outbuilding. All utilities to be capped at property line (2008)
	• 2666 Dutton Meadow
	  ○ Permit - Comply with code enforcement case demo existing barn. Cap utilities at property line (2008)
	
	In addition to the aforementioned documents, the following planning files were provided for our review: a General Plan Amendment Package (2003) and associated correspondence, rezoning and tentative map documentation, conditional use permit applications, a letter indicating the issuance of a 401 certification from the North Coast Regional Water Quality Control Board (2006), design reviews, and related planning documentation.
	
	No environmental and/or hazardous materials related documentation was identified by the City at the time of the records request.

City of Santa Rosa Fire Department	We contacted the Santa Rosa Fire Department for files pertaining to the Property. A representative informed us that no records were identified for the Property.
County of Sonoma Department of Health Services- Environmental Health & Safety	We contacted the County of Sonoma Department of Health Services – Environmental Health & Safety for Property-related information. A representative informed us that no records were identified for the Property.

Sonoma County Permit & Resource Management	We contacted the Sonoma County Permit & Resource Management for files pertaining to the Property. On April 24, 2018, a representative provided us with a list of the permit history by address and APN.
	
	We also reviewed the Permit and Resource Management Department online database for information pertaining to the Property.
	
	The following information was identified for the Property:
	
	• 1200 Hearn Avenue (APN 043-191-016):
	  ○ Record of Survey – Map approved (2006)
	  ○ Building – Repair (1988)
	  ○ Building – Foundation (1988)
	  ○ Building – Fire repair (1984)
	  ○ Building – Fire repair (1984)
	  ○ Building – Repair SFD (1979)
	• 1112 Hearn Avenue (APN 043-191-024):
	  ○ Well permit – 5 geotechnical borings (2007)
	  ○ Record of Survey – Map approved (2006)
	  ○ Building – Replace gas line (1987)
	  ○ Building – Replace doors (1987)
	  ○ Building – New roof repair (1986)
	  ○ Electrical – Electric service (1966)

NAME OF AGENCY	RECORDS REVIEWED
	• 2684 Dutton Meadow (APN 043-071-007): ○ Well permit – 5 geotechnical borings (2007) ○ Record of Survey – Map approved (2006) ○ Building – Repair E/P (1979) ○ Building – Ins barn (1979) ○ Building – Ins SFD (1979) ○ Building – Termite repair (1979) ○ Building – E Misc. (1978) ○ Building – Repair Sys (1975) ○ Building – Repair Sys (1975) ○ Building – Repair (1971) • 2666 Dutton Meadow (APN 043-071-022): ○ Record of Survey – Map approved (2006) • 2650 Dutton Meadow (APN 043-071-023): ○ Record of Survey – Map approved (2006) ○ Building – Repair System (1979)
County of Sonoma- Fire & Emergency Services Department	We contacted County of Sonoma Fire and Emergency Services Department for files pertaining to the Property. A representative informed us that no record of CUPA files were identified for the Property.
Sonoma County Assessor's Office	A review of the County Assessor's Office website found the Property is identified with Assessor's Parcel Numbers (APNs) 043-191-016, 043-191-024, 043-071-007, 043-071-022, and 043-071-023.
California State Water Resources Control Board	The California State Water Resources Control Board's online database, GeoTracker, was reviewed for files relating to the Property. There were no listings for the Property in the GeoTracker database. Nearby listings are summarized in the previous section.
Department of Toxic Substances Control	We reviewed the EnviroStor database maintained by the Department of Toxic Substances Control (DTSC) for files relating to the Property. There were no records for the Property listed in the EnviroStor database. Nearby listings are summarized in the previous section.

3.0 SITE RECONNAISSANCE

3.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on July 20, 2018. The reconnaissance was performed by Kelsey Gerhart, Project Engineer of ENGEO. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The Property was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 4.

3.2 GENERAL SITE SETTING

The northeastern portion of the relatively level Property is occupied by several residential structures, associated outbuildings, and parked trailers. A concrete slab and related building material was observed on the western portion of the Property at the time of the site

reconnaissance. Two large stockpiles were observed on the southern portion of the Property as described in the 2007 report. The remainder of the Property is primarily used as undeveloped open-space with overgrown seasonal grasses and limited amounts of construction debris observed throughout. Visibility of the ground surface was limited at the time of the site reconnaissance and the southeastern half of the Property was viewed from the perimeter.

3.3 EXTERIOR OBSERVATIONS

The following table summarizes our observations during the reconnaissance:

TABLE 3.3-1: Exterior Site Observations

FEATURE TYPE	OBSERVATIONS
Structures	Several residential structures, outbuildings/sheds, and parked trailers were observed on the northeastern portion of the Property at the time of the sire reconnaissance. A concrete slab and related building material was observed on the western portion of the Property at the time of the site reconnaissance.
Hazardous Substances and Petroleum Products/Containers	No hazardous substances were observed within the Property at the time of the site reconnaissance. A minor amount of petroleum products/typical vehicular fluids were observed within buckets on the northeastern portion of the Property.
Storage Tanks (underground and above-ground)	No evidence of storage tanks (underground and/or above-ground) were noted at the time of the site reconnaissance.
Odors	No odors indicative of hazardous materials or petroleum material impacts were noted at the time of the site reconnaissance.
Pools of Potentially Hazardous Liquid	No pools of potentially hazardous liquid were observed within the Property at the time of the site reconnaissance.
Drums	One drum with household debris, including wood, was observed on the northeastern portion of the Property at the time of the site reconnaissance.
Polychlorinated Biphenyls (PCBs)	No PCB-containing materials were observed within the Property during our reconnaissance.
Pits, Ponds, and Lagoons	No pits, ponds, or lagoons were observed within the Property at the time of the site reconnaissance.
Stained Soil/Pavement	No stained soil or pavement was observed within the Property at the time of our site reconnaissance; however, select portions of the Property were overgrown with seasonal vegetation and thus limited ground visibility at the time of the site reconnaissance.
Stressed Vegetation	No signs of stressed vegetation were observed on the Property at the time of the site reconnaissance.
Solid Waste/Debris	A minimal amount of solid waste/debris was observed throughout the Property at the time of the site reconnaissance.
Wastewater	No wastewater conveyance systems were observed at the Property during the reconnaissance.
Wells	Current tenants indicated a well is located within the undeveloped portion of the eastern side of the Property. The tenants indicated that the associated structures are no longer visible and the well has been capped but not properly abandoned at the ground surface.

3.4 INTERIOR OBSERVATIONS

The interior of the existing residential dwellings and associated outbuildings were not accessed at the time of the site reconnaissance.

3.5 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

An asbestos and lead-based paint survey was not conducted as part of this assessment. Given the age of the existing structures, it is conceivable that asbestos-containing materials and lead-based paint materials may exist within the structures.

3.6 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that 18 tests were conducted within the Property zip code, with none exceeding the current EPA action level of 4 picocuries per liter {pCi/L}[1]).

In accordance with ASTM E2600-10 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); There are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property or volatile organic compound (VOCs) sources within 1/3 mile of the Property.

4.0 INTERVIEWS

We did not receive completed Client-based or Key Site Manager-based environmental site assessment questionnaires at the time of report publication.

5.0 EVALUATION

5.1 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

The following data gaps were identified:

- We did not receive completed Client-based or Key Site Manager-based environmental site assessment questionnaires at the time of report publication.
- The interior of the existing residential dwellings and associated outbuildings were not accessed at the time of the site reconnaissance.

[1] California Department of Public Health – Radon Program (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

The data gaps identified during this process are not expected to affect the conclusions as to the presence or lack of presence of RECs at the Property.

5.2 FINDINGS AND CONCLUSIONS

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property

In 2007, ENGEO conducted a phase II environmental site assessment for the Property to address both the historical use of the Property, including the former ranch and cultivation areas, and the presence of undocumented stockpiles at the Property.

A review of the analytical findings associated with the soil samples recovered from the former ranch and orchard areas did not identify pesticide concentrations above respective screening levels. Samples recovered from the former ranch and orchards exhibited metallic analytes (arsenic, lead, and mercury levels) consistent with background concentrations for the State of California. Based on the analytical findings, ENGEO indicated that the Property does not appear to have been significantly impacted from past agricultural practices.

For stockpile sampling, TPH-gasoline, OCP, PCB, VOC, and SVOC analytes were not detected above laboratory reporting limits. TPH- diesel and TPH-motor oil concentrations were below screening levels. Metallic analytes were reported within the expected range of background concentrations from the State of California. ENGEO opined that the stockpiled soils on the Property appear to be suitable, from an environmental standpoint, for unrestricted land use, and would not be classified as California hazardous waste based on the analyses performed.

At the time of the of the 2007 environmental site assessment, the earliest historical aerial photograph dated 1953 depicted orchards on the eastern portion of the Property. A review of the recently provided EDR aerial photograph dated 1942 found the orchard had extended over the central portion of the Property. This portion of the Property was not sampled at the time of the 2007 agrichemical assessment.

