INITIAL STUDY

WEST DUNNE AVENUE - GERA
MORGAN HILL, CALIFORNIA

Zoning Amendment ZA- 13-07
Subdivision SD- 13-08
Development Agreement DA- 13-05

PREPARED FOR
CITY OF MORGAN HILL
DEVELOPMENT SERVICES CENTER DEPARTMENT
17575 PEAK AVENUE
MORGAN HILL, CA 95037

JANUARY 2016

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TABLE OF CONTENTS

PROJECT INFORMATION 1
PROJECT DESCRIPTION 1
ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 14
DETERMINATION 15
EVALUATION OF ENVIRONMENTAL IMPACTS
1. Aesthetics 16
2. Agriculture and Forestry Resources 20
3. Air Quality 21
4. Biological Resources 29
5. Cultural Resources 40
6. Geology and Soils 44
7. Greenhouse Gases 48
8. Hazards and Hazardous Materials 51
9. Hydrology and Water Quality 57
10. Land Use and Planning 66
11. Mineral Resources 70
12. Noise 70
13. Population and Housing 76
14. Public Services 77
15. Recreation 78
16. Transportation/Traffic 79
17. Utilities and Service Systems 81
18. Mandatory Findings of Significance 83

ATTACHMENTS
1. Air Quality CalEE Mod Outputs and Health Risk Analysis SCREEN3 Model Output
2. Biological Resource Assessment
3. Tree/Site Report
4. Flood Study
5. Noise Assessment Study

LIST OF FIGURES

1. Project Location 2
2. General Plan Land Use Designation 4
3. Zoning for Project Site and Vicinity 5
4. Aerial View of Project Site 6
5. Site Development Plan 7
6. Tentative Map 8
7. Residence Elevations, Plan 1a 9
8. Residence Elevations, Plan 1b 10
9. Residence Elevations, Plan 3a 11
10. Residence Elevations, Plan 3b 12
11. Residence Elevations, Plan 3c 13
12. Views of the Project Site from West Dunne Avenue 17
13. Views of the Adjoining Properties 18
14. Potential Jurisdictional Surface Channel 33
15. Views of Site Creek Channel 34
16. Preliminary Grading Plan for Proposed Project 47
17. Project Site FEMA Flood Zone 59
18. Flood Hazard Zone on Site 64

LIST OF TABLES

1. Project-Related Construction and Operational Criteria Pollutant Emissions 24
2. Cancer Risk and Chronic Non-Cancer Health Risks at the Closest Sensitive Receptors due to DPM Exposure during Project Construction 26
3. Cumulative Risk and Hazard Impacts at MEI from Existing Permitted Stationary Sources 27
4. Cumulative Risk and Hazard Impacts from Existing Mobile Sources 27
5. Cumulative Risk and Hazard Impacts 28
6. Project-Related Operational GHG Emissions 50

CITY OF MORGAN HILL
DEVELOPMENT SERVICES CENTER DEPARTMENT
ENVIRONMENTAL CHECKLIST FORM

PROJECT INFORMATION

PROJECT TITLE:
West Dunne Avenue-Gera
Zoning Amendment ZA- 13-07
Subdivision SD- 13-08
Development Agreement DA- 13-05

PROJECT LOCATION:
West of West Dunne Avenue and Monterey Road

LEAD AGENCY NAME AND ADDRESS:
City of Morgan Hill
Development Services Center Department
17575 Peak Avenue
Morgan Hill, CA 95037

CONTACT PERSON AND PHONE NUMBER:
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(email: Terry.Linder@morganhill.ca.gov)

PROPERTY OWNER:
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Reliance Development, LLC
517 W. Iowa Avenue
Sunnyvale, CA 94086

PROJECT APPLICANT:
Michael Soares
Reliance Development, LLC
517 W. Iowa Avenue
Sunnyvale, CA 94086

GENERAL PLAN DESIGNATION:
Multi-Family Low Density use of 5 to 14 dwelling units per acre

ZONING:
D-R3, Downtown – Medium Density Residential District

PROJECT DESCRIPTION

Existing Setting. The 1.41-acre project site is located immediately west of the intersection of West Dunne Avenue and Monterey Road, within an urbanized portion of Morgan Hill. **Figure 1** shows the location of the project site. The subject property consists of four parcels (APNs 767-08-035 through 767-08-038) that have been historically used for residential and agricultural purposes. One of the parcels addressed 45 West Dunne Avenue (APN 767-08-036) was developed with a single-family residence around 1900. A second parcel (APN 767-08-038) is developed with two residential dwellings, while APNs 767-08-037 and 767-08-035 are undeveloped and contain outbuildings on either side of the 45 West Dunne Avenue residence, respectively. Overall, the proposed project site includes three residences, three garages, one barn, and two sheds.

The subject property is nearly level, with a slight slope ranging in elevation from approximately 340 feet in the eastern part of the site to 344 feet above mean sea level in the western corners of the project site. The majority of the project site, including the 45 and 59 West Dunne Avenue residential parcels, is covered with native and ornamental landscape trees, and shrubs located along the property perimeter and adjoining West Dunne Avenue frontage at the houses. The project site has General Plan designation for Multi-Family Low Density use of 5 to 14 dwelling units per acre. Zoning for the project site is D-R3,

Source: Geier & Geier Consulting, Inc. (2015)

Downtown – Medium Density Residential District, similar to residential zoning and development surrounding the site. **Figures 2 and 3** indicate the General Plan land use designations and zoning for the site and vicinity, respectively.

Regional access to the project site is available from State Highway 101, located approximately one mile east of the project site, and its East Dunne Avenue interchange. West Dunne Avenue adjoins the project site and provides local access to the property. Access to the site is available from four driveways that serve three of the residences. Residential uses adjoin the project site on the north and west with homes fronting on West Dunne Avenue and West 5th Street. Commercial uses bound the project site on the east and south, accessed from West Dunne Avenue and Monterey Road. **Figure 4** presents an aerial view of the project site and surrounding project area.

Proposed Residential Development. The project applicant is requesting approval for the following on the 1.41-acre site:

- Demolition of two dwellings and various outbuildings, including three garages and a barn;
- Subdivision of the project site into 19 lots;
- Development of 17 residential lots with 11 rowhouse units, one duet unit, three new single-family residences, and preservation of one existing single-family residence on Lot 17;
- Creation of one lot for open space and flood hazard buffer area; and
- Establishment of one lot as a common area for site access, public utility easement, and emergency access.

The Site Development Plan for the proposed project is shown in **Figure 5.**

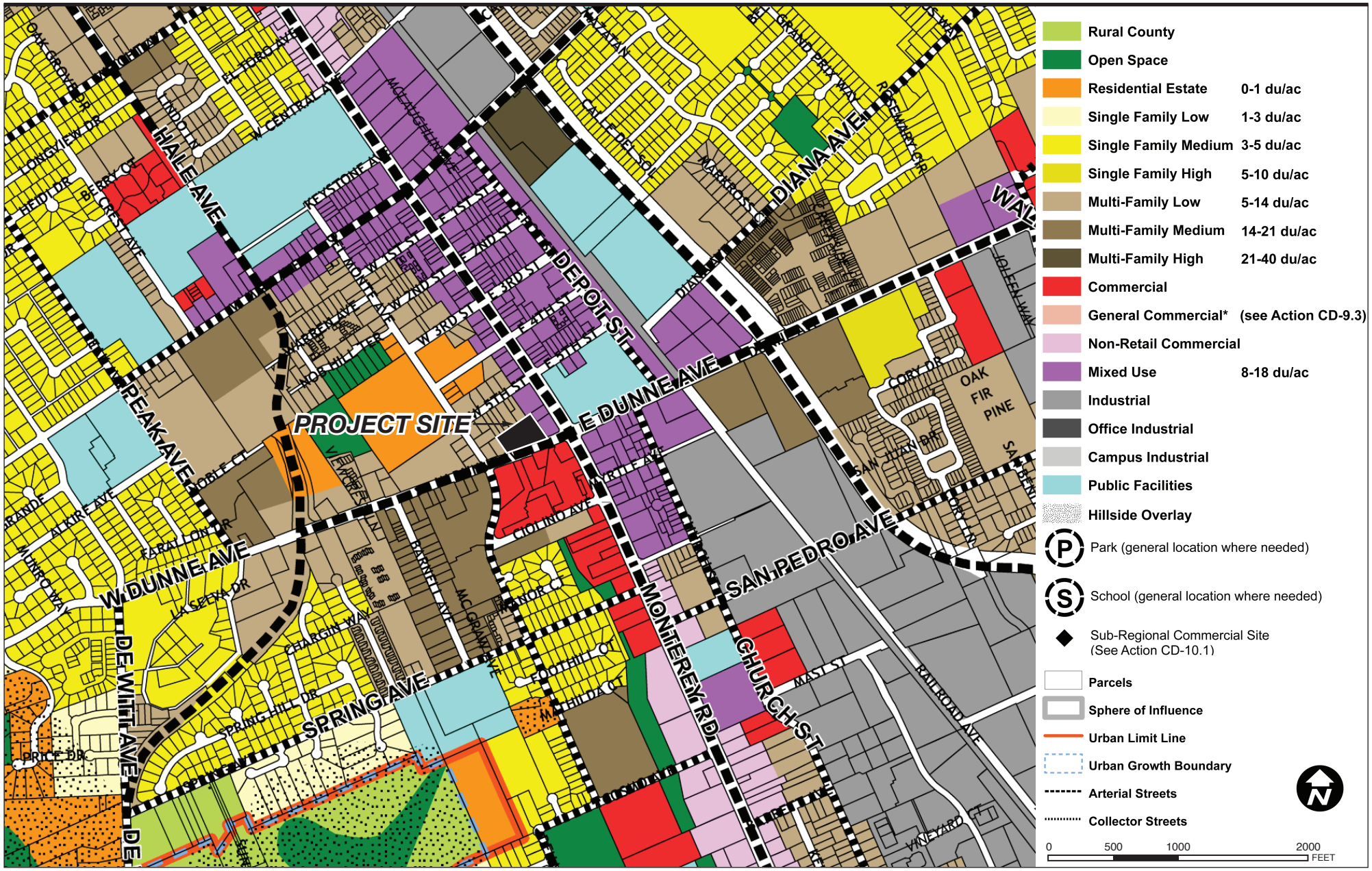
The proposed project involves the subdivision of the site's four parcels into 19 lots for 17 new residential lots (Lots 1 – 17), along with a 10,367 square foot (s.f.) private driveway (Lot 19) for access to the residences and extension of public utilities. Lot 18 consists of a 15,451 s.f. open space area adjoining the drainage channel for Little Llagas Creek on the eastern boundary of the project site. The lots for 11 townhouse units would range from 2,244 s.f. to 1,281 s.f. for the end lots (Lots 1, 2 and 11); each of the eight central townhouse lots would encompass 1,260 s.f. The duet lots would replace the site of the single-family home in the southwestern corner of the subject property, at 59 West Dunne Avenue. The three new single-family residential lots would adjoin the duet lots to the east and range from 4,066 s.f. to 3,382 s.f. The existing residence at 45 West Dunne Avenue would be preserved on a new 5,545 s.f. lot in the southeastern corner of the project site. **Figure 6** presents the Tentative Map for the proposed project.

The new single-family residences proposed for the project site would range from approximately 1,850 s.f. 1,202 s.f. The existing residence at 45 West Dunne Avenue would remain at 1,107 s.f. in size. All of the new townhouses would have 1,428 s.f. of floor area. The building styles and elevations for the proposed residences are shown in **Figures 7 through 11**. The proposed townhouse units and duets would include attached garages for one vehicle and one parking space on the driveway apron. The proposed project would include a new 265 s.f. detached garage for the existing residence at 45 West Dunne along with one uncovered parking space, while the three new single-family residences proposed by the project would have a one space garage and two uncovered parking spaces.

The project site plan indicates that the six single-family residences proposed for Lots 12 through 17 would front on West Dunne Avenue. An access road would be extended from West Dunne Avenue on the eastern end of the site and loop through the project, connecting again with West Dunne Avenue at the western boundary of the project site. The project access road would be 24 feet wide, requiring 17,462 s.f. of the total site area. The loop road would provide vehicle access to all of the single-family and townhouse residential lots. Lots 1 through 11 would be situated around the outside of the loop road on the

General Plan Land Use Designation

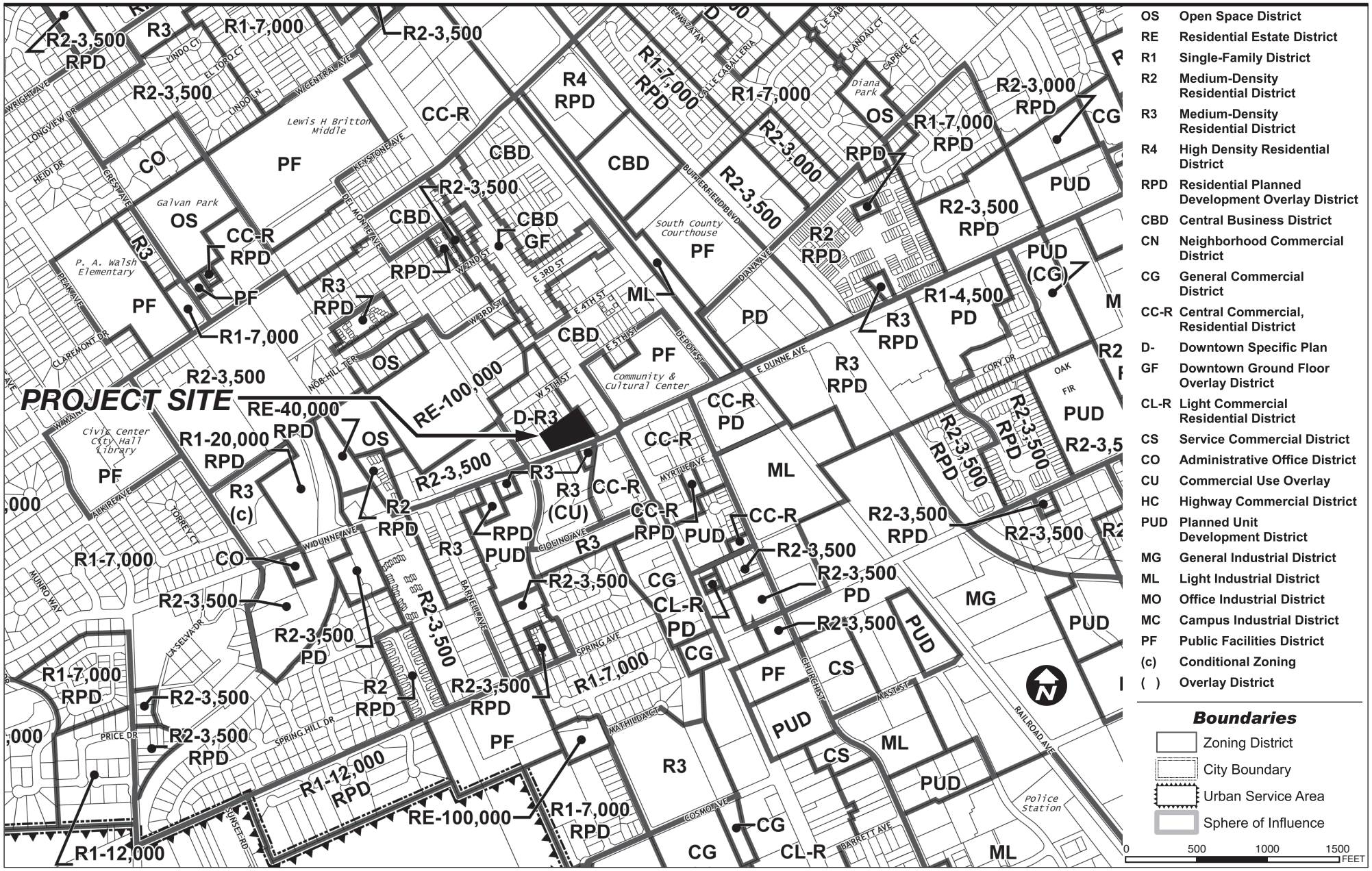
Figure 2



Source: City of Morgan Hill, (2015)

Zoning for Project Site and Vicinity

Figure 3

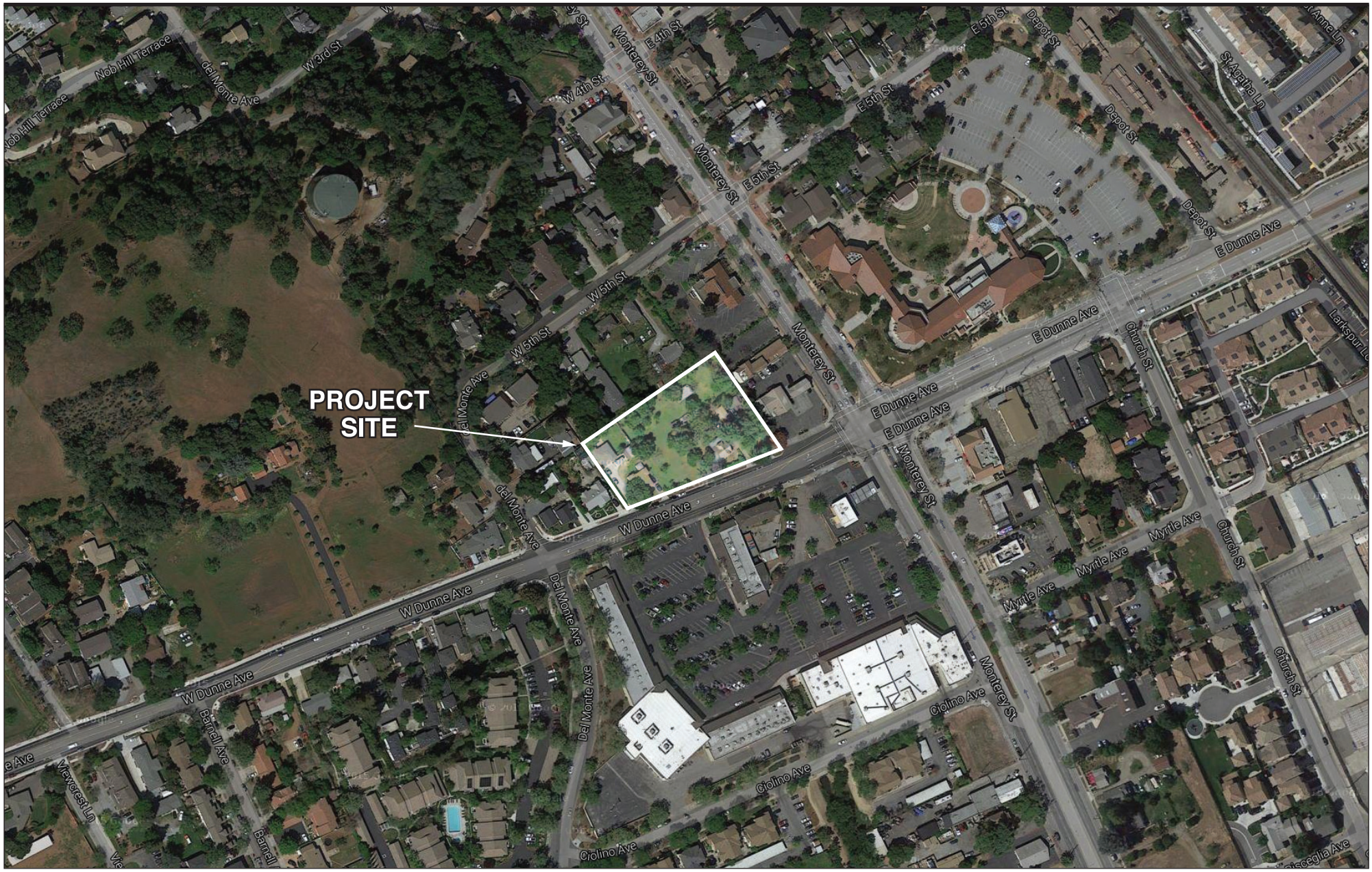


West Dunne Avenue - Gera Residential Subdivision

Source: City of Morgan Hill, (2015)

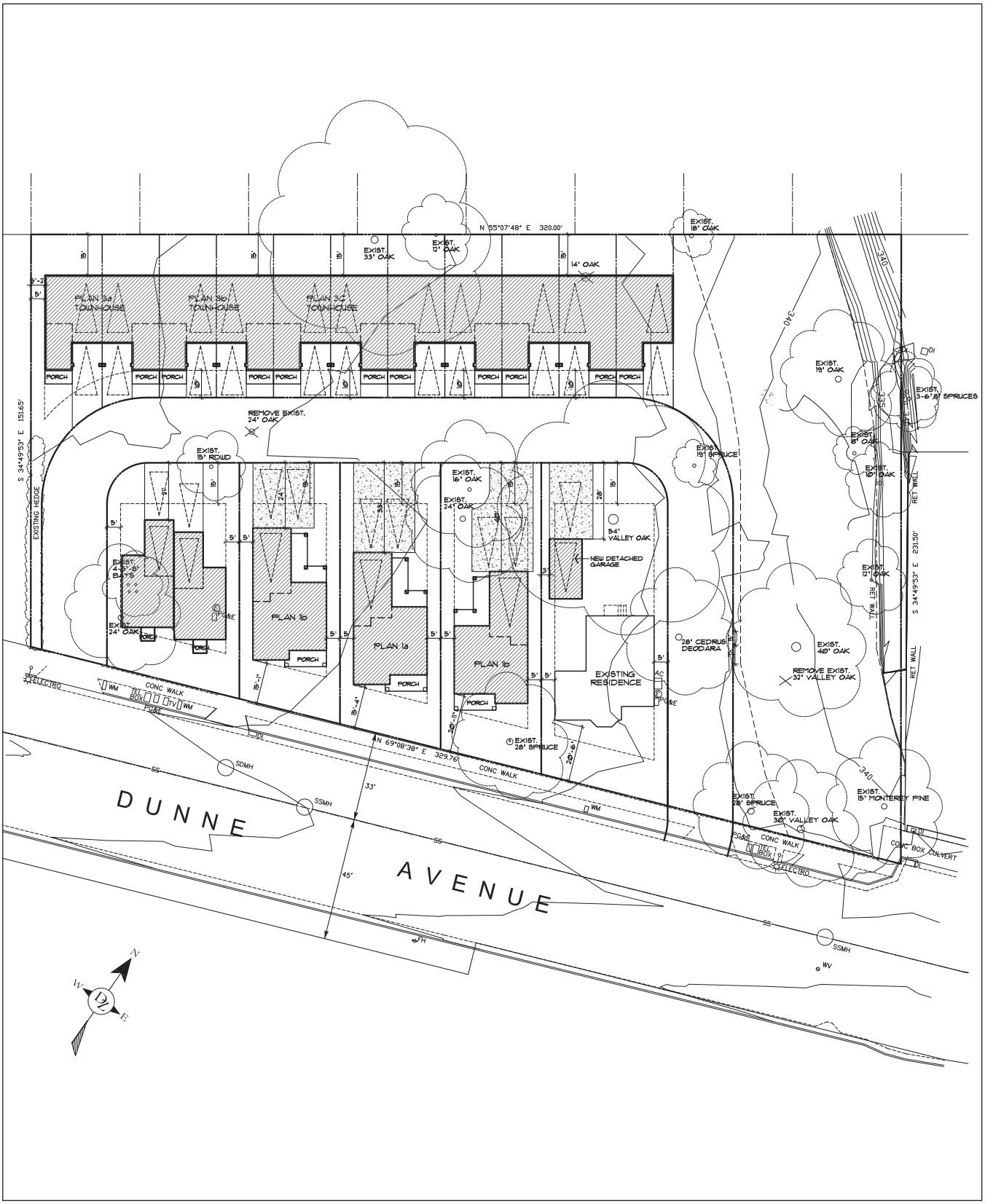
Aerial View of Project Site

Figure 4

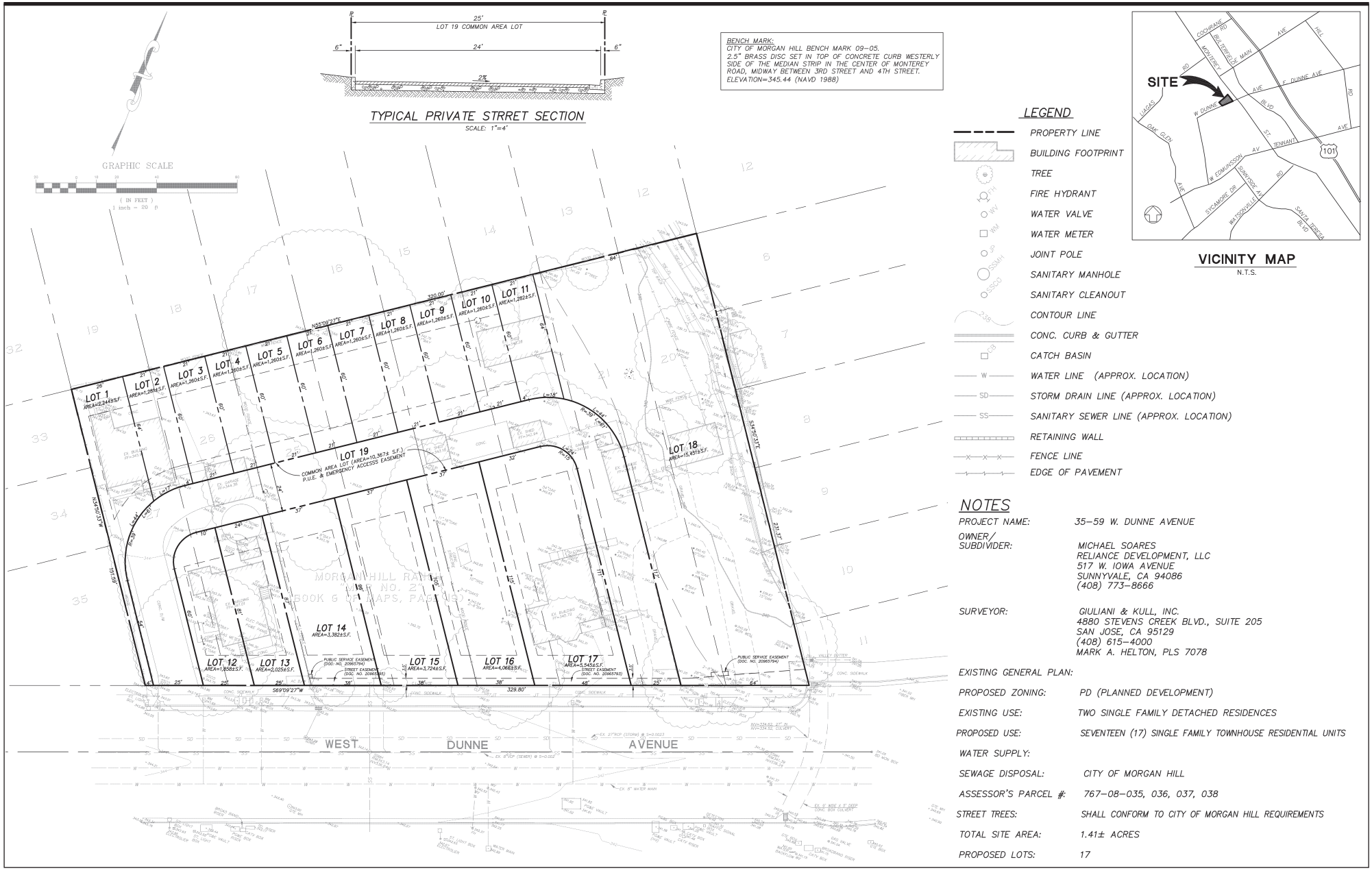


West Dunne Avenue - Gera Residential Subdivision

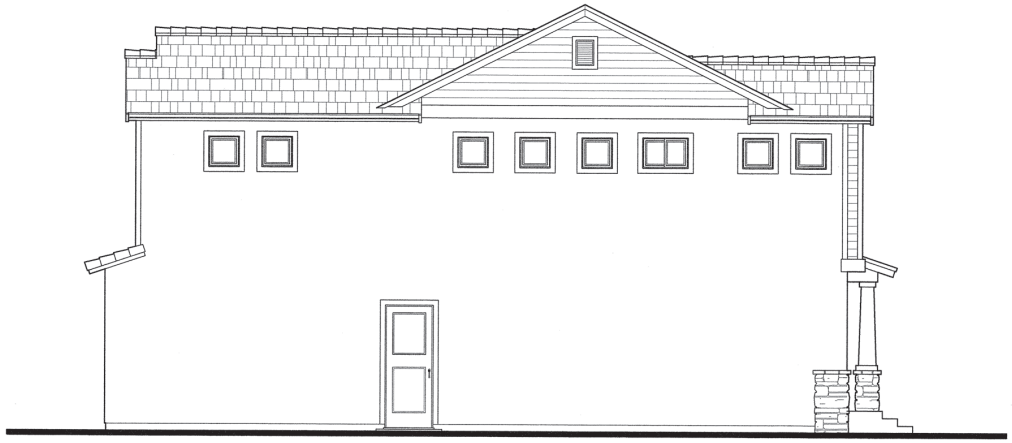
Source: Geier & Geier Consulting, Inc. (2015)



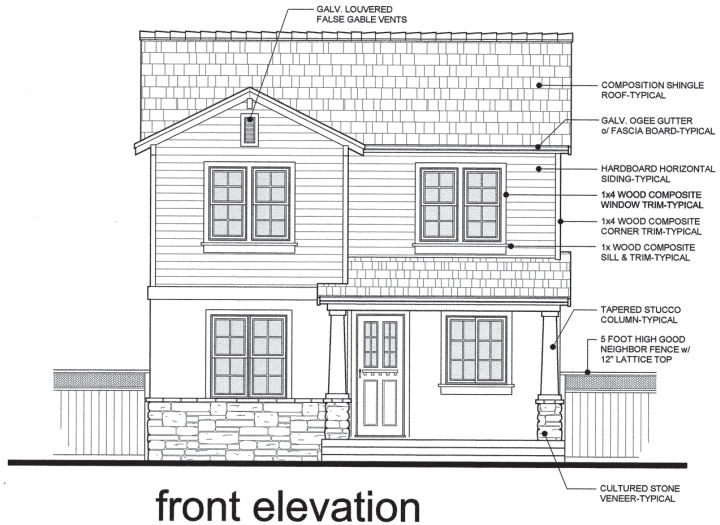
Source: D&Z Design Associates, Inc. (2015)



Source: Giuliani and Kull, Inc. (2015)



left side elevation



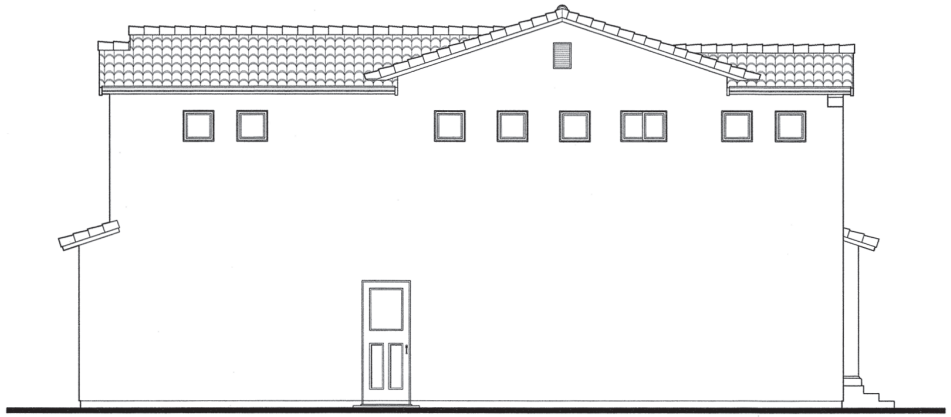
front elevation
"Craftsman"

rear elevation

right side elevation

Plan 1a

Source: D&Z Design Associates, Inc. (2015)



left side elevation

front elevation
"Spanish"

rear elevation

right side elevation

Plan 1b

Source: D&Z Design Associates, Inc. (2015)

Source: D&Z Design Associates, Inc. (2015)

Source: D&Z Design Associates, Inc. (2015)

Source: D&Z Design Associates, Inc. (2015)

northern side of the project site, while providing vehicle access to the single-family lots in the southern half of the property.