Based on the findings of this assessment, no controlled RECs or historical RECs were identified for the Property; however, the following REC was identified for the Property:

- A review of historical aerial photographs found the Property and the surrounding area had been historically utilized as agricultural land. Based on the readily available historical aerial photographs at the time of the 2007 assessment, an agrichemical assessment was performed on the eastern portion of the Property. A review of historical aerial photographs from the 1940's found the extent of the former orchard had traversed the central portion of the Property. Based upon the timeframe of agricultural use, pesticides or other agricultural chemicals might have been applied to the portion of the Property not sampled at the time of the 2007 assessment and thus could be present in near-surface soils. These chemicals are persistent

in the environment and toxic concentrations may remain many years after application. ENGEO recommends an agrichemical assessment, including the recovery of near surface soil samples, be performed within the uncharacterized former orchard area prior to site redevelopment activities.

Based on a review of records and historical aerial photographs, features of potential environmental concern were identified for the Property. These features, not considered to be RECs, include the following:

- Based on our review of historic aerial photographs, the existing structures situated on the northeastern portion of the Property were constructed no later than the early 1970s. In our experience, rural residential structures and associated outbuildings of this age may exhibit actionable concentrations of lead and organochlorine pesticides in near surface soil at the building perimeters. Prior to site redevelopment, ENGEO recommends a near-surface soil sampling program be conducted along the perimeter of the buildings to address potential lead and pesticide-impact at the Property.

- Given the age of the existing structures, it is conceivable that both lead-based paint and asbestos-containing material are present within the structures. ENGEO recommends retaining a licensed contractor to perform an asbestos and lead-based paint survey prior to demolition.

- The existing stockpiles were characterized in 2007. If additional material has been imported to the Property and/or added to the stockpile subsequent to characterization activities performed in 2007, ENGEO recommends the stockpile be re-characterized prior to site reuse and/or off-haul.

- If a septic system is uncovered during future site grading activities, ENGEO recommends abandoning and disposing of the septic tank under appropriate State and local regulations.

- ENGEO recommends the existing well be properly abandoned/destroyed under appropriated State and local regulations.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). Any exceptions to, or deletions from, this practice are described in Section 5.1 of this report. Based on the findings of this assessment, ENGEO recommends additional studies as outlined above.

SELECTED REFERENCES

Google Maps (http://maps.google.com)

Google Earth

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

California Department of Conservation (DOGGR) (http://maps.conservation.ca.gov/doms/doms-app.html)

California Department of Public Health – Radon Program (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

ENGEO; Phase I Environmental Site Assessment, Dutton Meadow Properties, Santa Rosa, California; April 20, 2007; Project No. 7699.2.001.02

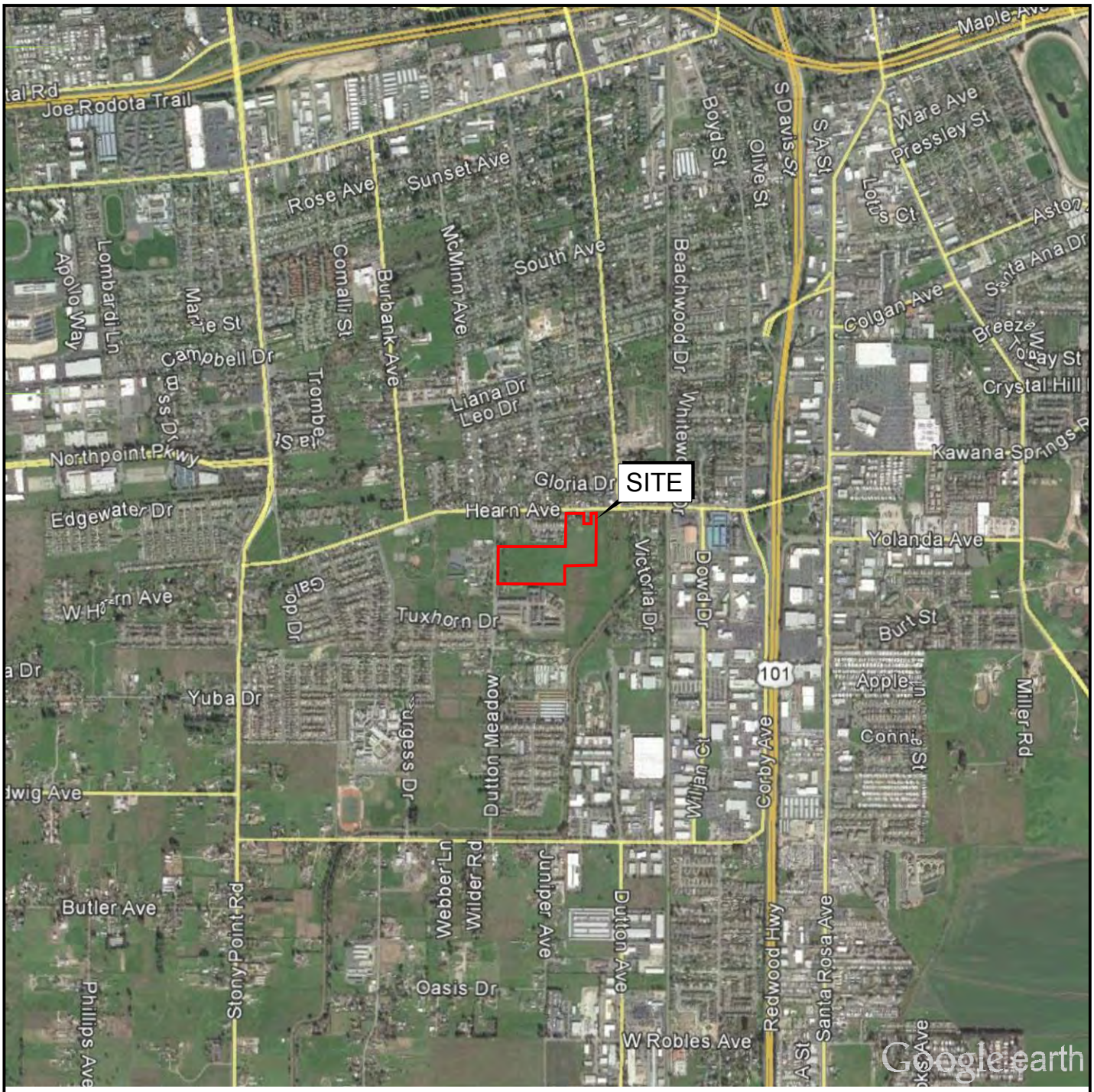
ENGEO; Phase II Environmental Site Assessment, Dutton Meadow Residential Development, Santa Rosa, California; October 3, 2007; Project No. 7699.2.001.03

ENGEO; Phase I Environmental Site Assessment, Minoia Property, Santa Rosa, California; April 20, 2007; Project No. 7699.2.002.02

Sims, J.D., Fox, K.F., Barstow, J.A., and Helley, E.J., 1973, Preliminary Geologic Map of Sonoma

County and Western Napa County, California, USGS

FIGURES



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0 FEET 2000

0 METERS 1000

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO Expect Excellence

VICINITY MAP

DUTTON MEADOWS

SANTA ROSA, CALIFORNIA

PROJECT NO.: 7699.200.303		FIGURE NO. 1
SCALE: AS SHOWN		
DRAWN BY: SRP	CHECKED BY: JAA	

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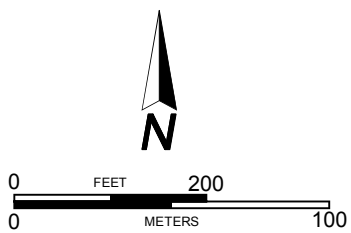