Off-site Improvements. The project plans include off-site improvements along its frontage on West Dunne Avenue. Proposed improvements extend to installation of sidewalks, curb and gutters, public utility relocation, and street tree plantings along West Dunne Avenue. Public utilities are available to the project site from West Dunne Avenue and would be extended with the on-site road improvements.

SURROUNDING LAND USES

The proposed residential project would be developed on a 1.41-acre parcel that is surrounded by urban development. Existing residential uses on parcels to the north and west of the project site are similar to residential uses on the project site. A service station on the northwest corner of West Dunne Avenue and Monterey Road, and a commercial office building to the north adjoin the eastern boundary of the site. The Morgan Hill Community and Cultural Center is situated across Monterey Road from these commercial uses. A service station is also located on the southwest corner of West Dunne Avenue and Monterey Road, opposite the project site. Additionally, a multi-family residential development and plaza shopping center are located on West Dunne Avenue south of the project site.

Commercial uses serving the site occur on Monterey Road and West Dunne Avenue in the immediate vicinity of the site. The Morgan Hill Caltrain station is located on Depot Street, approximately 0.25 mile north of the project site. Public recreational facilities in the project vicinity include: Morgan Hill Community and Cultural Center, approximately 200 feet east of the site, the Morgan Hill Community Garden approximately 0.3 mile northeast of the site, and Britton Field and Galvan Park facilities 0.4 mile northwest of the project site, and Morgan Hill Community Park about 0.5 mile south of the site.

OTHER AGENCIES WHOSE APPROVAL IS REQUIRED

In addition to the City of Morgan Hill, lead agency for the proposed project, responsible agencies having discretionary approval or jurisdiction by law over natural resources affected by the project are listed as follows: None.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gases	☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	

DETERMINATION:

On the basis of this initial evaluation:

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

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

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

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

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

Terry Linder, Senior Planner _____ Date _____

EVALUATION OF ENVIRONMENTAL IMPACTS

Issues:

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Aesthetics - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

1a. Scenic Vistas

The project site consists of approximately 1.4 acres of gently sloping land west of the intersection of West Dunne Avenue and Monterey Road, within an urbanized portion of Morgan Hill. The four parcels comprising the project site include: 1) two residences and a garage on one parcel at 59 W. Dunne Avenue (APN 767-08-038); 2) an undeveloped adjoining parcel to the east at 55 W. Dunne Avenue (APN 767-08-037); and two additional parcels (APN 767-08-036, -035) to the east at 45 and 35 W. Dunne Avenue containing a potentially historic residence, barn, two garages, and two sheds. The channel for West Little Llagas Creek bounds the project site on the east. All of the parcels have extensive landscaping that include mature trees along the West Dunne Avenue frontage, affecting views of and across the project site.

Views of the project site and adjoining properties are shown in **Figures 12 and 13**, respectively. Potentially scenic vistas in the vicinity of the project site are available to the public travelling along West Dunne Avenue. Views to the west of the subject property from West Dunne Avenue include El Toro Mountain and associated ridgeline approximately 1.25 miles west of the site. Due to the site vicinity's distance from the Diablo Range approximately five miles to the east, potential views of scenic vistas are limited to low ridgelines that occur on the distant horizon. These ridgelines constitute a small component of views that are available to motorists and affected residents in the project area. Both westward and eastward views along Dunne Avenue are screened and filtered by mature street trees along the roadway and by front yard landscaping on private properties on Dunne Avenue.

In addition to the views along Dunne Avenue, public views of El Toro Mountain are available from the Morgan Hill Community and Cultural Center on Monterey Road, east of the project site. However, a potentially scenic vista view from the community facility to the west is moderated and screened by the facility's landscape trees, street trees on Monterey Road, including median tree plantings, and mature oak and cypress trees on the project site. Also, a small hill approximately ¼ mile west of the community center and northwest of the project site partially obstructs views from the Community Center. The project proposal would preserve a buffer setback area from the creek channel on the site, ranging from 64 to 84 feet in width along the eastern edge of the project site. Mature trees within the buffer zone would be retained and continue to serve as a landscape screen to views from the Community Center. Recent street tree plantings along Monterey Road median would also increase the screening effects upon views to the west from the Community Center.

Views of the Project Site from West Dunne Avenue

Figure 12

Western Portion of the Project Site Viewed from West Dunne Avenue

View of Project Site's Central Parcel

View of Project Site's Historic Residence and Adjoining Parcel

View of Project Site Looking Northeast from West Dunne Avenue

Source: Geier & Geier Consulting, Inc. (2015)

View of Adjoining Properties West of Project Site

View of Project Site's Eastern Boundary and Adjoining Property

Source: Geier & Geier Consulting, Inc.

Residential development on relatively level properties similar to the site adjoins it to the north, west, and south; a gas station on the corner of Monterey Road and West Dunne Avenue is adjacent to the site on the east. Urban uses such as a shopping center and residential uses are located immediately south and north of the project site and scenic vista views are not available across the site. Potentially scenic vista views from side and back yards of residences to the west of the site are similar to those available from West Dunne Avenue, i.e. the Diablo Range approximately five miles to the east; this view is limited to low ridgelines that occur on the distant horizon. Project site landscaping and buildings preclude these views to the east. The proposed project design would replace two of the site's residences, associated structures, and landscaping with new townhomes, single-family residences, and landscaping. Consequently, with potential views of scenic vistas obscured by surrounding residential and commercial development and extensive landscaping, the proposed project would have no significant effects on scenic resources.

1b. Scenic Resources Within a State Scenic Highway

There are no state-designated scenic highways in the project vicinity and, therefore, the project would not affect scenic resources within a state scenic highway.

1c. Visual Character

The visual quality and character of the project site is defined by its current use for residential purposes, while the visual character of the project area setting is formed by the suburban residential and commercial uses surrounding the project site. Open agricultural lands and rural residential lots to the west of the project site and south of the project area contribute to the semi-rural character of the project vicinity. Private views of the project site that define its visual character are primarily available from side and rear yards of residences on West Dunne Avenue, West 5th Street, and Del Monte Avenue adjoining the subject property. Public views of the project site are available to travellers on Dunne Avenue and Monterey Road, south of West Dunne Avenue. Figure 12 presents views of the project site from West Dunne Avenue.

The development of the vacant project site with 16 new townhome and single-family residential units would change the character of the project site from semi-rural residential to suburban residential uses. The project proposal entails the removal of numerous trees on the project site to accommodate development of the project residences and site access road. The project's proposed residential units would be consistent with the existing residential development in the project area to the west and south of the site, along Del Monte Avenue, West 5th Avenue, Barnell Avenue, and Viewcrest Lane.

The visual character of the project site as viewed from West Dunne Avenue presently reflects the suburban residential and large residential lot components of the project site and is defined by large, mature trees that occur on the project primarily on the two easternmost parcels (APNs 767-08-035 and 767-08-036) and smaller landscape trees along the site's frontage on West Dunne Avenue. The proposed project would remove seven trees within the open space/flood hazard buffer area on the eastern perimeter of the project site and retain eight large oak and spruce trees in this area. In addition, site trees along West Dunne Avenue, including two large spruce trees and several smaller oaks would be retained on the site as part of the project. The project would also involve the removal of 13 trees on the project site for residential construction and five trees for the development of the site's access drive. As a result, the project would remove a total of 25 trees for site development.

The views of the project site from West Dunne Avenue would change from those of a suburban and large lot residential use, as defined by the two existing residences on the site's current four lots, to views that are more suburban in character as those already occurring on West Dunne Avenue to the west of the site. Figure 13 presents views of residential uses adjoining the project site. The existing trees along the frontage of West Dunne Avenue would moderate views of the five new single-family homes along with the existing residence at 45 West Dunne Avenue. Landscape plantings required by the City as a part of

the conditions of project approval would further reduce the effects of residential development on views from West Dunne Avenue. The City's Design Review process (City of Morgan Hill Municipal Code Section 18.74) applies to all new development beyond the construction of a single-family home. Landscape plans are required for review and approval as part of the Design Review process.

The overall visual character of the project site is substantially affected by the large spruce and oak trees on the property and the smaller oaks along West Dunne Avenue. The proposed project would retain and preserve these trees to maintain the most prominent visual and aesthetic features of the project site. Tree removal would affect only one large valley oak specimen in the proposed open space buffer area of the project site. Removal is recommended by the project arborist primarily due to its damaged and poor condition, and the safety hazard posed by its condition. Landscape plantings that would be implemented as part of the conditions of approval would further maintain and augment the visual character of the project site. Consequently, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

1d. Light or Glare

The project site currently produces lighting effects through existing residential uses. The development of a new loop roadway and additional housing on the site would extend existing light sources to other parts of the site. Proposed exterior lighting for new residences will need to conform to the design standards stipulated by City Building Code, which will ensure that project lighting would not adversely affect adjacent properties.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Agriculture and Forestry Resources – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Dept. of Forestry and Fire Protection regarding the state's inventory of forest land, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

2a, 2b, 2c, 2d, 2e. Farmland, Agricultural, and Forestry Uses

The City of Morgan Hill General Plan currently designates the project site for multi-family residential development and is also zoned for this use. The 1.41-acre project site presently supports three residences, associated outbuildings, and various landscaping including large oak trees, spruce trees, and volunteer fruit and nut trees. The project site is surrounded by suburban residential properties, constraining agricultural use of the site. Given the small size of this parcel, current residential uses on the property, current zoning, and the extensive residential development surrounding the project site, project development would have a less than significant effect on the conversion of the site to a non-agricultural use.

It should be noted that the City formulated agricultural policies and prepared an implementation program to guide the conservation of agricultural lands within the City's Sphere of Influence area.1 The City has designated agricultural lands in the Southeast Quadrant of the community for conservation and continued agricultural use.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
3. Air Quality - Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

[1] City of Morgan Hill, 2011. *Morgan Hill Agricultural Policies and Implementation Program*. December 22.

3a. Air Quality Planning

The San Francisco Bay Area Air Basin (SFBAAB) is classified by the Bay Area Air Quality Management District (BAAQMD) as non-attainment for ozone and inhalable particulates (PM_{10}). To address these exceedances, the BAAQMD, in cooperation with the MTC and ABAG, prepared the *Bay Area 2005 Ozone Strategy (BAOS)* in September 2005 and *Particulate Matter Implementation Schedule (PMIS)* in November 2005. The PMIS discusses how the BAAQMD implements the California Air Resources Board's 103 particulate matter control measures. The most recently adopted air quality plan in the Basin is the *2010 Bay Area Clean Air Plan* (*CAP*). This *CAP* outlines how the SFBAAB will attain air quality standards, reduce population exposure and protect public health, and reduce greenhouse gas (GHG) emissions.

The consistency of the proposed project with the most recently adopted regional air quality plan, the *CAP,* is determined by comparing the project's consistency with pertinent land use and transportation control measures contained in the *CAP*. Pertinent measures relate to evaluating impacts according to the BAAQMD's CEQA Guidelines (impact evaluation presented below).

The project's construction-related and operational emissions were determined to not exceed the BAAQMD's CEQA significance thresholds for criteria air pollutants and diesel particulate matter. Therefore, the proposed project's emissions would be consistent with the BAAQMD's *CAP* (the most recently adopted regional air quality plan). The consistency of the proposed project with the most recently adopted regional air quality plan, the *CAP,* is also determined by comparing the project's consistency with the Morgan Hill General Plan. Since the *CAP* is based on population projections of the Association of Bay Area Governments (ABAG) that are based on the City's General Plan in effect at the time the *CAP* was approved, consistency of the project with the General Plan would indicate consistency with the *CAP*. The project would be consistent with the use and density allowed on the project site by the Morgan Hill General Plan, and therefore, the project would be consistent with the *CAP*, a less-than-significant impact.

3b. Air Quality Standards

Regulatory and Planning Framework. The BAAQMD is responsible for attaining and/or maintaining air quality in the San Francisco Bay Area Air Basin (SFBAAB) within Federal and State air quality standards. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable Federal and State standards. In June 2010, the BAAQMD adopted CEQA thresholds of significance and updated its CEQA Air Quality Guidelines, which provides guidance for assessing air quality impacts under CEQA. However, on March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the Thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. On August 13, 2013, the California Court of Appeal reversed the Alameda County Superior Court judgment that invalidated the BAAQMD's CEQA thresholds of significance. The Court directed that the Superior Court vacate the writ of mandate issued in March 2012, ordering the BAAQMD to set aside its June 2010 resolution (Res. #2010-06) "Adopting Thresholds for Use in Determining the Significance of Projects' Environmental Effects Under the California Environmental Quality Act." Although the California Supreme Court has granted review in the litigation to hear one particular issue of law, the granting of review does not alter the result in the Court of Appeal, though the latter court's decision is no longer a published, citable precedent. And the legal cloud created by the trial court decision no longer exists. Local agencies such as the City of Morgan Hill may rely on the BAAQMD thresholds.

Significance Thresholds. Exercising its own discretion as lead agency and similar to multiple other San Francisco Bay Area jurisdictions, the city staff has decided to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD.[2] The BAAQMD *Options and Justification Report* establishes thresholds based on substantial evidence and are consistent with the thresholds outlined within the 2010/2011 BAAQMD CEQA Air Quality Guidelines. The thresholds have been developed by the BAAQMD in order to attain state and national ambient air quality standards. Therefore, projects below these thresholds would not violate an air quality standard and would not contribute substantially to an existing or projected air quality violation:

- NO_X and ROG: 54 pounds/day
- PM_{10}: 82 pounds/day
- $PM_{2.5}$: 54 pounds/day

In addition to establishing the above significance thresholds for criteria pollutant emissions, the BAAQMD, in its *Options and Justification Report,* also recommended the following quantitative thresholds to determine the significance of construction-related and operational emissions of toxic air contaminants from individual project and cumulative sources on cancer and non-cancer health risks:

- Increased cancer risk of >10.0 in a million for individual projects and >100 in a million (from all local sources) for cumulative sources;
- Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute) for individual projects and >10.0 Hazard Index (from all local sources) for cumulative sources; and
- Ambient $PM_{2.5}$ increase: >0.3 $\mu g/m^3$ annual average for individual projects and >0.8 $\mu g/m^3$ annual average (from all local sources) for cumulative sources.

Project Emissions. The project's construction-related and operational emissions are estimated and compared to the above significance thresholds in **Table 1**. As shown in this table, the project's construction-related and operational air pollutant emissions would not exceed the BAAQMD significance thresholds for criteria pollutants, a less-than-significant impact. However, the BAAQMD recommends that all Basic Construction Mitigation Measures be implemented for all construction projects, whether or not construction-related emissions exceed these significance thresholds. Therefore, the project's construction-related and operational increases in criteria pollutant emissions would be less than significant with implementation of Mitigation Measure AQ-1.

3c. Cumulative Air Quality Impacts

To address cumulative impacts on regional air quality, the BAAQMD has established thresholds of significance for construction-related and operational criteria pollutants and precursor emissions. These thresholds represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If daily average or annual emissions exceed these thresholds, the project would result in a cumulatively significant impact. Since the project's construction-related and operational criteria pollutant emissions would not exceed BAAQMD significance thresholds (as indicated in Table 1), the project's contribution is considered to be less than cumulatively considerable, and therefore, less than significant.

In addition, when the project's construction-related diesel particulate matter (DPM) emissions are considered with other existing stationary and mobile sources of toxic air contaminants (TACs), the project's contribution to cumulative emissions would not contribute to cumulative construction-related

[2] Bay Area Air Quality Management District, 2009. *Revised Draft Options and Justification Report*. October. Available online at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.

risk and hazard impacts would not be cumulatively considerable, a less-than-significant impact (see Section 3d below for more discussion).

TABLE 1

PROJECT-RELATED CONSTRUCTION AND OPERATIONAL CRITERIA POLLUTANT EMISSIONS

	Average Daily Emissions (pounds/day)					
Project Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 (Total)**	**PM2.5 (Total)**
Project Construction (Off-Road Equipment Emissions[a])						
– 2016 – No Mitigation	33.2	25.8	19.9	0.0	7.3	4.2
Significance Thresholds	54	54	-	-	82	54
Exceeds Significance Thresholds?	No	No	-	-	No	No
Project Operation[b]						
– Area Source Emissions	0.7	0.0	1.4	0.0	0.0	0.0
– Energy Emissions	0.0	0.1	0.0	0.0	0.0	0.0
– Mobile Source Emissions	0.5	1.0	4.3	0.0	0.7	0.2
Total	**1.2**	**1.1**	**5.7**	**0.0**	**0.7**	**0.2**
Significance Thresholds	54	54	-	-	82	54
Exceeds Significance Thresholds?	No	No	-[b]	-[c]	No	No
	Average Annual Emissions (tons/year)					
Project Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 (Total)**	**PM2.5 (Total)**
Project Construction (Off-Road Equipment Emissions[a])						
– 2016 – No Mitigation	0.7	2.3	1.8	0.0	0.2	0.7
Significance Thresholds	10	10	-	-	15	10
Project Operation						
– Area Source Emissions	0.1	0.0	0.1	0.0	0.0	0.0
– Energy Emissions	0.0	0.0	0.0	0.0	0.0	0.0
– Mobile Source Emissions	0.1	0.2	0.8	0.0	0.1	0.0
– Waste	0.0	0.0	0.0	0.0	0.0	0.0
– Water	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.2**	**0.2**	**0.9**	**0.0**	**0.1**	**0.0**
Significance Thresholds	10	10	-	-	15	10
Exceeds Significance Thresholds?	No	No	-	-[cs]	No	No

NOTES: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; exhaust PM_{10} = particulate matter less than 10 microns; exhaust $PM_{2.5}$ = particulate matter less than 2.5 microns.

[a] Construction assumptions: demolition would occur over 20 days using 1 concrete saw, 1 dozer, and 1 loader/backhoe; site prep would occur over 2 days using 1 grader, 1 dozer, and 1 loader/backhoe; grading would occur over 4 days using 1 grader, 1 dozer, and 1 loader/backhoe; construction of 16 new residential units would occur over 200 work days using 1 crane, 1 forklift, 1 generator set, 1 loader/backhoe, and 3 welders; and paving would occur over 10 work days using 1 cement mixer, 1 paver, 1 paving equipment, 1 roller, and 1 loader/backhoe.

[b] CO: If localized carbon monoxide estimated emissions exceed 550 pounds/day, more detailed analysis is required. Therefore, emissions below this threshold indicate that CO emissions would be less than significant.

[c] SO_2: The SO_2 state and federal standards are currently being met throughout the Bay Area and have been met in recent decades. Therefore, the project's estimated emissions would be less than significant.

SOURCE: CalEEMod Output (see **Attachment 1**)

3d. Exposure of Sensitive Receptors

The California Air Resources Board (CARB) regulates vehicle fuels with the intent to reduce emissions. Diesel exhaust is a serious concern throughout California. The CARB identified diesel engine particulate matter as a toxic air contaminant and human carcinogen. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the diesel particles, which are very small and can penetrate deeply into the lungs.

Diesel engine particulate matter has been identified as a human carcinogen. Mobile sources such as trucks, buses, and automobiles are some of the primary sources of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections. The cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. Diesel exhaust contains both pulmonary irritants and hazardous compounds that can affect sensitive receptors such as young children, senior citizens, or those susceptible to chronic respiratory disease such as asthma, bronchitis, and emphysema.

In 2005, the CARB approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles, which altered five sections of Title 13 of the California Code of Regulations. The changes relevant to the proposed project are in Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which limit idling of a vehicle's primary diesel engine for greater than five minutes in any location (with some exceptions) or operation of a diesel-fueled auxiliary power system within 100 feet of residential areas.

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. Adjacent residences are considered to be the closest sensitive receptors to project construction.

Operation of the proposed residential use would not generate toxic air contaminants (TACs) that would pose a health risks to adjacent or nearby uses. However, during project construction, combustion emissions from operation of off-road construction equipment on the project site would be generated and could expose adjacent and nearby receptors to diesel particulate matter (DPM) and other toxic air contaminants (TACs) that are associated with various health risk factors. Due to the proximity of sensitive receptors to the project site, a screening-level construction-related health risk analysis was completed for the project and impacts on nearby sensitive receptors from DPM emissions. The results of the health risk screening are summarized in **Table 2**. As indicated in this table, the project's construction-related DPM emissions would not exceed BAAQMD significance thresholds for cancer and non-cancer health risks for infants (up to 2 years in age), which have the highest age sensitivity factor (ASF). Therefore, the project's construction-related DPM emissions would result in a temporary, less-than-significant health risk to infants and no mitigation would be required.

In addition to the above construction-related risk and hazard impacts, sensitive receptors in the project vicinity would be exposed to cumulative risk and hazard impacts from the project's construction-related emissions in combination with existing stationary and mobile sources within approximately 1,000 feet of the project area. Therefore, in addition to project construction, possible local stationary or vehicular source emissions must be added to this concentration to determine the cumulative total. Specifically, the BAAQMD requires that existing stationary and mobile emissions sources (i.e. freeways or roadways with more than 10,000 vehicles per day) within 1,000 feet of the project area also be considered. Any potential cumulative health risk would, therefore, derive from project activities plus any existing identified risk sources within the project vicinity. According to BAAQMD records, there are seven stationary sources within 1,000 feet of the project site (**Table 3**), and one roadway within 1,000 feet of the site with average daily traffic volumes exceeding 10,000 (**Table 4**). As shown in **Table 5**, when emissions from these existing sources are added to project emissions, cumulative emissions would not exceed the cumulative significance thresholds for risk and hazard impacts at new on-site sensitive receptors or existing nearby receptors, a less-than-significant cumulative impact. Therefore, the project's contribution to cumulative construction-related risk and hazard impacts would be less than cumulatively considerable, a less-than-significant impact.

TABLE 2

CANCER RISK AND CHRONIC NON-CANCER HEALTH RISKS AT THE CLOSEST SENSITIVE RECEPTORS DUE TO DPM EXPOSURE DURING PROJECT CONSTRUCTION

Parameter	$PM_{2.5}$ Exposure, Excess Cancer Risk,[a] and Non-Cancer Chronic Hazard Index from Project Construction Activities at Closest Receptors
Maximum One-Hour $PM_{2.5}$	2.271 μg/m^3
Annual Average $PM_{2.5}$ (one-hour x 0.1)	0.2271 μg/m^3
Annual Average $PM_{2.5}$ Significance Threshold	0.3 μg/m^3
Exceeds Significance Threshold?	No
Age-Weighted Excess Risk for Infants	9.73 in a million[b]
Children	2.92 in a million[b]
Adults	0.97 in a million
Cancer Risk Significance Threshold	>10 in a million
Exceeds Threshold?	No
Chronic / Acute Non-Cancer Hazard Index	0.045 / 0.264
Chronic Non-Cancer Significance Threshold	Hazard Index >1.0
Exceeds Threshold?	No

NOTES:

[a] The predicted maximum one-hour DPM concentration is 2.271 μg/m^3 resulting from on-site total project DPM emissions of 0.1459 tons. With implementation of Mitigation Measure AQ-2 (use of diesel particulate filters on large construction equipment, >50 HP), the predicted maximum one-hour DPM concentration is 1.452 μg/m^3 resulting from on-site total project DPM emissions of 0.0924 tons. The hourly to annual scaling factor is 0.1. AERSCREEN output thus indicates that project construction would produce a maximum annual DPM concentration of 0.2271 μg/m^3 without mitigation and 0.1452 μg/m^3 with mitigation.

[b] The excess individual cancer risk factor for DPM exposure is approximately 300 in a million per 1 μg/m^3 of lifetime exposure (DPM (μg/m^3) x ASF x 300 x 10^{-6}) / 70 years. More recent research has determined that young children are substantially more sensitive to DPM exposure risk. If exposure occurs in the first several years of life, an age sensitivity factor (ASF) of 10 should be applied. For toddlers though mid-teens, the ASF is 3.

SOURCES: A screening-level individual cancer analysis was conducted to determine the maximum $PM_{2.5}$ concentration from diesel exhaust. This concentration was combined with the DPM exposure unit risk factor to calculate the inhalation cancer risk from project-related construction activities at the closest sensitive receptor. The EPA AERSCREEN air dispersion model was used to evaluate concentrations of DPM and $PM_{2.5}$ from diesel exhaust. The AERSCREEN model was developed to provide an easy to use method of obtaining pollutant concentration estimates and is a single source Gaussian plume model which provides a maximum one-hour ground-level concentration. The model output for this analysis is included in the **Attachment 1** of this report.

TABLE 3

CUMULATIVE RISK AND HAZARD IMPACTS FROM EXISTING PERMITTED STATIONARY SOURCES

Site #	Facility Name	Street Address	City	Distance	Excess Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
13083	Morgan Hills Discount Cleaners	16990 Monterey Road	Morgan Hill	220 feet	32.4	0.086	0.00	0.00
G11163	Pump Ngo	16995 Monterey Road	Morgan Hill	500 feet	0.64[a]	0.001	0.00	0.00
16458	California Drawers	16890 Church Street	Morgan Hill	840 feet	0.00	0.00	0.00	0.00
20308	California Cabinet	16890 Church Street	Morgan Hill	840 feet	0.00	0.00	0.00	0.00
12636	Rawson Custom Cabinet	16890 Church Street	Morgan Hill	840 feet	0.00	0.00	0.00	0.00
G11597	Unocal 6169	17015 Monterey Street	Morgan Hill	600 feet	0.343[a]	0.0001[a]	0.00	0.00
16604	Verizon Wireless Generator	100 W 3rd St	Morgan Hill	500 feet	1.369[a]	0.000[a]	0.0	0.0
Total – Stationary Sources					**34.75**	**0.088**	**0.00**	**0.00**

[a] Adjusted for distance per BAAQMD Distance Multiplier Tool for Gasoline Dispersing Facilities.

SOURCES: BAAQMD Stationary Source Screening Analysis Tool (May 30, 2012) and Distance Multiplier Tool for Gasoline Dispersing Facilities (June 13, 2012). Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

TABLE 4

CUMULATIVE RISK AND HAZARD IMPACTS FROM EXISTING MOBILE SOURCES

Direction	Roadways with ADT of >10,000	Distance	ADT	Excess Cancer Risk (cases in a million)[a]	$PM_{2.5}$ Concentration ($\mu g/m^3$)
N-S	Monterey Road	120 feet	17,780	3.62	0.136

NOTES: There were no freeways located within 1,000 feet of the project site.

[a] Interpolated for site-specific distances and ADTs on roadways near the project site were obtained from the City of Morgan Hill White Paper, *Transportation and Public Infrastructure*, May 16, 2013.

SOURCE: BAAQMD Roadway Screening Analysis Calculator, April 16, 2015. Available online at Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools.

TABLE 5

CUMULATIVE RISK AND HAZARD IMPACTS

	Excess Cancer Risk[a]	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
On-Site Receptors				
Stationary Sources (see Table 3 above)	34.75	0.088	-	<0.001
Roadways (see Table 4 above)	3.62	-	-	0.136
Maximum Cumulative	38.37	0.088	-	0.136
Threshold	100	10	10	0.8
Exceeds Threshold	No		No	No
Off-Site Receptors				
Stationary Sources (see Table 3 above)	34.75	0.088	-	<0.001
Roadways (see Table 4 above)	3.62	-	-	0.136
Proposed Project (worst-case)	9.733	0.045	0.264	0.227
Maximum Cumulative	48.10	0.133	0.264	0.363
Threshold	100	10	10	0.8
Exceeds Threshold?	No	No	No	No

NOTES:

[a] Cancer cases in a million

SOURCE: Tables 2, 3, and 4

3e. Odors

According to the BAAQMD CEQA Guidelines, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The project would not include any uses identified by the BAAQMD as being associated with odors. No new or unusual sources of nuisance odors would be associated with the proposed residence. Therefore, the project's potential for nuisance odor problems would be less than significant.

During project construction, however, nuisance diesel odors associated with operation of diesel construction equipment on-site (primarily during initial grading phases), but this effect would be localized, sporadic, and short-term in nature. Therefore, temporary impacts from nuisance diesel odors on adjacent residential receptors would be less than significant.

Mitigation Measures – Air Quality (AQ)

Although the project's construction-related air pollutant emissions would not exceed the BAAQMD's applicable significance thresholds, the following measures are recommended by the BAAQMD to reduce the project's construction emissions:

AQ-1: ***Basic Construction Measures.*** *To limit the project's construction-related dust and criteria pollutant emissions, the following BAAQMD-recommended Basic Construction Mitigation Measures shall be included in the project's grading plan, building plans, and contract specifications:*

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

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

e. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.

f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

g. 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 running in proper condition prior to operation.

h. Post a publicly visible sign with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Biological Resources - Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The following evaluation of biological resources on the subject property derives from Biological Resource Report[3] prepared by Wood Biological Consulting, Inc. in March 2015 (included as **Attachment**

[3] Wood Biological Consulting, Inc., 2015. *Biological Resource Report for the Oak Creek Subdivision, City of Morgan Hill, Santa Clara County, California*. March 25.

2). Information regarding the numerous trees on the site was compiled by Mighty Tree Movers and presented in the arborist's report[4] submitted to the City June 13, 2013 (included as **Attachment 3**). In addition to the assessment of the biological resources on the project site, these reports include recommendations for the preservation and conservation of these resources through project site design.

4a, 4b, 4c, 4d. Special-Status Species, Sensitive Natural Communities and Wetlands, Protected Wetlands, Fish and Wildlife Movement, Corridors, Nursery Sites

The study area encompasses four contiguous parcels (APN 767-08-035, 036, 037 and 038). The four lots are located at 35-59 West Dunne Avenue. The partially developed lots cover a total of 1.41 acres. The project site has been historically used for residential and agricultural purposes. One of the parcels (APN 767-08-036) was developed with a single-family residence around 1900. A second parcel (APN 767-08-038) is developed with two residential dwellings, while the two remaining parcels (APN 767-08-037 and 767-08-035) are undeveloped and contain outbuildings on either side of the 45 West Dunne Avenue residence, respectively. Overall, the project site includes three residences, three garages, one barn, and two sheds.