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO Expect Excellence

SITE PLAN
DUTTON MEADOWS
SANTA ROSA, CALIFORNIA

PROJECT NO.: 7699.200.303	FIGURE NO. 2
SCALE: AS SHOWN	
DRAWN BY: SRP	CHECKED BY: JAA

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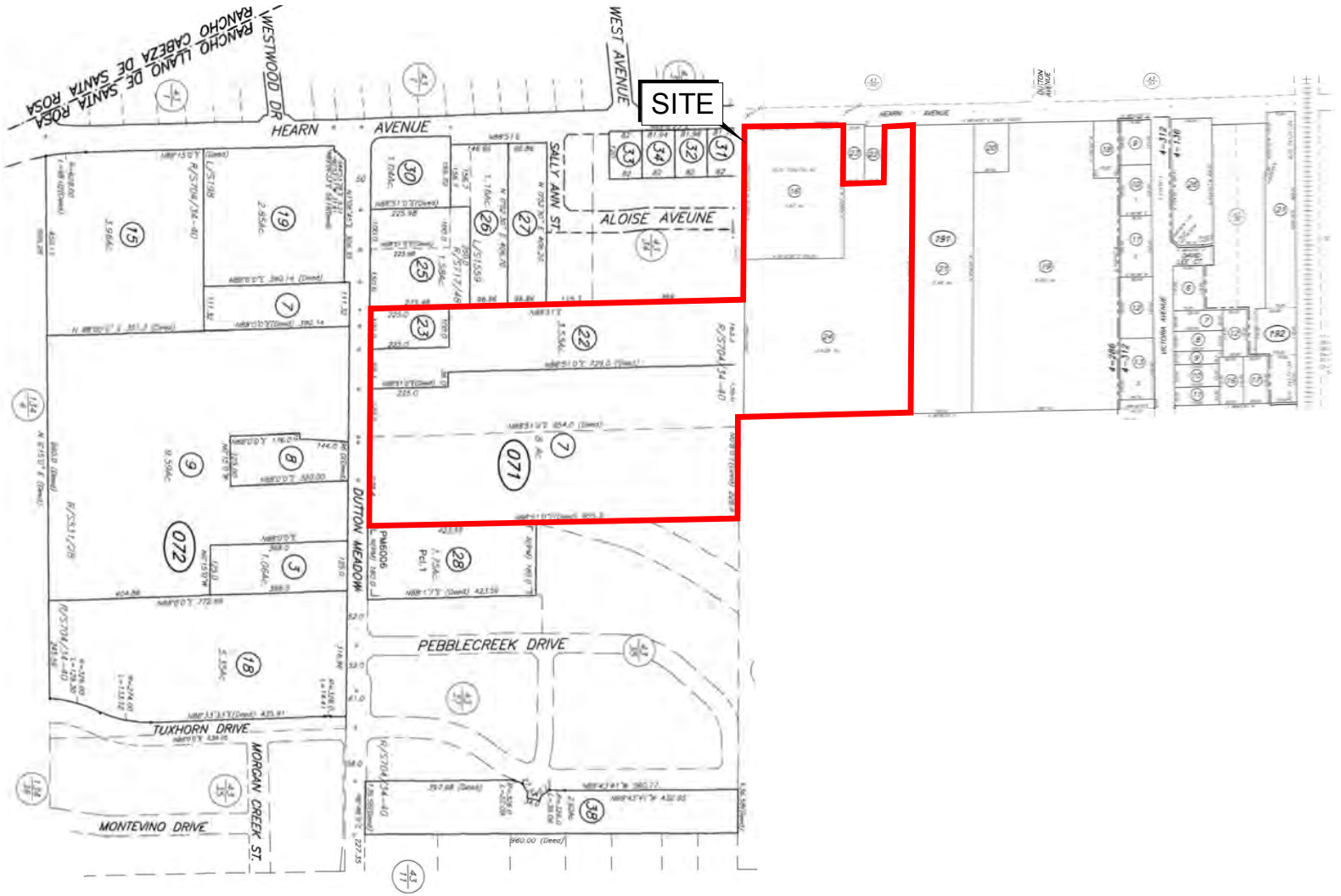

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BASE MAP SOURCE: SONOMA COUNTY

ENGEO Expect Excellence

ASSESSOR'S PARCEL MAP

DUTTON MEADOWS

SANTA ROSA, CALIFORNIA

PROJECT NO.: 7699.200.303		FIGURE NO. 3
SCALE: AS SHOWN		
DRAWN BY: SRP	CHECKED BY: JAA	

ORIGINAL FIGURE PRINTED IN COLOR

VIEW OF THE WESTERN PORTION OF THE PROPERTY

DEBRIS OBSERVED ON THE
WESTERN PORTION OF THE PROPERTY

CONCRETE SLAB AND ASSOCIATED BUILDING MATERIAL
OBSERVED ON THE WESTERN PORTION OF THE PROPERTY

STOCKPILES OBSERVED ON THE PROPERTY
AT THE TIME OF THE SITE RECONNAISSANCE

VIEW OF THE NORTHEASTERN PORTION OF THE PROPERTY

ENGEO Expect Excellence

SITE PHOTOGRAPHS
DUTTON MEADOWS
SANTA ROSA, CALIFORNIA

PROJECT NO.: 7699.200.303
SCALE: NO SCALE
DRAWN BY: SRP | CHECKED BY: JAA

FIGURE NO. 4A

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ORIGINAL FIGURE PRINTED IN COLOR

STRUCTURES OBSERVED ON THE NORTHEASTERN PORTION OF THE PROPERTY

STRUCTURE OBSERVED ON THE NORTHEASTERN PORTION OF THE PROPERTY

NORTHEASTERN PORTION OF THE PROPERTY

VIEW OF THE SOUTHEASTERN PORTION OF THE PROPERTY CAPTURED FROM THE PERIMETER

ENGEO Expect Excellence

SITE PHOTOGRAPHS

DUTTON MEADOWS

SANTA ROSA, CALIFORNIA

PROJECT NO.: 7699.200.303	FIGURE NO. 4B
SCALE: NO SCALE	
DRAWN BY: SRP	CHECKED BY: JAA

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Appendix G: 2018 Traffic Study

Traffic Impact Study for the Dutton Meadows Phase II Project

Prepared for the City of Santa Rosa

Submitted by
W-Trans

November 13, 2018

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
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Table of Contents

Executive Summary

The proposed Dutton Meadows Phase II project would include the construction of 130 single-family dwelling units, of which 81 would have accessory dwelling units on-site. The project site is in the primarily vacant 18.4-acre site located east of Dutton Meadow and south of Hearn Avenue. The project would generate an average of 1,801 net new daily trips; of which 132 would occur during the morning peak hour and 172 during the evening peak hour. The project differs from the project previously approved for the site which included 191 single family dwelling units. The anticipated peak hour trip generation for the project as currently proposed is lower than that of the approved project. The project would have access points at Dutton Meadows and Hearn Avenue via Aloise Avenue and the future planned extension of Dutton Avenue.

The project's proposed configuration for the future intersection of Dutton Meadow/Northpoint Parkway differs from the City's planned configuration wherein the Northpoint Parkway extension would be a northwest-southeast street. South of Meadowview Elementary, Dutton Meadow would curve towards the east, intersect with Northpoint Parkway, and traverse the project site. As proposed, Dutton Meadow would continue to be a north-south street with Northpoint Parkway intersecting across from the outbound driveway of Meadowview Elementary School. The "New Street" that would traverse the site would be accessed via a tee intersection approximately 450 feet east of the proposed Northpoint Parkway/Dutton Meadow intersection.

Under existing conditions, the study intersections operate at acceptable service levels. With the proposed project, including the proposed configuration of the Northpoint Parkway/Dutton Meadow intersection, the service levels would continue to be acceptable.

Under future conditions, the intersection of Dutton Meadows/Northpoint Parkway was reviewed with both the planned and proposed configuration. Under the future scenario, without and with the project, with the planned or proposed configuration of Northpoint Parkway, all study intersections would operate at acceptable service levels.

The planned Northpoint Parkway and Dutton Meadow intersection was intended to provide a northwest-southeast arterial where most streets in the area are north-south or east-west. As proposed, the intersection does not preclude this. The roadway would maintain the desired number of lanes on Northpoint Parkway. With signal timing that favors the Northpoint Parkway movements, the southbound left-turn and the westbound right-turn, it would result in the desired effect of keeping vehicles on the Parkway and not pushing them to Dutton Meadow. Similarly, the vehicles that were intended to travel on Dutton Meadow through the project site would continue to do so with the proposed configuration.

Sight lines along Northpoint Parkway from the "New Street" would be adequate for speeds of up to 40 mph.

Since the proposed configuration would result in a signalized intersection at the Meadowview Elementary outbound driveway, it is recommended that this approach be striped with a left-turn lane and a through/right-turn lane as part of the project.

Per the *Dutton Meadows Project Draft Subsequent Environmental Impact Report,* CH2M Hill, 2004, the need for connected sidewalks as well as bike lanes on Northpoint Parkway was identified. The proposed project would provide continuous pedestrian facilities on-site as well as bike lanes along Northpoint Parkway.

Introduction

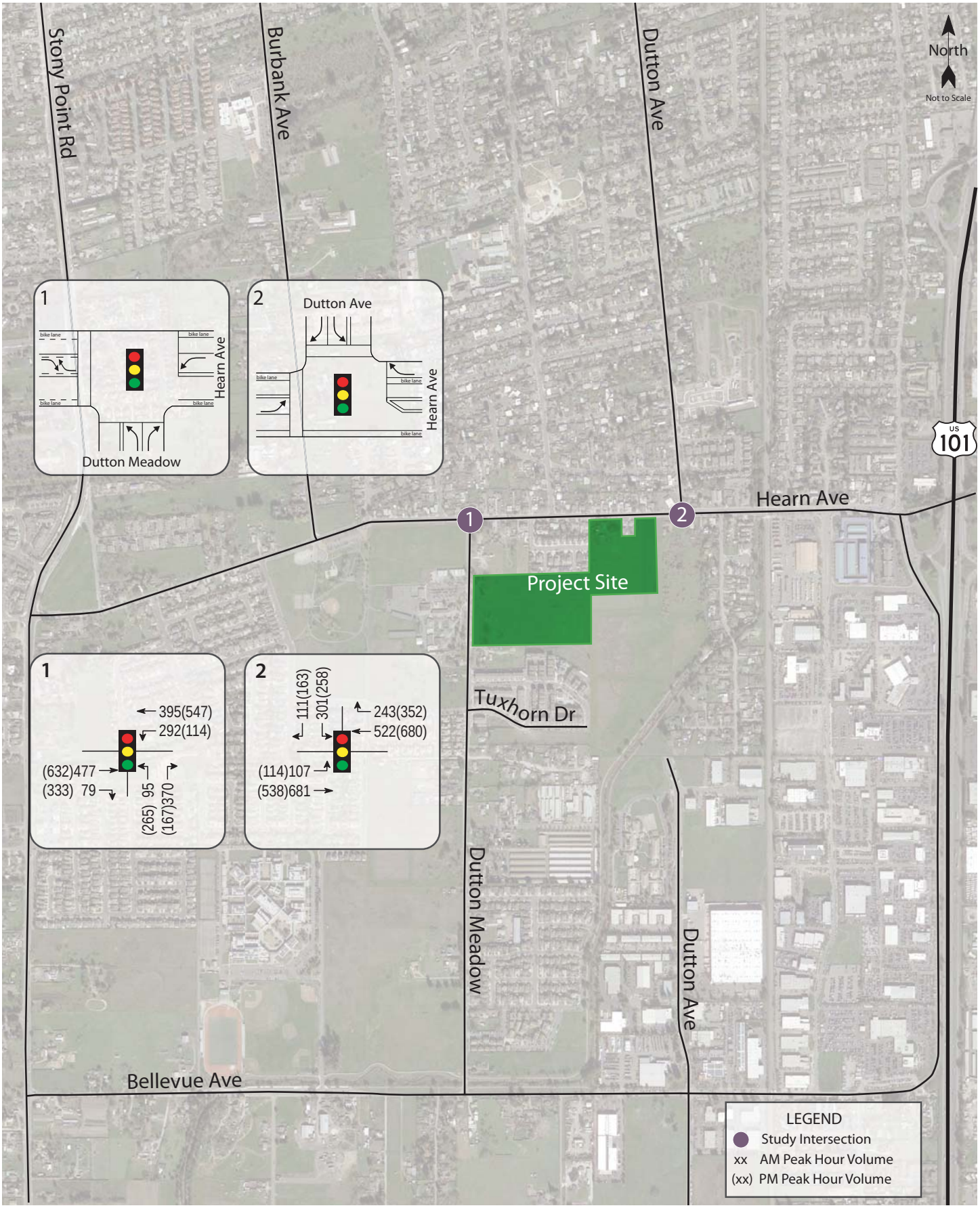
This report presents an analysis of the potential traffic impacts that would be associated with development of a proposed 211-unit residential development, including 130 single family dwellings and 81 accessory dwelling units, to be located east of Dutton Meadow and south of Hearn Avenue in the City of Santa Rosa. The project as proposed differs from what was approved by the City and incorporated in the General Plan in terms of the proposed geometry for the street system connecting through the site. This report provides the project's impact based on both the proposed circulation system as well as what was included in the City's plans. The traffic study was completed in accordance with the criteria established by the City of Santa Rosa and is consistent with standard traffic engineering techniques. The scope of work was reviewed and approved by City staff.

Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The project consists of 130 single-family houses; up to 81 could have accessory dwelling units on-site. Currently, there are two single-family houses on the proposed project site; most of the project site is open field. The Dutton Meadows Phase II project previously approved by the City for this site included 191 single family dwelling units and this land use is reflected in the General Plan. The project site is located east of Dutton Meadow and south of Hearn Avenue, as shown in Figure 1.



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Traffic Impact Study for the Dutton Meadows Phase II Project

Figure 1 – Study Area, Existing Lane Configurations and Existing Traffic Volumes

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the following intersections:

1. Hearn Avenue/Dutton Meadow
2. Hearn Avenue/Dutton Avenue
3. Northpoint Parkway/Dutton Meadow (new intersection created by project)
4. Northpoint Parkway/"New Street" (new intersection created by the project with proposed improvements)

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

Hearn Avenue/Dutton Meadow is a three-legged signalized intersection with two lanes on the northbound and westbound approaches, and one lane on the eastbound approach. The westbound left-turn has protected phasing, along with overlap phasing for the northbound right-turn movement. The west leg has a crosswalk and curb ramps. Hearn Avenue has bike lanes in both directions.

Hearn Avenue/Dutton Avenue is a four-legged signalized intersection with two lanes on all approaches except the northbound approach. This northbound approach is a placeholder for a future road connection, with some facilities already in place; however, the intersection essentially operates as a three-legged intersection without the south leg. There are right-turn overlap phases for the westbound and southbound approaches which operate concurrently with the southbound and eastbound left-turns, respectively. The west and north legs have crosswalks and curb ramps, and Hearn Avenue has bike lanes.

Northpoint Parkway/Dutton Meadow is a planned intersection that would be constructed as part of the proposed project. According to the City of Santa Rosa General Plan and the *Roseland Area/Sebastopol Road Specific Plan*, City of Santa Rosa, 2016, the intersection would be a four-legged intersection with Northpoint Parkway in the northwest-southeast direction and Dutton Meadow as the minor cross-street. Per the General Plan, Northpoint Parkway would be a four-lane arterial, though the *Roseland Area/Sebastopol Road Specific Plan* indicates that one lane in each direction with a two-way left-turn lane or median would be adequate given the decrease in anticipated demand. The intersection would be signalized. As proposed by the project, the signalized intersection would also be a four-legged signalized intersection; however, it would maintain Dutton Meadow as the north-south street with the west leg as the existing outbound driveway for the Meadow View Elementary School, and the east leg as the new section of Northpoint Parkway.

Northpoint Parkway/"New Street" is a proposed tee-intersection that would be constructed as part of the proposed project. The intersection would be stop controlled on the north "New Street" leg and Northpoint Parkway would be free.

The locations of the existing study intersections and the existing lane configurations and controls are shown in Figure 1.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The study intersections are all currently controlled by a traffic signal, or are expected to be in the future, and were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, the signal timing for the existing intersections, under the existing and future scenarios, provided by the City for the *Roseland Area/Sebastopol Road Specific Plan*, were applied for the analysis.

The ranges of delay associated with the various levels of service are indicated in Table 1.

Table 1 – Intersection Level of Service Criteria

LOS	Two-Way Stop-Controlled	Signalized
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Traffic Operation Standards

The City of Santa Rosa's adopted Level of Service (LOS) Standard is contained in *Santa Rosa General Plan 2035*. Standard TD-1 states that the City will try to maintain a Level of Service (LOS) D or better along all major corridors. Exceptions to meeting this standard are allowed where attainment would result in significant environmental degradation; where topography or environmental impacts make the improvement impossible; or where attainment would ensure loss of an area's unique character.

While a corridor level of service is applied by the City in its analysis of the entire City as part of the environmental documentation supporting the General Plan, this type of analysis only provides relevant data when performed on a much longer segment than the one included as the study area for the project. Therefore, although the City's standard does not specify criteria for intersections, for the purposes of this study, as is standard practice for such studies, a minimum operation of LOS D for the overall operation of signalized intersections was applied.

It was further assumed that where operation without the project is at LOS E or F, the project's impact would be considered significant if a) the project caused deterioration from LOS E to LOS F or b) the project caused average delay for the intersection to increase by five seconds or more.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected April 17, 2018 when while local schools, specifically Meadow View Elementary School, were in session.

Intersection Levels of Service

Under these conditions, the two existing study intersections are operating acceptably at LOS C or better during both peak hours. Since the intersection of Northpoint Parkway/Dutton Meadow would either be completed under the future scenario or with the project, no service level was determined for this location under existing conditions. The existing traffic volumes are shown in Figure 1. A summary of the intersection level of service calculations is contained in Table 2, and copies of the Level of Service calculations are provided in Appendix A.

Table 2 – Existing Peak Hour Intersection Levels of Service

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Hearn Ave/Dutton Meadow	12.3	B	33.6	C
2. Hearn Ave/Dutton Ave	21.4	C	19.3	B
3. Northpoint Pkwy/Dutton Meadow	-	-	-	-

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Future Conditions

Future Volumes

Future peak hour volume projections were taken from a build out analysis which is contained in the *Roseland Area/Sebastopol Road Specific Plan*, City of Santa Rosa, 2016; this scenario represents cumulative traffic conditions that would be expected upon build out of the land uses identified in the City's General Plan.

It should be noted that some of the projected future volumes from the *Roseland Area/Sebastopol Road Specific Plan* are less than existing volumes. This can be attributed to the planned improvements in the area that would result in changes to the circulation system. However, to be consistent with the Specific Plan, the volumes from the Plan were applied. Further, though development of the project site was assumed and trips included in the SCTA model volumes applied in the Specific Plan analysis, these trips were not subtracted out of the future volumes for the "without project" scenario, resulting in a more conservative analysis.