Based on a review of a 1939 aerial photograph[5], much of the Morgan Hill area supported agriculture, predominantly fruit and nut orchards. Already at that time, the project site supported the existing home, which was built in 1900, surrounding by many of the same large oak trees present today.

Currently, the non-paved or developed portions of the project site support a relatively dense canopy of mature oaks and ornamental trees, interspersed with non-native annual grassland. Although the oaks are likely naturally occurring, based on the site's historic use and alteration, these trees and grassy areas can be aggregated under the heading of anthropogenic habitat; no portion of the project site would be regarded as a natural plant community. This plant assemblage is described below.

Plant Communities and Wildlife Habitats. Anthropogenic plant associations are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities. Within the project area, anthropogenic habitats include areas of lawn, maintained and non-maintained plantings, remnant orchard trees, and mature oaks and ornamental trees (see Attachment 2, Appendix A of the Biological Resource Report). The large-canopied trees on-site consist of native coast live oak and valley oak. Other native trees and large shrubs present on-site include California bay and toyon. Ornamental trees and shrubs present on-site include deodar cedar, myoporum, cherry plum, privet, black walnut, European olive, silver wattle, cotoneaster, sweet almond, and Brazilian peppertree, among others.

Where fallow or not maintained, the grassy areas dominated by non-native annual grasses such as wild oats, ripgut brome, foxtail barley, and rattail fescue are present. Other non-native grasses and forbs typical of highly disturbed sites such as this one include Bermuda buttercup, common groundsel, spiny sowthistle, bristly ox-tongue, common chickweed, burclover, white-flowered onion, cutleaf geranium, field hedge parsley, Italian thistle, and fiddle-leaf dock. The only native herbs detected on-site include bedstraw, wild cucumber, miner's lettuce, and bittercress.

Landscaped or wooded vegetation on-site is not classified by Sawyer et al.;[6] it would be classified as an upland following Cowardin et al.[7] (1979). Unless found to harbor special-status species or otherwise

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[4] Mighty Tree Movers, 2013. *Arborist Report: Tree/Site Report, 45 West Dunne Ave. Morgan Hill CA 95037.*

[5] Available online at http://digitalcollections.ucsc.edu/cdm/singleitem/collection/p16019coll5/id/1329/rec/1

[6] Sawyer, J.O., T. Keeler Wolf, and J.M. Evans. 2009. A Manual of California Vegetation (2nd Edition). California Native Plant Society, Sacramento. 1300 pp. Available on line at http://www.cnps.org/cnps/vegetation/manual_2ed.php.

[7] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service. 1979. Available online at http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm.

regulated under local tree protection ordinances, the removal trees on-site would not typically be regarded as significant pursuant to CEQA guidelines.

Grassy portions of the site most closely conform to Wild Oats Grassland (*Avena [barbata, fatua]* Semi-Natural Herbaceous Stands) as described in Sawyer et al. (2009; CA vegetation code 44.150.00). This plant association has been described as Non-native Grassland by Holland (1986; Holland code 42200). Non-native annual grasslands would be classified as an upland following Cowardin et al. (1979). As a common, widespread and non-natural plant association, non-native annual grassland has no global or state rarity ranking. Unless found to harbor special-status species, the removal non-native annual grassland would not typically be regarded as significant pursuant to CEQA guidelines.

Anthropogenic habitats are those created as a result of and maintained by human activities (e.g., land clearing, cultivation, development). Anthropogenic plant communities have been described as agrestal (cultivated), pastoral (grazed), ruderal, plantations, and urban (landscaped). In addition to these vegetated communities, anthropogenic habitats also include structures that may also attract a wide variety of wildlife species.

Many native and non-native wildlife species are well adapted to anthropogenic habitats, while others are completely or nearly dependent on them. These species are attracted by certain resources readily available in anthropogenic settings such as forage, water and shelter while being tolerant of human disturbances such as noise, lighting, and the movement of people and machinery. Buildings may provide nesting and roosting opportunities for a variety of birds which nest under eaves, in roof tiles, and even on graveled roof tops. Cracks, seam joints, roof vents, loose siding and roof tiles also providing suitable roosting sites for numerous species of bats. Many mammals are attracted to human development source of food (rubbish, garden plants, pet food, and pets themselves). Mature trees on landscaped lots, such as those occurring on-site, may provide nesting and roosting opportunities for a wide variety of birds and bats. They may also serve as a source of forage for a wide variety of birds as well as resting and perching sites for raptors (birds-of-prey).

Engineered flood control channels, especially when located in urbanized areas, can provide a source of water and forage for a variety of invertebrates, birds, reptiles, amphibians and mammals, depending on a variety of environmental and ecological factors. The availability or lack of emergent vegetation, overhanging riparian habitat, riffles and pools, the presence of adjacent open lands for foraging, and the degree of human interference (e.g., noise, lighting, human activity, contaminants, pets, etc.) influence a site's value to wildlife. In general, however, such sites tend to attract mammalian predators that are inured to human habitation such as Virginia opossum, raccoon, Norway and black rat, striped skunk, feral cat, red fox, and coyote. Many common urban birds will utilize urbanized channels for water and forage. Flood control channels may also support a variety of native and non-native fish species, depending on-site conditions and connectivity to larger water bodies. The flood channel occurring on-site is intermittent and far removed from natural stream sections, separated by barriers to upstream movements. As such, it is not expected to support any significant fishery resources.

Wildlife species or their sign[8] detected on-site during the present survey include western scrub-jay, American crow, pocket gopher, northern mockingbird, and Virginia opossum. Two small stick nests, likely built by western scrub-jays were seen in a valley oak tree and a dead deodar cedar.

At the subject parcel, the surrounding non-developed parcels provide some linkage to extensive open lands to the west. Nonetheless, due to the location of the project site in an urbanized area and the lack of open, natural habitats to the east, there is neither the opportunity nor the incentive for wildlife to move across the site to a

[8] Wildlife sign include tracks, vocalization, scat, white-wash, feathers, fur, shed skin, nests, burrows, prey remains, and dead individuals.

significant degree. As such, it is not in and of itself considered to serve as an important movement corridor for wildlife.

Certain habitat and site features fall under federal and State jurisdiction. **Figure 14** presents a map of the potential jurisdictional channel on the project site. **Figure 15** shows views of the creek channel on the site. These typically include stream and drainage courses, water bodies, tidal lands, wetlands, and riparian habitats. The extent of jurisdiction of a given agency varies and is defined by specific guidelines issued by each agency. Important factors evaluated in making a preliminary assessment of agency jurisdiction include site hydrology, vegetation, and soils. Although no special-status plant associations occur within the study area, the flood control channel on the project site is expected to qualify as a waters of the U.S. and a waters of the State; impacts below the tops of bank would be regulated and fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Because the proposed project does not call for the placement of any fill below the top of bank of any surface channel, permits are not required from the USACE or RWQCB[9] or the CDFW[10]. However, the project should be designed in such a manner as to ensure that no release of sediment into the watercourse would occur during construction or after completion of the project. The potential effects of the project on water quality in stream flows and appropriate measures to safeguard the quality of runoff in Little Llagas Creek are addressed in Section 9, Hydrology and Water Quality, of this study.

Special-status Species. Special-status natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection under the Clean Water Act (CWA)[11], Lake and Streambed Alteration Program (LSAP)[12], and/or the Porter-Cologne Water Quality Control Act (Porter-Cologne).[13] A number of communities have been designated as rare and these communities are given the highest inventory priority.

No special-status natural communities (e.g., wetlands, riparian habitat) occur within the study area. As discussed above, the flood control channel is expected to qualify as a waters of the U.S. and a waters of the State; impacts below the tops of bank are regulated and fall under the jurisdiction of the USACE, RWQCB, and the CDFW.

Plant Species. A total of 61 special-status plant species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the project site (CNPS, 2015); the CNDDB (2015) lists only 41 special-status plant species. Based on the altered nature of the subject parcel and surroundings, soil types, existing habitats, and geographic location, the potential for occurrence of all 61 of the target plant species can be ruled out entirely. A total of seven special-status plant species have been recorded from within a 3-mile radius of the project site. These include coyote ceanothus, Santa Clara Valley dudleya, smooth lessingia, arcuate bush-mallow, Hall's bush-mallow, woodland woollythreads, and most beautiful jewelflower. Ten special-status plant species have been recorded from within 5 miles of the project site. These species, along with their potential for occurrence at the project site, are summarized in Biological Resource Report (Attachment 2). None of these species is considered to have any potential for occurrence on-site.

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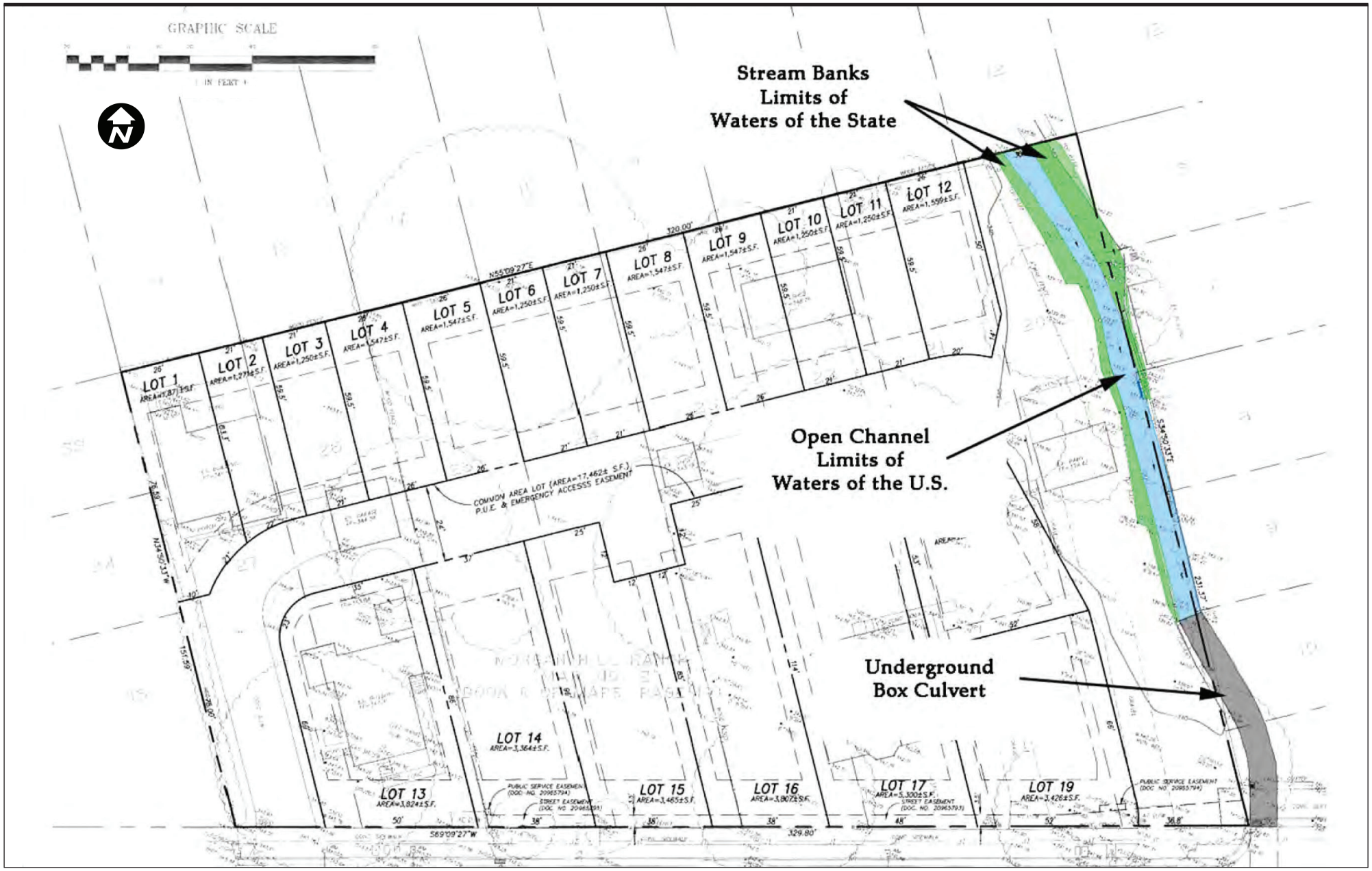
[9] Pursuant to §404 and 401 of the Clean Water Act, respectively.

[10] Pursuant to §1600 of the California Fish and Game Code

[11] CWA §401 and §404

[12] CFGC Division 2, Chapter 6, §§1600-1607

[13] Cal. Water Code §§13000-14920



Source: Wood Biological Consulting, Inc. (2015)

Views of Site Creek Channel

Figure 15

View of flood channel, looking upstream

View of flood channel at downstream (S) end, looking downstream

View of flood channel from left bank, looking upstream

View of flood channel from left bank, looking downstream

Source: Wood Biological Consulting, Inc. (2015)

Animal Species. Special-status animal species include listed as Endangered, Threatened, Rare, or as Candidates for listing under the FESA or CESA. Other species regarded as having special-status include special animals, as listed by the CDFW. Additional animal species receive protection under the Bald and Golden Eagle Protection Act (BGEPA)[14] and the Migratory Bird Treaty Act (MBTA)[15]. The CFGC provides specific language protecting birds and raptors[16], "fully protected birds"[17], "fully protected mammals"[18], "fully protected reptiles and amphibians"[19] and "fully protected fish".[20]

A total of 28 special-status animal species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the project site. Seven special-status animal species have been recorded from within a 3-mile radius of the project site. These include Opler's longhorn moth, California tiger salamander, burrowing owl, Pacific (western) pond turtle, bay checkerspot butterfly, Hom's micro-blind harvestman, and California red-legged frog. None of these species is considered to have any potential for occurrence on-site.

Based on the lack of suitable habitat on-site, geographic location, and the known range, the occurrence of 20 of the target species can be ruled out entirely. Suitable or marginally suitable habitat is present on-site for eight target special-status species; two of these, long-eared myotis and the Yuma myotis, are considered to possibly occur on-site while six are not expected on-site. Nonetheless, given the site's history of disturbance and relatively high levels of human activity, the potential for occurrence of these species on-site is considered low.

Long-eared Myotis: The long-eared myotis (*Myotis evotis*) is designated as a Special Animal by the CDFW and a Medium Priority species by the WBWG; it is also considered Sensitive by the BLM. The species has been assigned a global and state ranking of G5/S3 by the CNDDB; species assigned a ranking of S3 or lower are considered vulnerable in the state due to their restricted range, relatively few populations, recent and widespread declines, or other factors.

The range of the long-eared myotis reaches across western North America from southwestern Canada to Baja California, and eastward to the western Great Plains. It usually inhabits coniferous forests but is also known from semiarid shrublands, sagebrush, chaparral and agricultural areas. Individuals roost under exfoliating tree bark and in tree cavities, caves, mines, cliff crevices, and rocky outcrops, and occasionally in buildings and on the undersides of bridges. The long-eared myotis feeds on moths and small beetles found on foliage, tree trunks, rocks and the ground. The long-eared myotis is threatened by the closure of abandoned mines, recreational caving, some forest-management practices and impacts on cliff faces and rock outcrops.

The long-eared myotis has not been recorded from the immediate project vicinity. Only a single occurrence (Occ. #108) has been reported from within 5 miles of the project site. This record, reported in 2007, consisted of a single adult female and juvenile found in a structure east of the City of San Jose, approximately 15 miles north-northwest of the project site.

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[14] 16 USC 668, et seq.

[15] 16 U.S.C. 703-711

[16] §§3503 and 3503.5

[17] CFGC §3511

[18] CFGC §4700

[19] CFGC §5050

[20] CFGC §5515

Potentially suitable roosting habitat is present within the project site. While the potential for occurrence of the species on-site is considered to be low, marginally suitable roosting habitat for the long-eared myotis is present within the existing structures and the larger trees on-site. If the species is present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects pursuant if the species were found to be present.