Future Infrastructure

As mentioned, there are network improvements within the study area that were applied to the analysis based on the *Roseland Area/Sebastopol Road Specific Plan*. Improvements include extending the Dutton Avenue from its current terminus near Duke Court to a planned roundabout where drivers would turn right to continue to the existing Dutton Avenue/Hearn Avenue intersection resulting in the planned four-legged intersection. Other improvements at that intersection would be a new westbound left turn lane, a new eastbound through lane, and reassigning the southbound right-turn lane into a southbound through/right-turn lane.

As planned, Northpoint Parkway would begin where Dutton Avenue turns right at the roundabout, continuing north to intersect with Hearn Avenue, replacing part of Dutton Meadow, which would curve northeast beginning near Meadowview Elementary School, extend through the project site, and end at the Dutton Avenue extension south of Hearn Avenue. Per the Specific Plan, the roadway would have three lanes, with one lane in each direction and either a two-way left-turn lane or median. The plan notes that the City's General Plan indicates that Northpoint Parkway would be a four-lane street but based on the planned decrease in demand, three lanes would be sufficient.

Additionally, the Plan suggests adding an eastbound right-turn pocket at Hearn Avenue and Northpoint Parkway, previously Dutton Meadow. The planned circulation and intersection configurations are shown in Figure 2.

Under the anticipated Future volumes, with the planned improvements, the study intersections are expected to operate acceptably at LOS D or better. At the Hearn Avenue/Dutton Meadow intersection, with the addition of the eastbound right-turn lane, the delay is expected to significantly decrease during the p.m. peak hour. Future volumes, planned intersection geometries, and the planned circulation network are shown in Figure 2; operating conditions are summarized in Table 3.

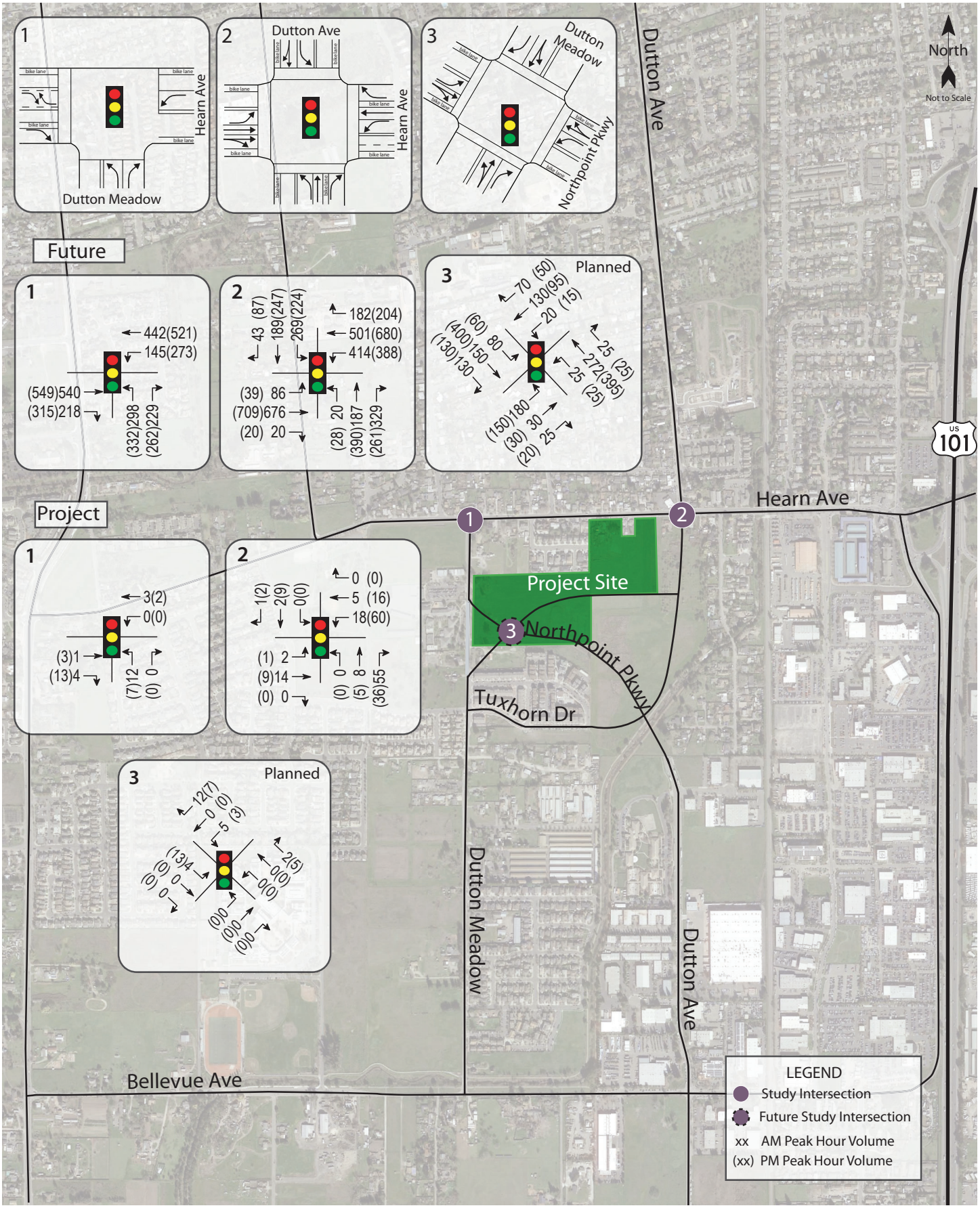
Table 3 – Planned Future Peak Hour Intersection Levels of Service

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Hearn Ave/Dutton Meadow	11.3	B	14.4	B
2. Hearn Ave/Dutton Ave	47.1	D	46.6	D
Planned				
3. Northpoint Pkwy/Dutton Meadow	16.7	B	17.3	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Project Description

The project consists of 130 single-family houses; up to 81 could have accessory dwellings on-site. The 18.4-acre project site is located along the east side of Dutton Meadow and south side of Hearn Avenue. There would be several access points to the site. Under the existing conditions, access to the site would be from a newly constructed intersection on Dutton Meadow and connection to Hearn Avenue via Aloise Avenue. Under the future scenario, with further circulation improvements to be constructed with development of other parcels in the



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Traffic Impact Study for the Dutton Meadows Phase II Project

Figure 2 – Future Lane Configurations, Traffic Volumes and Project Volumes

W-Trans

area, there would be an additional connection to the Dutton Avenue extension east of the project site. With the proposed project, two single-family dwellings would be eliminated, though most of the land is open field.

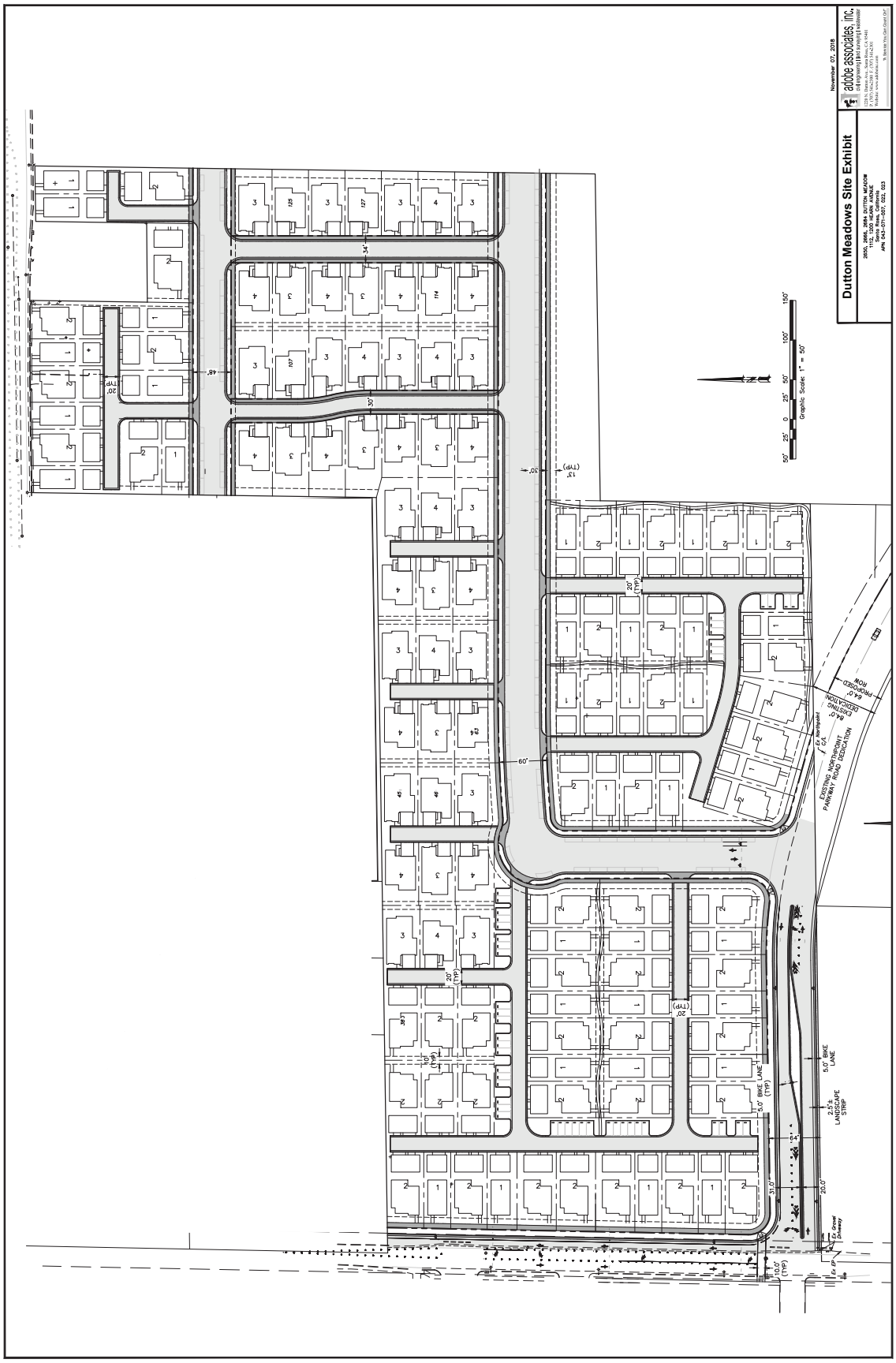
The project, as previously approved and incorporated in the General Plan, included a total of 191 single-family dwellings.