Yuma Myotis: The Yuma myotis bat (*Myotis yumanensis)* is designated as a Special Animal by the CDFW and a Low-Medium Priority species by the Western Bat Working Group (WBWG); it is also considered Sensitive by the Bureau of Land Management (BLM). The species has been assigned a global and state ranking of G5/S4 by the CNDDB; species assigned a ranking of S4 or higher are generally considered not to be vulnerable in the state.

The Yuma myotis ranges throughout western North America from British Columbia, Canada to Mexico, and is ubiquitous throughout California. Typical habitat includes riparian corridors and edge habitat in forested canyons, but also arid shrublands, deserts and forests. They are colonial roosters and are typically found in manmade structures such as bridges or buildings, but will also use trees, caves, mines and old cliff swallow nests. The Yuma myotis bats form maternity colonies of several thousand and give birth from April through July depending on latitude. The species is threatened by the closure of abandoned mines without adequate surveys, some forest management practices, and disturbance of maternity roosts in caves and buildings. Because it frequently occurs in structures, it is also vulnerable to building demolition, remodeling, and pest control activities.

The Yuma myotis has not been recorded from the immediate project vicinity. The nearest record (Occ. #37) consists of two adult males and one adult female observed in 2002 beneath a bridge in a rural area located 8.8 miles to the northwest.

No typical riparian habitat is present on-site or in the project vicinity. However, potentially suitable roosting habitat is present within the project area, consisting of the existing structures and the larger trees on-site. The potential for occurrence of the species on-site is considered to be low; however, if the species is found to be present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects.

Nesting Raptors and Other Migratory Birds: In addition to the bird species considered to have special-status by the CDFW, numerous, common bird species receive protection under federal and state laws, e.g. the federal Migratory Bird Treaty Act of 1918 (MBTA)[21] and the Migratory Bird Treaty Reform Act of 2004 (MBTRA). In general, any activity that would directly or indirectly cause the destruction or abandonment of a nest actively being used for breeding or rearing of chicks of any covered bird species is illegal. Unoccupied nests, including old, abandoned nests as well as those recently vacated by fledglings, are not protected. A complete list of bird species covered under the MBTA/MBTRA is available from the USFWS; a list of bird species of conservation concern is available from the USFWS.

The California Department of Fish and Wildlife (CDFW) has jurisdiction over actions that may result in the disturbance or destruction of actively used nests or the unauthorized take of covered bird species. Under sections of the California Fish and Game Code (CFGC)[22], it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird covered under the MBTA/MBTRA, including a subsection of the Code indicating that it is unlawful to "take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird." This subsection makes it illegal to remove unoccupied, inactive, or abandoned nests of any bird of prey defined above without prior authorization by the CDFW.

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[21] 16 U.S.C. 703-711

[22] §§3503, and 3513

The project site supports abundant potential nesting sites for birds protected under federal and state law. Suitable habitat includes tree canopies and cavities, dense foliage, and abandoned and occupied structures. Two old nests of western scrub-jay were detected during the site survey. Based on the amount of vegetative cover on-site, there is a high potential for the utilization of these habitat for breeding by such birds. Site clearing activities could result in a take of migratory birds protected under the MBTA/MBTRA and the CFGC. Disturbance during the nesting season could result in the potential nest abandonment and mortality of young, which would be a significant adverse effect pursuant to CEQA.

As a Standard Condition of Approval, prior to the removal or significant pruning of any trees, they should be inspected by a qualified biologist for the presence of raptor nests. This is required regardless of season. If a suspected raptor nest is discovered, the CDFW shall be notified. Raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW. If clearing and grubbing, and tree removal or pruning are to be conducted outside of the breeding season (i.e., September 1 through January 31), no pre-construction surveys for actively nesting migratory birds (passerines or other non-raptor species) is necessary. Pre-construction surveys for nesting birds shall be conducted by a qualified biologist not more than two weeks prior to site disturbance during the breeding season (February 1 through August 31). If active nests of raptors and other migratory birds are not detected within approximately 250 feet of the project site, no further mitigation is required. If nesting raptors or other migratory birds are detected on or adjacent to the site during the survey, a suitable construction-free buffer should be established around all active nests. The dimensions of the buffer (up to 250 feet) should be determined at that time and may vary depending on location and species. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents.

Special-status Species Potentially Occurring on the Project Site: The Biological Resource Report includes a discussion of six special-status animal species that could find suitable or marginally suitable habitat on the project site, but would not be expected to use the site. These include: Townsend's western big-eared bat (*Corynorhinus townsendii)*, the white-tailed kite (*Elanus leucurus*), the hoary bat (*Lasiurus cinereus*), Pacific pond turtle (*Emys marmorata)*, the pallid bat (*Antrozous pallidus)*, and the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens)*. The Biological Resource Report provides detailed information for each of these species' critical habitat, habitat suitability and occurrence data, and potential project-related effects if the species were to occur on the site prior to project development. Although these species were not found on the site nor are expected to use the subject property, potential impacts that could affect each of these species extend to: 1) disturbance of nesting and/or roosting activities; 2) destruction of active nests; and 3) direct mortality, injury and/or harassment of individuals by site preparation and/or construction activities on the site. These potential impacts would be significant adverse effects of the project and require appropriate mitigation measures, as described below.

4e. Tree and Biological Protection Ordinances

The City of Morgan Hill recognizes the importance of trees to the community and has established policies and guidelines for the preservation of native plants in the City's Open Space and Conservation Element of the General Plan. Specifically, Goal 6 and Policy 6c of the Element state:

- *Goal 6. Protection of native plants and animals*
- *6c. Preserve outstanding natural features, such as the skyline of a prominent hill, rock outcroppings, and native and/or historically significant trees.*

These guidelines are implemented through Chapter 12.32 of the City Municipal Code, Restrictions on Removal of Significant Trees. Section 12.32.020 of the Code defines the type of plant that qualifies as a

"tree" and the legal protection afforded to such resources. The section establishes the following definition:

> 12.32.020 - Definitions. G. "Tree" means any live woody plant rising above the ground with a single stem or trunk of a circumference of forty inches or more for nonindigenous species and eighteen inches or more for indigenous species measured at four and one-half feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes. All commercial tree farms, *nonindigenous tree species in residential zones and orchards (including individual fruit trees) are exempted from the definition of tree for the purpose of this chapter*. Trees of any size within the public right-of-way shall constitute a tree for the purposes of this subsection.

The project arborist has identified five significant trees on the project site for removal: one coastal redwood, one valley oak, two coast live oaks, and one deodar cedar. The arborist recommends the removal of the dead redwood, and the valley oak is damaged and a safety hazard. The removal of the two coast live oaks would allow the development of proposed residences. The *Cedrus deodara* tree would pose a potential safety hazard for one of the new homes proposed on the site; however, based upon the criteria specified by the City's Municipal Code above, the nonindigenous cedar is exempt from the legal definition of tree and would not be subject to the legal protection of Section 12.32.020 of the City Code. The two coast live oaks would qualify for protection under Chapter 12.32 of the City's Municipal Code and replacement planting required at a one-to-one (1:1). The arborist's report recommends the removal of this tree and implementation of a detailed Tree Protection Plan as a condition of project approval.

It should be noted that the proposed project plans have been revised since the preparation of the arborist's report in 2013. Current project plans have a reduced number of residential units and a re-designed access drive right-of-way that provides for an open space buffer area (Lot 18) adjoining the Little Llagas Creek drainage channel on the property. The trees within the proposed open space buffer area would be retained to ensure that the overall loss of existing canopy cover on the project site is minimized during project implementation.

4f. Habitat Conservation Plans

The Santa Clara Valley Habitat Plan (SCVHP) was implemented in 2013. Six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority; Santa Clara Valley Water District, and the Cities of San Jose, Gilroy, and Morgan Hill) and two wildlife agencies (the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service) prepared and adopted this multispecies habitat conservation plan, which primarily covers southern Santa Clara County, as well as the City of San Jose with the exception of the bayland areas. The SCVHP addresses conservation of listed species and species that are likely to become listed during the plan's 50-year permit term. The eighteen covered species include nine plants and nine animals, including the western burrowing owl and the California tiger salamander. In general, the SCVHP is a fee-based program aimed at providing for the regional conservation of these species.

The project site is within the SCVHP permit area, and urban development is a "Covered Activity" under the plan. Land cover in the Project site is classified as Urban – Suburban. No SCVHP land cover fees apply to the Project given its location in a "No Land Cover Fee" zone.

Mitigation Measures – Biological Resources (BIO)

The project's construction-related activities, including demolition of structures, site preparation, and grading could have potentially significant effects on special-status animal species that could be expected on the project site or using suitable habitat on-site. Implementation of the following measures would reduce these potentially significant effects to less-than-significant levels:

BIO-1: ***Special-Status Bats****. Prior to the removal of mature trees or the demolition or renovation of structures, the measures outlined below should be performed.*

a. A pre-construction survey should be conducted by a qualified biologist to identify suitable bat roosting sites.

b. Any trees or structures determined to support or potentially support maternal roosting sites may only be removed or demolished after coordination with the CDFW and/or the USFWS. Passive exclusion of roosting bats will be required and this may only be performed during the non-breeding season (i.e., between October 1 and March 30).

c. Any trees or structures determined to provide suitable bat day or night roosting sites should be identified and marked on site plans. Such roosting sites include snags, rotten stumps, and decadent trees with broken limbs, exfoliating bark, cavities, openings leading to interior portions of any structures. If no suitable roost sites or evidence of bat roosting are identified, impact minimization measures are not warranted. If suitable roosting sites or evidence of bat roosting are identified, the following measures should be conducted:

i. A qualified biologist should survey suitable roost sites immediately prior to the removal or significant pruning of any of the larger trees, or demolition or significant renovation of any structures.

ii. If the project biologist identifies suitable day or night roost sites or evidence of bat occupation, the following steps should be followed to discourage use of the sites by bats and to ensure that any bats present are able to safely relocate.

For trees:

- *Tree limbs smaller than 7.6 cm (3 in) in diameter should be removed and any loose bark should be peeled away.*
- *Any competing limbs that provide shelter around the potential roost site should be removed to create as open of an area as possible.*
- *The tree should then be alone to allow any bats using the tree/snag to find another roost during their nocturnal activity period.*
- *The project biologist should re-survey the trees a second time 48 hours after trimming.*
- *If no bats are present, work may proceed.*
- *If bats remain on-site, additional measures would be prescribed by the biologist.*

For structures:

- *Depending on the location of potential roost sites and the nature of bat occupation, partial dismantling of a suspect structure may be performed to discourage use by bats. Partial dismantling may consist of the removal of siding, roof sections, and roof gables to permit air flow and exposure to sunlight. This work should be performed under the supervision and direction of a qualified biologist.*
- *The project biologist should re-survey the structures a second time 48 hours after performance of the partial dismantling work.*
- *If no bats are present, work may proceed.*
- *If bats remain on-site, additional measures would be prescribed by the biologist.*

BIO-2: Special-Status Animal Species with Suitable Site Habitat*. Prior to site preparation for project construction, including the removal of mature trees, demolition of structures, and grading, the measures outlined below should be performed.*

For Pacific Pond Turtle:

a. A pre-construction survey shall be conducted in the work area for the presence of pond turtles.

b. The project plans shall include the installation of wildlife exclusion fencing to prevent pond turtles from entering the work area and thereby protected from harm.

c. If a pond turtle is detected on-site, it may only be relocated by a qualified biologist. The biologist should make a record of the animal(s) and report his/her observations to the CDFW and the CNDDB.

For San Francisco Dusky-footed Woodrat:

d. A pre-construction wildlife survey should be performed at the project site to search for woodrat nests. If no nests are detected, no further avoidance measures are warranted.

e. If a woodrat nest is detected, it should be mapped in relation to the proposed limits of work. If the nest can be avoided, it should be isolated from the work zone by installation of wildlife exclusion fencing (WEF).

f. If a woodrat nest is in the work zone and it cannot be avoided, site clearing should be performed during the non-breeding season (e.g., September 1 through November 30). During the non-breeding season, the nest should be disassembled by hand and the nest materials (e.g., sticks) removed and disposed of off-site. Any adult animals will be passively relocated into the adjacent woodland habitat. This work should be performed by a qualified biologist in coordination with the CDFW.

g. If site clearing must proceed during the breeding season, it will be necessary to determine whether or not the nest is currently occupied. This may be done by direct observation over the course of at least two evenings no more than 48 hours prior to nest disassembly. Direct observation may consist of installation of wildlife cameras at the nest or by a biologist on the ground. If no animals are observed, the nest may be disassembled by hand. If, during the process of disassembling the nest, live animals are encountered, nest materials should be replaced on top of the nest and the effort abandoned. Nest may not be disassembled if young woodrats are present. Construction must then be postponed until the end of the breeding season.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
5. Cultural Resources - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

The evaluation of historic resources on the project site is based upon a review of the site dwellings prepared by Carey & Co., Inc.[23](C&C), architectural historians, and information presented by a Phase I Environmental Site Assessment[24] prepared by *PHASE ONE*, INC. In addition, Holman & Associates conducted an archaeological literature review for the project site in March 2015. These studies are available at the Morgan Hill Community Development Department, 17500 Peak Avenue, Morgan Hill, CA and on the City's web site.

5a. Historical Resources

The subject property consists of four parcels (APNs 767-08-035 through 767-08-038) that have been historically used for residential and agricultural purposes. One of the parcels addressed 45 West Dunne Avenue (APN 767-08-036) is developed with a single-family residence. A second parcel (APN 767-08-038) is developed with two residential dwellings, while APNs 767-08-037 and 767-08-035 are undeveloped and contain outbuildings on either side of the 45 West Dunne Avenue residence, respectively. Overall, the proposed project site includes three residences, three garages, one barn, and two sheds. The majority of the project site, including the 45 and 59 West Dunne Avenue residential parcels, is covered with native and ornamental landscape trees, and shrubs located along the property perimeter and adjoining West Dunne Avenue frontage at the houses.

It is unclear when two of the residences (55 and 59 West Dunne Avenue) were built; aerial photos of the project site indicate that the residences were developed on this parcel between 1948 and 1968. The residence at 45 West Dunne Avenue has been the subject of previous evaluation as a historic resource and the results of those assessments as well as the Carey & Co. evaluation are discussed below. The proposed project would preserve the residence at 45 West Dunne Avenue, demolish the two structures at 55 and 59 West Dunne Avenue, demolish various outbuildings such as a barn, garages, and sheds on the site, remove the remnant orchard and landscape trees, and subdivide the property to accommodate the development of 16 new single-family homes on the site, for a total of 17 residences.

Morgan Hill Historic Preservation Program. In 2006, the City of Morgan Hill compiled a comprehensive overview of the community's history to provide historic context and an assessment of potentially historic resources in the city.[25] Historic context statements are important tools for the preservation planning process. The Historic Context Statement is meant to provide the City of Morgan Hill with a means to evaluate potential resources for their associative, architectural, or historic value. Such a tool provides the city with a baseline reference for updating its local historic preservation ordinance and conducting a survey to inventory historic properties within the City boundaries as well as for developing future preservation initiatives and incentives.

The 2006 Historic Context Statement includes an inventory of historic resources in the city as well as a historic timeline for development community. Appendix B of the Statement provides a list of Morgan

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[23] Carey & Co., Inc., 2015. *Historic Resource Evaluation for 45 West Dunne Avenue, Morgan Hill, California*. November 18.

[24] PHASE ONE, Inc., 2012. *Phase I Environmental Site Assessment for 25, 45, 55, and 59 West Dunne Avenue, Morgan Hill, California, 95037*. June.

[25] City of Morgan Hill, 2006. Historic Context Statement for the City of Morgan Hill. October.

Hill's historic properties; none of the project site's residences are included on the City's list of historic properties.

Residence at 45 West Dunne Avenue. The property is listed on the Morgan Hill Historic Resources Inventory as "Adopted Survey List (Residence)" which means that the resource was determined to be significant on a local level, but not formally designated on the local register.

As part of the city's historic preservation program, CIRCA: Historic Property Development, a consulting firm contracted to the City, prepared State Department of Parks and Recreation (DPR) 523 Primary Record and Building, Structure and Object Record forms for the property in December 2006. The form includes a detailed description (quoted in the following section) followed by a discussion of the property's historic significance. The American Folk/Bungalow-style single-family house was built ca. 1900. CIRCA stated that the property did not appear to be eligible for listing on the National Register of Historic Places or the California Register of Historical Resources, but was potentially significant for local listing under the theme "Early Development" for a period of significance from ca. 1900 to 1957.

A July 2009 report "West Dunne Avenue Historical Resources Survey & Impacts Report" by CIRCA lists 45 West Dunne Avenue as one of the resurveyed 19 properties along West Dunne Avenue to confirm previous findings. The report stated that the subject property "appears to be individually eligible for local listing or designation" for reflecting early downtown residential development in Morgan Hill.

In addition to the main house, site features and accessory buildings are called out in the Primary Record: "The property is in good condition and also features mature trees and plantings and several period accessory buildings on a large lot." However, there is no further analysis of the accessory buildings' relationship to the main house, their function/use, dates of construction and contribution to the historic significance of the property.

The C&C historians conducted a site visit on October 2, 2015 to evaluate the existing conditions, historic features, and architectural significance of the property. Additional research was completed including consultation of block books, accessible building permits, Sanborn Fire Insurance maps, the Morgan Hill Historical Society, Morgan Hill Library, the San Jose Public Library California Room, and San Jose City Directories. The assessment process and a detailed discussion of the buildings on the project site are included in the C&C report. The evaluation extends to the historic context of the site, history of the property, architect and builder, owner/occupant information, application of state significance criteria, and evaluation of building and site integrity.

The C&C report indicates that the house at 45 West Dunne Avenue was determined to be significant on a local level and listed on the Morgan Hill Historic Resources Inventory. The barn at 45 West Dunne Avenue appears eligible for listing in the City of Morgan Hill register as a part of the residential property. The barn, which is over 89 years old, complements the traditional rural atmosphere of Morgan Hill and the early residential development context that the main house was associated with. The structure maintains its integrity.

The garage and two sheds at 45 West Dunne Avenue do not appear eligible for individual listing in the California Register of Historical Resources. No historic events, or individuals of particular significance are associated with the structures. The buildings also fail to be distinctive examples of a style, the work of a master, or architecturally significant in any other respect. There is no indication that the structures have the potential to yield information important to the prehistory or history of the local area, California, or the nation.

The new construction proposed by the project would not result in effects that would impair the dwelling's eligibility for listing in the local register since the building would be preserved and the height, materials, and use of the proposed buildings are compatible with the residential character of the area. The proposed project would also retain the barn at 45 West Dunne Avenue, which contributes to the significance of the

main dwelling listed on the local register. The barn would neither be demolished nor altered from its current condition. Therefore, the proposed project would result in a less than significant impact on historical resources determined to be locally significant.

5b, 5d. Archaeological Resources and Human Remains

The results of the literature review indicated that there were no recorded historic and/or prehistoric archaeological sites inside the project borders or within 1,000 feet of the site; there have been no formal archaeological studies of any of the parcels. The nearest archaeological study was done in 1973 of the LIagas Creek Project, a linear study which included the creek and its riparian zone; no archaeological resources were discovered within a quarter mile of the current project area. The parcel is considered to have a low to moderate potential for the discovery of prehistoric archaeological resources.

The proposed project would be subject to the provisions of City of Morgan Hill Municipal Code Section 18.75.110. This section specifies that if a project is located within or adjacent to a known archaeological site, then a CEQA review of the project shall consider potentially significant impacts on archaeological resources and identify appropriate mitigation measures to be imposed as conditions of approval in addition to the standard conditions identified in subsection B of Section 18.75.110. Subsection B stipulates that if the project is not located within or adjacent to a known archaeological site, then the project applicant has the option to complete an archaeological survey of the property to determine the appropriate mitigation to be used as conditions of project approval or comply with the standard conditions of approval which shall be conclusively deemed to reduce potentially significant impacts to less than significant levels.

The City will require monitoring of ground-disturbing activities for archaeological resources and the reporting of appropriate treatment and disposition of such resources that may be uncovered. In the event that undocumented human remains or unknown significant historic or archaeological resources are discovered, subsection B.2. of Section 18.75.110 provides a specific protocol for the treatment of the uncovered human remains and/or resources. The protocol entails the process of identifying the human remains and the contact of appropriate parties such as the Native American Heritage Commission and the Amah Mutsun Tribal Band to determine Most Likely Descendant for further consultation on the disposition of the remains. As noted in the City's ordinance, the completion of the standard conditions of approval would reduce potentially significant impacts on archaeological resources to a less than significant level.

5c. Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. Fossil discoveries not only provide a historic record of past plant and animal life, but may assist geologists in dating rock formations. A review of records maintained by the University of California Museum of Paleontology in Berkeley indicates that the closest paleontological resources recorded in Santa Clara County occur approximately six miles north of Morgan Hill. These resources were discovered in geologic strata dating from the Pleistocene epoch of the Quaternary Period (2.6 million to 11,700 years ago).

Geologic mapping for the proposed project indicates the site is underlain by Pleistocene alluvial fan deposits. These deposits are similar in age to those containing the recorded paleontological resources; however, the site of the discovered paleontological specimen was in the hills north of Morgan Hill. While the potential for encountering paleontological resources at the project site is considered to be low due to the distance to the closest resource, there remains the potential to unearth unknown paleontological resources at the project site. In the event that such resources are uncovered, the standard conditions of

approval for the mitigation of archaeological resource discovery will be applied to paleontological resources. Consequently, the project impacts on paleontological resources would be less than significant.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
6. Geology and Soils - Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Geological mapping for the project area indicates that the site is underlain by alluvial gravel, sand, and clay.[26] Soils on-site are mapped as belonging to the Keefers series. Soils were not specifically sampled on-site as part of this investigation and have not been confirmed. However, based on topographic position and vegetation characteristics, the characterizations of the soil types are consistent of site conditions. The Keefers series consists of well-drained clay loams that are underlain by alluvium from basic igneous rock. These soils lie on old fans with slopes ranging from 0 to 9 percent and at elevations from 61-244 m (200-800 feet) above MSL. Where not cultivated, the natural vegetation on these soils consists of annual grasses, forbs and scattered oaks.

Soils on a majority of the parcel are mapped as Keefers clay loam, 0 to 2 percent slopes; soils in the northwestern corner of the parcel are mapped as Keefers clay loam, 2 to 9 percent slopes[27]. For these units, runoff is slow to very slow, permeability is slow to ponding, and the available water capacity is 17-

[26] Diblee, T.W. and Minch, J.A., 2005. *Geologic Map of the Morgan Hill Quadrangle, Santa Clara County, California. Dibblee Foundation Map DF-159.* Available online at http://ngmdb.usgs.gov/Prodesc/proddesc_71773.htm

[27] U.S. Department of Agriculture (USDA), Custom Soil Resource Report for Contra Costa County, California: Oak Creek Subdivision. Natural Resource Conservation Service; Web Soil Survey, available online at http://websoilsurvey.nrcs.usda.gov/app/. Report printed March 11, 2015.

20 cm (6.5-8 inches). The hazard of erosion is none to slight. Soils in the Keefers series are associated with the Cropley and Los Robles soils. While neither of the Keefer soils units is considered a hydric soil type, unnamed hydric inclusions may be associated with upland seeps.[28]

6a. Seismic Hazards and Landslides

The proposed project will require the preparation of a geotechnical investigation to ensure that the project design adequately addresses seismic hazards and soils constraints to site development. As a Standard Condition of Approval, the proposed project design will need to demonstrate compliance with the site-specific engineering recommendations presented in the geotechnical investigation for the project, subject to approval by the City.

Fault Rupture. The project site is not located within an Alquist-Priolo Earthquake Fault Zone[29] and based on mapping of geologic hazards by Santa Clara County, the proposed project site is not crossed by any active fault zones.[30] Therefore, impacts related to the potential for fault rupture would be less than significant.

Groundshaking. Ground shaking is the cause of most damage during earthquakes and an earthquake of moderate to high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. The three faults that would most likely produce strong groundshaking at the project site include the San Andreas Fault located about 15 miles to the southwest, the Calaveras Fault located approximately 6.5 miles to the northeast, and the Sargent Fault located approximately 12 miles to the southwest.

The Association of Bay Area Governments has estimated the degree of groundshaking that could occur in the San Francisco Bay area on a regional basis and estimates that the project area would experience very strong ground shaking in the event of an earthquake on one of the regional faults.[31] To resist seismic forces, the proposed residences would need to be constructed using the appropriate seismic design criteria specified in the California Building Code (CBC). The criteria are determined on the basis of soil type, the magnitude of the controlling seismic event, slip rate of the nearest fault, and distance to the nearest active fault. The structural design for the proposed homes would be based on Chapter 16 of the 2013 CBC.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead and live loads. Therefore, structures designed in accordance with the CBC should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. While conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake, it is reasonable to expect that a well-designed and well-constructed structure would not collapse or cause loss of life in a major earthquake.

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[28] USDA, *Hydric Soils, Eastern Santa Clara Area, California*. Natural Resource Conservation Service; Web Soil Survey, available online at http://websoilsurvey.nrcs.usda.gov/app/. Report printed March 24. 2015.

[29] California Division of Mines and Geology, 1982. State of California Special Studies Zones, Morgan Hill, Revised Official Map. January 1. Available online at http://gmw.consrv.ca.gov/shmp/download/quad/MORGAN_HILL/maps/MORGANHILL.PDF.

[30] The County of Santa Clara, 2012. Santa Clara County Geologic Hazard Zones. October 26. Accessed at http://www.sccgov.org/sites/planning/GIS/GeoHazardZones/Documents/GeohazardMapsATLAS2.pdf.

[31] Association of Bay Area Governments, 2014. Earthquake and Hazards Program, Santa Clara County Earthquake Hazard. Accessed at http://quake.abag.ca.gov/earthquakes/santaclara/ on January 6, 2014.

As part of its review, the City of Morgan Hill Community Development Agency Building Division would review the planned design to confirm compliance with the CBC. Because compliance with the CBC, subject to approval as part of the building permit review process, should ensure that the buildings constructed under the proposed project do not collapse or cause loss of life in a major earthquake, impacts related to groundshaking would be less than significant.

Liquefaction. Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary, but essentially total, loss of shear strength because of pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. The project site is not located within a Santa Clara County Liquefaction Hazard Zone[32] or within a State of California Seismic Hazard Zone for liquefaction potential.[33] In addition, the geotechnical report for the proposed project concludes that the potential for liquefaction is low. Therefore, impacts related to liquefaction and related phenomena would be less than significant.

Landslides. The project site is not located within a Santa Clara County Landslide Hazard Zone[34] or within a State of California Seismic Hazard Zone for landslide potential.[35] Therefore, impacts related to landslides, including seismically induced landslides, would be less than significant.

6b. Erosion Hazards

Without proper soil stabilization controls, construction activities such as building demolition, excavation, backfilling, and grading can increase the potential for soil loss and erosion by wind and stormwater runoff through the removal of stabilizing vegetation and exposure of areas of loose soil. The Preliminary Grading Plan for the project is shown in **Figure 16**. The potential for soil erosion exists during the construction period when the existing cover has been removed and before new vegetation or hardscape is installed. However, as discussed in Section 9, Hydrology and Water Quality, in accordance with Chapter 13.30 of the City of Morgan Hill Municipal Code (Urban Storm Water Quality Management and Discharge Control), the project applicant would be required to comply with the requirements of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit) to control erosion during construction. In accordance with this permit, the project sponsor would be required to submit a Notice of Intent and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the Construction General Stormwater Permit. The SWPPP would specify the use of best management practices to restrict soil erosion and the project applicant would also implement erosion and sedimentation controls in accordance with Chapter 13.30 of the municipal code. With implementation of these regulatory requirements, geologic impacts related to erosion during construction would be less than significant.

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[32] The County of Santa Clara, 2012. Santa Clara County Geologic Hazard Zones. October 26. Accessed at http://www.sccgov.org/sites/planning/GIS/GeoHazardZones/Documents/GeohazardMapsATLAS2.pdf65tg

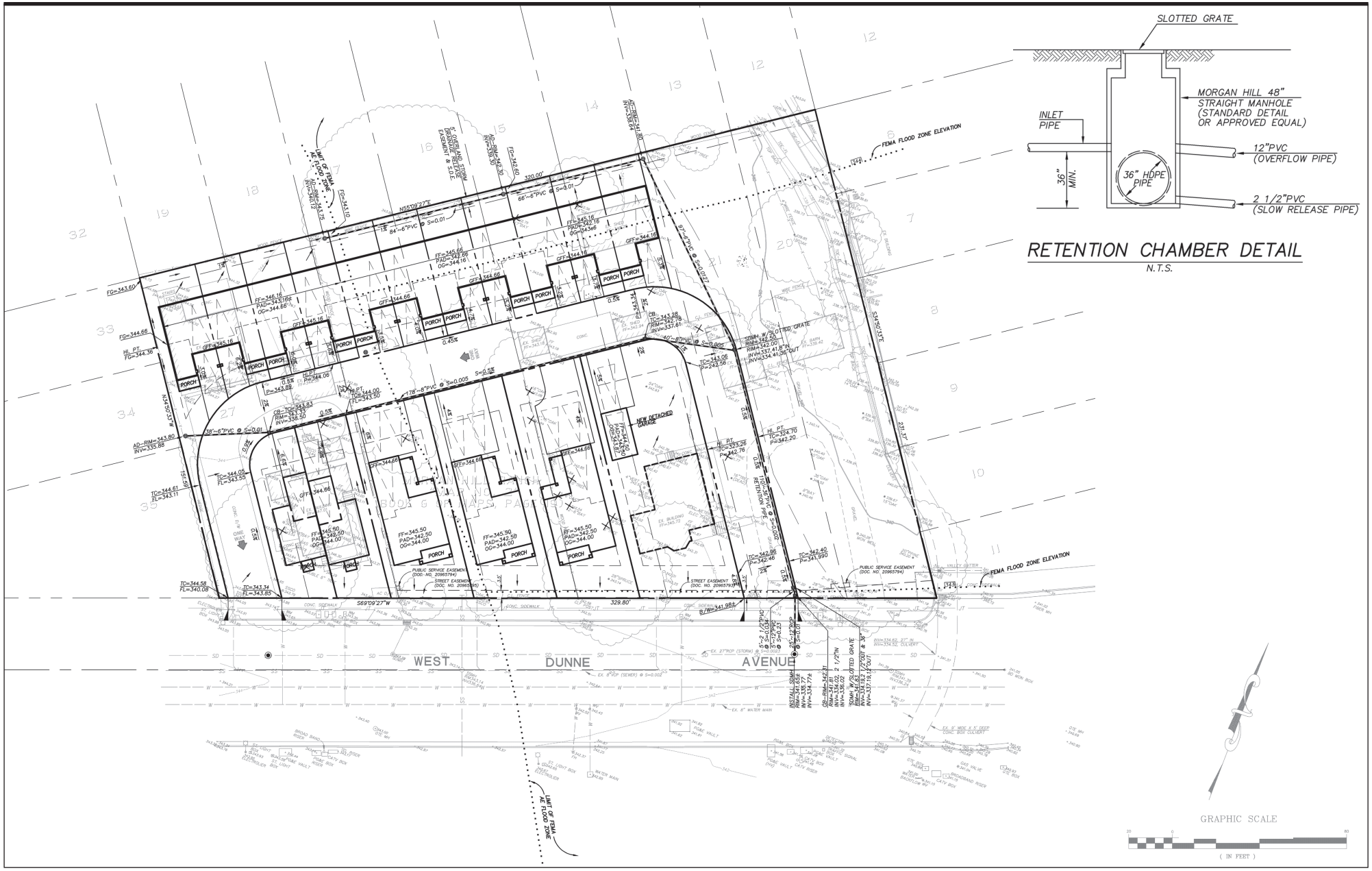
[33] California Geological Survey, 2004. *State of California Seismic Hazard Zones, Morgan Hill Quadrangle, Official Map*. October 19.Available online at http://gmw.consrv.ca.gov/shmp/download/quad/MORGAN_HILL/maps/ozn_morgh.pdf.