Proposed Roadway Geometry

The proposed project differs from the future planned improvements in the study area in terms of the future intersection of Northpoint Parkway/Dutton Meadow and the circulation within the project site. As proposed, Dutton Meadow would remain a north-south street and Northpoint Parkway would form the east leg where it intersects Dutton Meadow at the exiting Meadowview Elementary School outbound driveway, resulting in a four-legged intersection. The planned street, "New Street", that would traverse the project site, terminating at the Dutton Avenue extension, would still do so but access to the street would be via a tee intersection about 450 feet east of the proposed Dutton Meadow/Northpoint Parkway intersection, as opposed to one of the legs at the planned intersection as shown under the Future Conditions scenario. The proposed project site plan is shown in Figure 3 and the existing study area with the proposed project is shown in Figure 4.

Trip Generation

The anticipated trip generations for the proposed project as well as the approved uses were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for single-family detached housing (Land Use #210), and for apartments (Land Use #220) for the auxiliary dwelling units. As shown in Table 4, the proposed project is expected to generate an average of 1,820 trips per day, including 133 trips during the a.m. peak hour and 174 during the p.m. peak hour. After applying deductions for the two existing single-family homes that will be eliminated, the project would be expected to generate 1,801 new trips daily, including 132 during the morning peak hour and 172 during the evening peak hour; these new trips represent the increase in traffic associated with the project compared to existing volumes. The project as approved and incorporated in the General Plan, for a comparison, is summarized in the table as well. As shown, the proposed project will generate fewer trips than would have been anticipated for the approved land use for the site.



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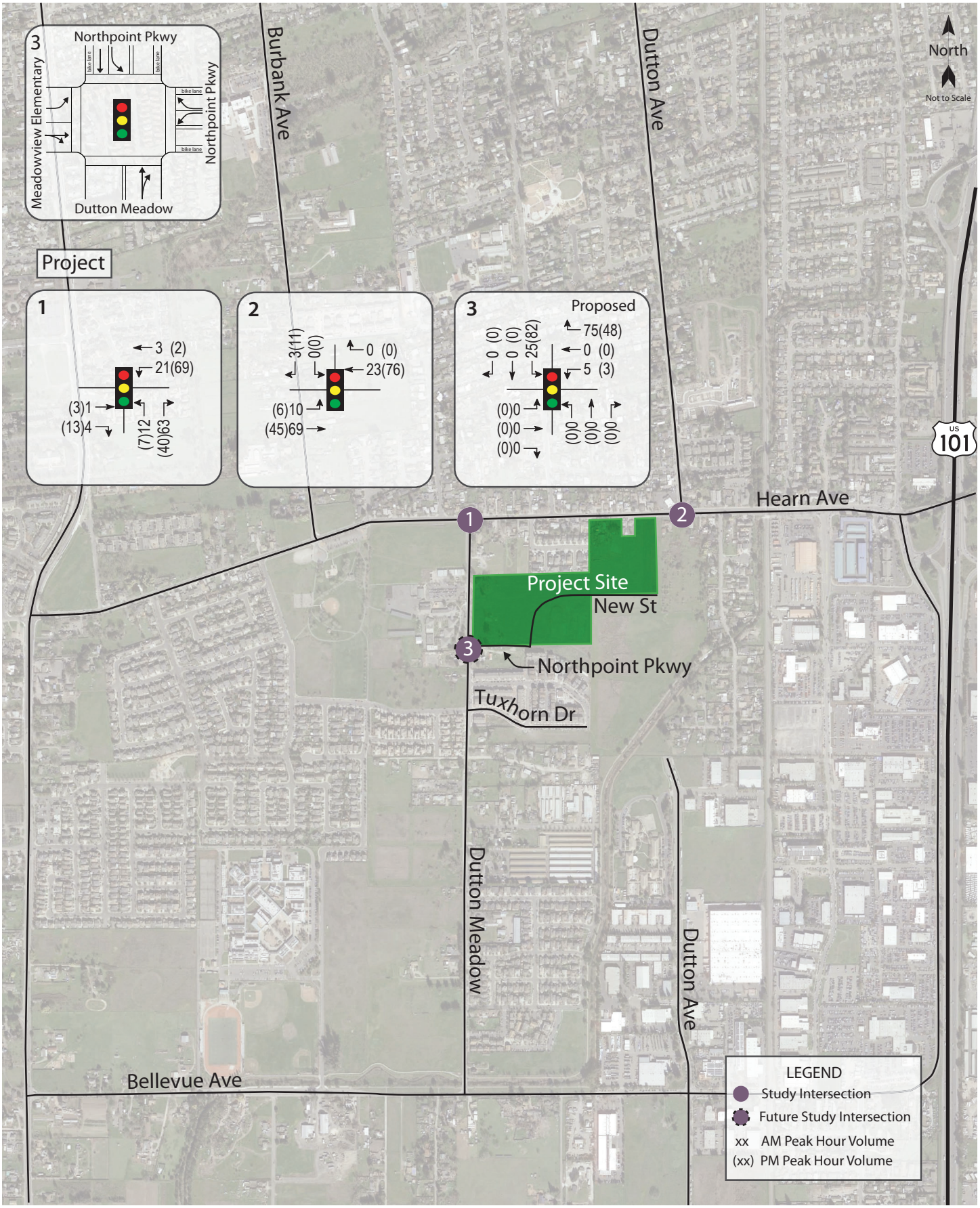
Traffic Impact Study for the Dutton Meadows Phase II Project

Figure 3 – Site Plan



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Traffic Impact Study for the Dutton Meadows Phase II Project

Figure 4 – Existing Study Area with Project, Proposed Lane Configuration and Project Volumes

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Table 4 – Trip Generation Summary											
Land Use	**Units**	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
		Rate	**Trips**	**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
Existing											
Single-Family Homes	-2 du	9.44	-19	0.74	-1	0	-1	0.99	-2	-1	-1
Proposed											
Single-Family Homes	130 du	9.44	1,227	0.74	96	24	72	0.99	129	81	48
Apartment (ADU)	81 du	7.32	593	0.46	37	9	28	0.56	45	29	16
Total			**1,820**		**133**	**33**	**100**		**174**	**110**	**64**
Net Increase (Proposed-Existing)			***1,801***		***132***	***33***	***99***		***172***	***109***	***63***
Approved											
Single-Family Homes	*191 du*	*9.44*	*1,803*	*0.74*	*141*	*35*	*106*	*0.99*	*189*	*119*	*70*
***Net Difference** (Approved – Total)*			***-17***		***8***	***2***	***6***		***15***	***9***	***6***

Note: du = dwelling unit

Trip Distribution

Existing Conditions

The pattern used to allocate new project trips to the street network under existing conditions was determined by assessing employment patterns for residents in the southwest quadrant of Santa Rosa as indicated by the U.S. Census Bureau using data from 2015. The applied assumptions are shown in Table 5.

Table 5 – Existing with Project Trip Distribution Assumptions	
Route	**Percent**
To/From Hearn Ave east of Dutton Ave via Dutton Meadow	55
To/From Hearn Ave east of Dutton Ave via Aloise Ave	15
To/From Hearn Ave west of Dutton Meadow via Dutton Meadow	12
To/From Hearn Ave west of Dutton Meadow via Aloise Ave	3
To/From Dutton Ave north of Hearn Ave via Dutton Meadow	8
To/From Dutton Ave north of Hearn Ave via Aloise Ave	2
To/From Dutton Meadow south of Hearn Ave	5
TOTAL	**100**

Future Conditions

Planned improvements including the Northpoint Parkway connection as well as the Dutton Avenue Extension were taken into consideration to determine the distribution and routing of new project trips to the planned and proposed street network under future conditions. The distribution assumptions used for evaluating future conditions are shown in Table 6.

Table 6 – Future Trip Distribution Assumptions	
Route	**Percent**
To/From Hearn Ave east of Dutton Ave via Dutton Ave Extension	55
To/From Hearn Ave east of Dutton Ave via Aloise Ave	15
To/From Hearn Ave west of Dutton Meadow via Northpoint Pkwy	12
To/From Hearn Ave west of Dutton Meadow via Aloise Ave	3
To/From Dutton Ave north of Hearn Ave via Dutton Ave Extension	8
To/From Dutton Ave north of Hearn Ave via Aloise Ave	2
To/From Dutton Ave south of Hearn Ave via Northpoint Pkwy	5
TOTAL	**100**

Intersection Operation

Existing plus Project Conditions

Upon adding project trips to existing volumes, with the proposed configuration of the new intersection of Northpoint Parkway/Dutton Meadow and Northpoint Parkway/"New Street", the study intersections are expected to continue operating acceptably. Under the existing conditions the intersection of Northpoint Parkway/"New Street" would be constructed with the project but no other planned improvements would be completed, so the intersection would be a partial intersection with only eastbound left-turn and southbound right-turn maneuvers. As such, delay at this location could not be estimated as both those maneuvers would be "free movements" with essentially no delay. These results are summarized in Table 7. Project traffic volumes, along with the roadway network used for the Existing plus Project analysis, are shown in Figure 4.

Table 7 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Hearn Ave/Dutton Meadow	12.3	B	33.6	C	13.2	B	49.9	D
2. Hearn Ave/Dutton Ave	21.4	C	19.3	B	19.6	B	19.6	B
Proposed								
3. Northpoint Pkwy/Dutton Meadow	-	-	-	-	11.1	B	7.9	A
4. Northpoint Pkwy/"New Street"	-	-	-	-	-	-	-	-

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

With the addition of project-related traffic volumes, average delay at the intersection of Hearn Avenue/Dutton Avenue is projected to decrease during the a.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The project adds traffic predominantly to the eastbound and westbound through movements, which have average delays lower than the average for the intersection, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions because of the project.

Finding – The study intersections are expected to continue operating acceptably at the same or better service levels with project traffic added to existing volumes.

Future plus Project Conditions

Operation under Future plus Project volumes was reviewed with both the planned and proposed configuration for the future study intersection of Northpoint Parkway/Dutton Meadow. The volumes for the proposed configuration were based on the same projected movements for the planned configuration, with several movements combined to reflect the change in configuration with the configuration proposed with the project. The future traffic volumes are shown in Figure 2 and the future traffic volumes with the proposed configuration are shown are in Figure 5.

Upon the addition of project-generated traffic to the anticipated Future volumes, and with either the planned or proposed intersection configuration, the study intersections are expected to operate acceptably. The Future plus Project operating conditions are summarized in Table 8.

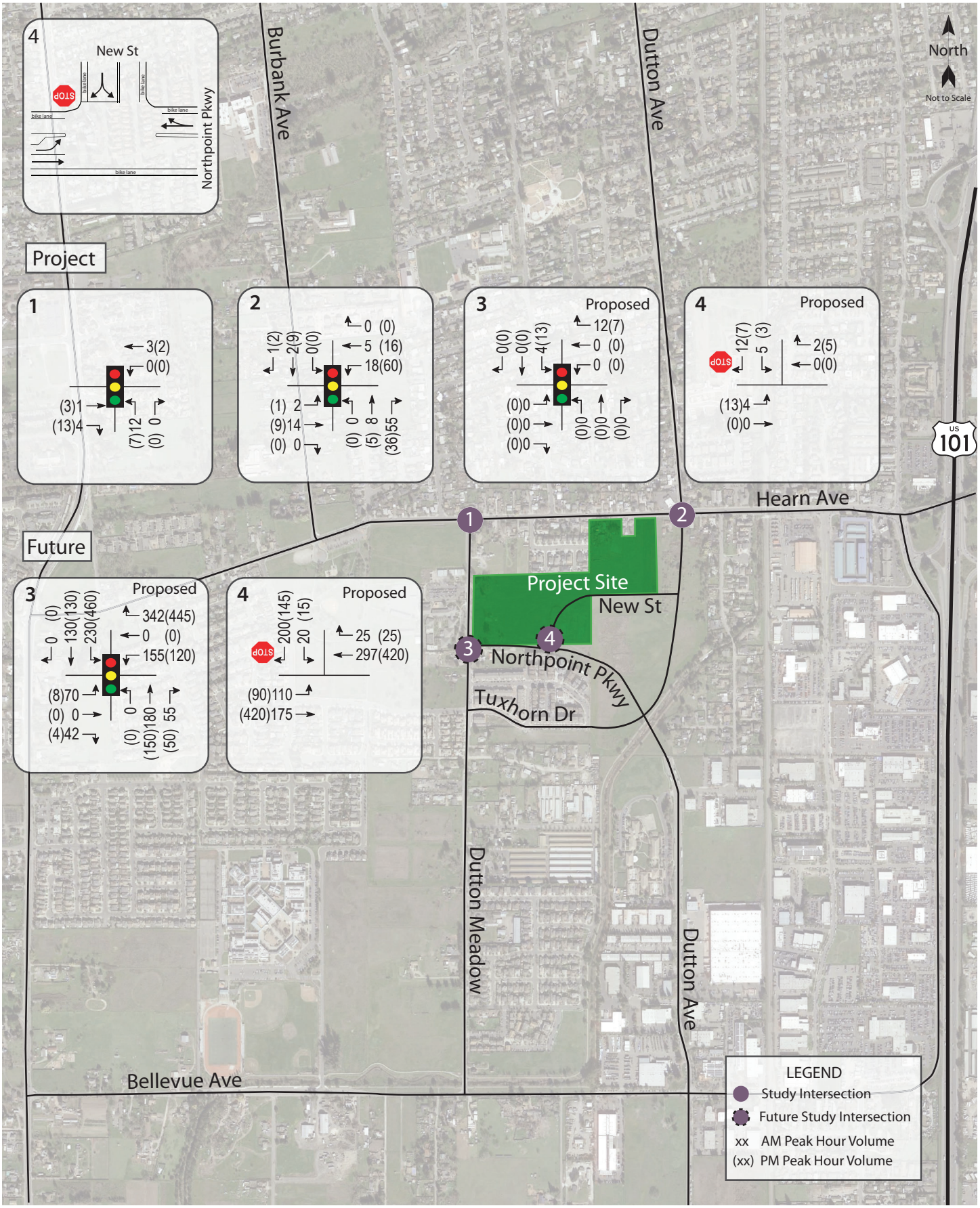
Table 8 – Planned Future and Future plus Project Peak Hour Intersection Levels of Service

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. Hearn Ave/Dutton Meadow	11.3	B	14.4	B	11.6	B	14.8	B
2. Hearn Ave/Dutton Ave	47.1	D	46.6	D	49.5	D	51.3	D
Planned								
3. Northpoint Pkwy/Dutton Meadow	16.7	B	17.3	B	16.9	B	16.2	B
Proposed								
3. Northpoint Pkwy/Dutton Meadow-School DW	16.9	B	12.4	B	17.1	B	12.5	B
4. Northpoint Pkwy/"New Street"	4.7	A	2.9	A	5.1	A	3.2	A
Southbound "New Street"	*13.5*	*B*	*15.2*	*C*	*14.2*	*B*	*16.1*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

It should be noted that under the Future and Future plus Project scenarios the delay at the intersection of Hearn Avenue/Dutton Meadow is less than under existing conditions. This can be attributed to the planned future improvements at the intersection including the addition of an eastbound right-turn pocket. With the change in roadway geometry in addition to the projected growth, it would be reasonable to assume the signal timing would be updated and as such, result in reduced delays.

Finding – The study intersections will continue operating acceptably with project traffic added to future volumes. The intersection of Northpoint Parkway/Dutton Meadow, with either the planned or proposed configuration, would be expected to operate at an acceptable service level.



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Traffic Impact Study for the Dutton Meadows Phase II Project

Figure 5 – Future Study Area with Project, Traffic Volumes and Project Traffic Volumes

Access and Circulation

Planned Improvements Compared to Proposed

As discussed, the proposed project does not conform to the planned roadway configurations for Northpoint Parkway and the minor street through the site. While it is noted that the proposed circulation system may require changes to the General Plan, it is understood that the project applicant acknowledges this and would request such changes to proceed with the project as proposed. The planned roadway alignment would bisect the site in such a way as to create a large, triangular-shaped parcel that would accommodate fewer units, making it infeasible to achieve the density desired by the City. With the planned configuration, the future roadway would instead be located along the southern perimeter of the site, allowing a more standard lot pattern.

As planned, Northpoint Parkway would be a regional arterial street and would act as an alternate route for traffic in the Southwest quadrant of Santa Rosa. Where the existing surrounding street network is predominantly north-south and east-west streets, Northpoint Parkway would be a northwest-southeast street. In general, the proposed configuration of the study intersection does not preclude this. The proposed roadway would maintain the three lanes on Northpoint Parkway, one in each direction with either a median or two-way left-turn lane. While the planned configuration could result in traffic traveling straight through the intersection on the parkway, the planned configuration would require a southbound left-turn or westbound right-turn to continue along this route. As analyzed, the intersection timing used prioritized these movements. The westbound right-turn and southbound left-turn would operate concurrently with a programmed overlap phase. It was also assumed that these movements would be on recall so that absent a call on any other approach or movement, the southbound left-turn and westbound right-turn would rest in green. This type of timing would result in the desired effect of maintaining the flow of traffic on Northpoint Parkway and not pushing traffic to Dutton Meadow. As noted in the operational analysis, the difference in delay between the two alignments would be minimal.

Given that there are no plans to widen Hearn Avenue between the Dutton Meadow and Dutton Avenue intersections due to the right-of-way constraints, any increase in volumes may cause that segment of Hearn Avenue to become oversaturated. It should be noted that in the analysis with the proposed configuration, the only volumes routed northbound through the intersection of Northpoint Parkway/Dutton Meadow were those movements that were previously projected to route through that intersection to the Hearn Avenue/Dutton Meadow-Northpoint Parkway intersection to the north. With the potential for that section of Hearn Avenue to become oversaturated, drivers naturally find other routes through a street network. Therefore, even with the proposed configuration which includes the "New Street," drivers may naturally reroute to that street if they experience delays on Hearn Avenue.

Alternative Modes

The potential impacts to pedestrians and bicyclists were also reviewed in the context of the proposed and planned intersection configurations.

Pedestrians

The planned configuration of Northpoint Parkway/Dutton Meadow would include pedestrian crossings on each leg of the intersection as well as a path from the school's frontage to the intersection. With the configuration as proposed with the project there would be crosswalks on the north and west legs. Since the property southeast of the intersection is not part of the project and is privately owned with no known plans to develop, there would be no need for a crosswalk on the south or east legs of the intersection. Under both configurations, most of the crossings would be east-west on Northpoint Parkway. While it is noted that the signal timing for the proposed

intersection configuration would favor vehicles on Northpoint Parkway, the delay for vehicles associated with pedestrians crossing the intersection would occur with either configuration.

A roundabout was considered instead of the proposed intersection configuration to improve pedestrian access; however, considering the right-of-way limitations to the southeast on the undeveloped parcel as well as to the west with the school's property, a roundabout would not be feasible. With an outside diameter of about 130 feet, solely on the proposed project's property, along with the amount of land that would need to be dedicated to properly position the entrance lanes, the roundabout was not further reviewed though preliminary service level calculations indicated that it would operate acceptably.

Bicyclists

As currently proposed, Northpoint Parkway and Dutton Meadows would both have bike lanes. Additionally, bike lanes would be included on the "New Street" created by the subdivision. With the planned configuration a northbound bicyclist would travel through the intersection, while with the proposed signalized intersection configuration, a northbound cyclist would turn right from Dutton Meadow to Northpoint Parkway and left from at the Northpoint Parkway to the "New Street". While the maneuver required under the proposed configuration is not ideal, a striping plan has been developed that would improve access for cyclists. As shown in the site plan, "sharrows" are recommended where the bicyclist would need to leave their dedicated bike lane and enter the flow of motor vehicle traffic. It is, however, noted that the connectivity as proposed is consistent with that shown between Dutton Meadow and the extension of Dutton Avenue in the *Santa Rosa Bicycle and Pedestrian Master Plan 2010*.

Sight Distance

At unsignalized intersections a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time should be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distance was considered for both a southbound vehicle on the "New Street" as well as the sight distance for an eastbound left-turning vehicle. Sight distance was evaluated based on the criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at intersections of public streets is based on corner sight distances which uses the approach travel speeds as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

Sight distance for a southbound vehicle on the "New Street" as well as an eastbound left-turn on Northpoint Parkway were reviewed based on the plans. As measured, there would be a clear line of sight from the "New Street" for more than 450 feet to the west of the "New Street" and about 500 feet to the east. For eastbound left-turning vehicles, there would be an expected clear line of site for more than 500 feet. Based on these values, there is a clear line for a posted speed of at most 40 mph.

However, since there is a median planned for Northpoint Parkway, as well as a public space between the roadway and the sidewalk, it is recommended that any landscaping in these areas be low-lying vegetation no more than three feet above the elevation of the roadway, and any tree canopies be trimmed and maintained to be no less than seven feet above the roadway elevation.

Sight Distance exhibits are included in Appendix B.

Proposed School Frontage Improvements on Northpoint Parkway

The queues with the proposed intersection configuration were reviewed to determine any potential impacts to Meadowview Elementary School's access points. Of the three driveways, the school's two southerly driveways operate as a one-way loop with the northerly of the two for inbound vehicles and the southernmost for outbound traffic. This drop-off loop is intended for school buses only, daily from 7:00 a.m. to 3:00 p.m., as indicated by the sign posted at the inbound driveway. Additionally, it was observed that cones were placed at the entrance driveway to deter other vehicles from entering. The northern most driveway provides full access to the parking lot as well as an additional drop-off area.

Queues in the southbound left-turn pocket on Northpoint Parkway at Dutton Meadow were reviewed under the Future plus Project volumes during the a.m. and p.m. peak hours. During the critical a.m. peak hour, which is concurrent with the drop-off period at school, the queue length is expected to be 155 feet, requiring a turn pocket of at least 175 feet in length. At the northernmost driveway, a 50-foot left-turn lane is proposed. Given the distance between the proposed intersection and the northern most full access driveway, there would be sufficient length to accommodate the projected queues as well as the necessary transition lengths between the storage lanes. During the p.m. peak hour under Future plus Project volumes the expected southbound left-turn queue would be 159 feet, which would be accommodated within the 175-foot available storage. It should be noted that while the expected southbound left-turn queue would extend past the inbound loop, the loop is intended for buses only and though it may change, the current bus route results in all buses coming from the north and turning right into the driveway. Any future bus routes could be routed to result in a right-turn into the driveway.

The queuing results as well as the proposed frontage improvements detailed above are included in Appendix C.

Meadowview Elementary School

It is noted that the proposed intersection configuration would retain vehicular traffic fronting the school while the planned configuration would not. Though this is not necessarily desirable, it can be beneficial to the circulation. While the circulation within the school could change, and the existing driveway may not always be exclusively outbound, it is beneficial having a signalized driveway for the exiting traffic to regulate the high volumes that can be expected during the morning and afternoon dismissal periods. As part of the project, with the proposed configuration, it is recommended that the school's driveway approach to the new signalized intersection be striped for with a left-turn lane and a through/right-turn lane.

Also, it is reasonable to assume that some residents of the proposed project would have children that attend the Meadowview Elementary school and would want to walk to the school. Crosswalks with pedestrian crossing time were assumed for each approach and would provide adequate access to the school site.

Identified Mitigation

Based on the *Dutton Meadows Project Draft Subsequent Environmental Impact Report,* CH2M Hill, 2004, the need for a connected sidewalk system and implementation of planned bicycle facilities were identified. The proposed project would provide continuous pedestrian facilities in the site as well as bike lanes along Northpoint Parkway.

Conclusions and Recommendations

Conclusions

- The project is expected to generate 1,801 net new trips daily, including 132 during the morning peak hour and 172 during the evening peak hour. The peak trip generation for the proposed project would be less than that associated with what was previously approved for the site.
- The study intersections are expected to operate acceptably under both Existing and Existing plus Project conditions, with the proposed configuration at Dutton Meadow/Northpoint Parkway.
- Under the future scenario, without and with the project, the intersections are expected to operate acceptably. At the intersection of Dutton Meadow/Northpoint Parkway, with either the proposed or the planned configuration, the intersection is expected to operate at LOS B or better with little difference in delay between the two.
- The proposed project would provide continuous pedestrian facilities as well as bike lanes along Northpoint Parkway and "sharrows" in the left-turn lanes to indicate to drivers that cyclists would be sharing the lanes with them.
- There would be sufficient line of sight for vehicles at the Northpoint Parkway/"New Street" intersection for speeds up to 40 mph.

Recommendations

- If the proposed configuration for Dutton Meadow/Northpoint Parkway is accepted by the City, the school's driveway at the new signal should be striped to include a left-turn lane and through/right-turn lane.
- Any landscaping in the median on Northpoint Parkway or in the public space between the sidewalk and the roadway, should be low lying vegetation and maintained to be no more than three feet above the elevation of the roadway. Any trees should have their canopies trimmed to be no less than seven feet above the elevation of the roadway.

Study Participants and References

Study Participants

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Report Review	Dalene J. Whitlock, PE, PTOE

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