[34] The County of Santa Clara, 2012. Santa Clara County Geologic Hazard Zones. October 26. Accessed at http://www.sccgov.org/sites/planning/GIS/GeoHazardZones/Documents/GeohazardMapsATLAS2.pdf65tg

[35] California Geological Survey, 2004. *State of California Seismic Hazard Zones, Morgan Hill Quadrangle, Official Map*. October 19.Available online at http://gmw.consrv.ca.gov/shmp/download/quad/MORGAN_HILL/maps/ozn_morgh.pdf.

Conceptual Grading Plan

Figure 16



West Dunne Avenue - Gera Residential Subdivision

Source: Giuliani and Kull, Inc. (2015)

6c, 6d, 6e. Geologic Stability and Soil Engineering Constraints

Unstable Geologic Units or Soil. The project site is not located within a Santa Clara County Compressible Soil or Landslide Hazard Zone[36] indicating that neither of these potential hazards would affect the project site. Further, the project would not include construction of basements or other subsurface structures that would involve substantial excavations that could become unstable. Therefore, this impact would be less than significant.

Expansive Soil. As discussed above, the geologic materials beneath the site consist of Keefers series well-drained clay loams that are underlain by alluvium from basic igneous rock. The plasticity index for Keefers soils is expected to range from approximately 12 to 15; soils with a plasticity index over 30 usually have high inherent swelling capacity.[37] Because these soils do not contain a substantial amount of clay, they would not be expansive, and impacts related to construction on expansive soils would be less than significant. In the event that the site geotechnical investigation encounters expansive soils on the subject property, the City will require the geotechnical study to provide specific engineering and design measures that address potentially expansive soil conditions on the site.

Soils Incapable of Supporting Septic Tanks or Alternative Wastewater Disposal Systems. The project site is located within the Morgan Hill city limits and the area is served by the community's sewer system. No septic tanks or alternative wastewater disposal systems would be required for the project. Rather, connection to the sewer system would eliminate the use of septic systems currently at the site. Therefore, there would be no impact related to having soils capable of supporting the use of septic tanks or alternative waste disposal systems.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
7. Greenhouse Gases - Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

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[36] The County of Santa Clara, 2012. Santa Clara County Geologic Hazard Zones. October 26. Accessed at http://www.sccgov.org/sites/planning/GIS/GeoHazardZones/Documents/GeohazardMapsATLAS2.pdf65tg

[37] Rogers. J.D. et al, 1993. *Damage to Foundations from Expansive Soils*.

Significance Thresholds and Criteria. Exercising its own discretion as lead agency and similar to other San Francisco Bay Area jurisdictions, City staff has decided to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD.[38] The BAAQMD *Options and Justification Report* establishes thresholds based on substantial evidence and are consistent with the thresholds outlined within the BAAQMD's 2011 CEQA Air Quality Guidelines.[39] Although BAAQMD failed to comply with CEQA before adopting its CEQA Guidelines, City staff believes that these recommendations still represent the best available science on the subject of what constitutes significant GHG effects on climate change and they are as follows:

- Compliance with a Qualified Climate Action Plan or
- Meet one of the following thresholds:
  - 1,100 MT CO_2e per year; or
  - 6.7 MT CO_2e per capita per year (residential) / 4.6 MT CO_2e per service population per year (mixed use)

For purposes of this report, project compliance with the 1,100 MT CO_2e/year threshold is used as the primary basis to determine significance.

7a. Greenhouse Gas (GHG) Emissions

Short-term GHG emissions would be generated by project-related construction activities. In addition, project implementation would also contribute to long-term increases in greenhouse gases (GHGs) from direct sources (traffic increases and minor secondary fuel combustion emissions from space heating). Development occurring as a result of the proposed project would also result in other indirect operational increases in GHG emissions as a result of electricity generation to meet project-related increases in energy demand. Electricity generation in California is mainly from natural gas-fired power plants. However, since California imports about 20 to 25 percent of its total electricity (mainly from the northwestern and southwestern states), GHG emissions associated with electricity generation could also occur outside of California. Space or water heating, water delivery, wastewater processing and solid waste disposal also generate GHG emissions.

The CalEEMod 2011.1.1 computer model was used to calculate GHG emissions that would be generated by the construction and operation of proposed residences, and results are presented in **Table 6**. As indicated in this table, project construction would generate up to approximately 221 metric tons of CO_2-equivalents (MT CO_2e) per year.[40] The BAAQMD does not have a quantitative significance threshold for construction-related GHG emissions, but the project's estimated construction-related GHG emissions are expected to have a less-than-significant impact on global climate change. For comparison purposes, this emissions rate is well below this report's operational significance threshold of 1,100 metric tons (MT) of CO_2e per year, which would be an indication that the project's construction-related GHG emissions would

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[38] Bay Area Air Quality Management District, 2009. Revised Draft Options and Justification Report. October. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.

[39] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. Updated May 2011 and May 2012. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.

[40] Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents" or CO_2e, which present a weighted average based on each gas's heat absorption (or "global warming") potential. When CO_2 and non-CO_2 GHG emissions are considered together, they are referenced as CO_2e, which add approximately 0.9 percent to CO_2 emissions from diesel equipment exhaust (California Climate Action Registry, *General Reporting Protocol, Version 3.1,* January 2009. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html. Accessed on November 20, 2015). See Table 1 for other construction assumptions.

TABLE 6

PROJECT-RELATED OPERATIONAL GHG EMISSIONS

GHG Source	Project MT CO_2e/year
Construction Emissions	
- 2016	221.1
Operational Emissions	
- Area	1.0
- Energy	47.4
- Mobile Sources	116.6
- Waste	5.2
- Water	3.8
Total	**174.0**
CEQA Significance Threshold	<1,100 MT CO_2e

SOURCE: CalEEMod Output (see Attachment 1)

be less than significant. The proposed project would also be subject to the existing CARB regulation (Title 13 of the California Code of Regulations, Section 2485), which limits idling of diesel-fueled commercial motor vehicles, and compliance with this regulation would further reduce GHG emissions associated with project construction vehicles (compliance with idling limits is required under Mitigation Measure AQ-1 in Section 3, Air Quality). The BAAQMD also encourages implementation of construction-related GHG reduction strategies where feasible, such as: using alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment such that these vehicles/equipment comprise at least 15 percent of the fleet; using local building materials such that these materials comprise at least 10 percent of all construction materials; and recycling or reusing at least 50 percent of construction waste or demolition materials. None of these measures is specifically proposed as part of the project.

Project operation is estimated to generate approximately 174 MT CO_2e per year. Such an increase would not exceed this report's significance threshold of 1,100 MT CO_2e per year. Therefore, the project's operational GHG emissions would be less than significant.

7b. Greenhouse Gas Reduction Plans, Policies, and Regulations

The City of Morgan Hill is currently preparing a Climate Action Plan, but does not currently have an adopted CAP. However, California has passed a number of bills related to GHG emissions and the Governor has signed at least three executive orders regarding greenhouse gases. The Governor's Office of Planning and Research has not yet established CEQA significance thresholds for GHG emissions. GHG statutes and executive orders (EO) include EO S-1-07, EO S-3-05, EO S-13-08, EO S-14-08, EO S-20-04, EO S-21-09, AB 32, AB 341, AB 1493, AB 3018, SB 97, SB375, SB 1078 and 107, SB 1368, and SB X12. AB 32 establishes regulatory, reporting, and market mechanisms to reduced statewide GHG emissions to 1990 levels by 2020. Pursuant to this requirement, the California Air Resources Board (CARB) adopted its Scoping Plan, which contains the main strategies to achieve required reductions by 2020. As indicated above, the project's construction-related and operational GHG emissions would not exceed this report's significance threshold of 1,100 MT. This threshold is based on the BAAQMD's 2011 CEQA Air Quality Guidelines, which in turn, relates to AB 32 GHG reduction goals. Therefore, the project's GHG emissions would not conflict with plans and policies adopted for the purpose of reducing GHG emissions, a less-than-significant impact.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
8. Hazards and Hazardous Materials - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

8a. Routine Transport, Use, or Disposal of Hazardous Materials

Development of a new residential use at the project site would result in an increase in the generation of household hazardous wastes that are typical of any residential area. Common household hazardous wastes such as paint, pesticides, used oil and antifreeze, could result in direct or indirect effects on human health and the environment if not appropriately handled and disposed of. In addition to water quality impacts from stormwater runoff, other potential impacts such as direct human contact with hazardous materials could result from improper use or disposal of hazardous household chemicals.

Although Morgan Hill residents can legally dispose of household hazardous wastes under the County of Santa Clara Household Hazardous Waste program, the project's impacts related to the generation and disposal of hazardous waste would be potentially significant because not all residents are knowledgeable in the identification of hazardous wastes and appropriate disposal requirements. This impact would be reduced to less than significant with implementation of Mitigation Measure HAZ-1, Buyer Education Program for Household Hazardous Waste, which requires implementation of a buyer education program to educate residents about the identification of household hazardous wastes, environmental hazards associated with mishandling of the wastes, appropriate disposal methods, and how to make an appointment for disposal. Impacts related to the routine transport of household hazardous materials would

be less than significant because the materials are commercially packaged for retail sale, and transport of these materials is well regulated by state and federal regulations.

8b, 8d. Release of or Exposure to Hazardous Materials

A Phase I Environmental Site Assessment (Phase I ESA) was completed for the project site by PHASE ONE INC. in June, 2012.[41] The ESA is available for public review at the City's Community Development Department, located at 17575 Peak Avenue. The following impact discussion summarizes the findings of the Phase I ESA regarding past site uses and the use of hazardous materials at the project site to evaluate the potential for hazardous materials, hazardous building materials (such as lead-based paint and asbestos containing materials), and soil or groundwater contamination to be present. The ESA included a site reconnaissance and an interview with the property owner as well as review of regulatory databases, local agency files specific to the site, and historical documentation (including aerial photographs, topographic maps, and City Directories).[42]

Site History and Description. The proposed project site includes four parcels properties located at 35, 45, 55, and 59 West Dunne Avenue. The Phase I ESA provides an overview of the site history and use. In brief, the historic uses of the subject property included residences and orchards. The 45 West Dunne Avenue parcel was developed with a residence circa 1900 until present. Additional structures on this parcel include a barn, built before 1926, and garage and sheds, built after 1941. Section 5, Cultural Resources, of this study provides additional information about this historic resource.

Currently, there are also two single-family residences and associated garage and sheds at 55 and 59 West Dunne Avenue on the project site. Based on the Phase I ESA results, the structure at 55 West Dunne Avenue was constructed between 1948 and 1968. A nearby second residence at 59 West Dunne Avenue was moved to the project site in 1995.

The site reconnaissance and records research conducted as part of the Phase I ESA revealed no evidence of above-ground or underground storage tanks on the subject property. Additionally, no clarifiers, sumps, trenches, industrial floor drains, or industrial discharge points were noted during the site reconnaissance, historical and/or regulatory research. The field survey also revealed no disfigured, discolored, dying, or otherwise stressed vegetation that could indicate potentially hazardous materials storage or use.

On the basis of a review of aerial photographs, U.S.G.S. topographic maps, site observations, regulatory research, and/or interviews, the Phase I ESA concluded that the site was used for agricultural purposes. Aerial photographs show an L-shaped orchard on the subject site in 1956 and 1968. During the site reconnaissance, the field inspection noted that a portion of the subject site has remnants of orchard/fruit trees that have been on the subject site for a long period of time.

The Phase I ESA environmental database review identified two sites in the project vicinity that are either a recognized environmental condition, a *de minimis* environmental condition, or a historical recognized environmental condition (REC). Both of these sites are gas stations located east of the project site. A Unocal Station at 17015 Monterey Road (adjoining the project site to the east) was recorded as having a REC involving a leaking underground storage tanks. These cases have since been resolved and are closed. Additionally, a BP Station at 16995 Monterey Road also contained leaking underground storage tanks

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[41] PHASE ONE INC., 2012. *Phase I Environmental Site Assessment: 35, 45, 55, and 59 West Dunne Avenue, Morgan Hill, California 95037*. June.

[42] Sanborn Fire Insurance Maps are standard historical sources also typically reviewed for Phase I Environmental SiteAssessments. However, there is no Sanborn Map coverage for the proposed project site.

that were affecting groundwater quality. This case is still open with remediation efforts monitored through the Santa Clara County Local Oversight Program.

Hazardous Materials Stored On-Site. The Phase I ESA included an examination of the project site for stored hazardous materials. With the possible exception of common janitorial and/or office supplies, no storage or handling of hazardous substances greater than 20-gallon containers was observed in the areas inspected during the site reconnaissance. The site survey did note the presence of a 5-gallon container and other miscellaneous debris at 35 West Dunne Avenue. The study recommends that these containers and debris should be removed from the area and disposed of in accordance with regulatory agency guidelines. The Phase I ESA indicated that there were several locked structures such as garages and sheds that could not be inspected on the project site. The report states that a concrete area and wood wall of a garage in the northwestern portion of the subject site was stained, possibly with oil; the staining appeared to be originating from the interior of the garage. The garage was not accessible for inspection. As a result, the site reconnaissance for potentially hazardous materials stored on the project site has not been completed. Further inspection of the subject property will need to be conducted prior to any demolition or grading on the site to determine whether hazardous materials are contained in the site's storage structures.

Impacts related to the possible release of stored hazardous materials are potentially significant. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure HAZ-2, Removal and Disposal of Existing Hazardous Materials, requiring a completed inspection of the project site for potentially hazardous materials, and proper removal and disposal of all hazardous materials at the project site prior to building demolition.

Hazardous Building Materials. Based on their age, the structures on the subject property could likely include hazardous building materials such as asbestos-containing materials and lead-based paint. In addition, fluorescent light tubes containing mercury vapors, fluorescent light ballasts containing polychlorinated biphenyls (PCBs) or bis(2-ethylhexyl) phthalate (DEHP), and PCB containing electrical equipment may be present in any of the buildings that would be demolished, including both residences and the associated barn and sheds.

If friable or non-friable asbestos is present, there is a potential for release of airborne asbestos fibers when the asbestos-containing materials are disturbed, unless proper asbestos abatement precautions are taken. Such a release could expose the construction workers and adjacent residents and occupants to airborne asbestos fibers. However, the demolition would follow Bay Area Air Quality Management District (BAAQMD) and California Department of Industrial Relations (Cal/OSHA) regulations regarding abatement of asbestos-containing materials, including BAAQMD Regulation 11, Rule 2, Asbestos Demolition, Renovation and Manufacturing and Title 8 of the California Code of Regulations, Section 1529 and Sections 341.6 through 341.14. A building permit would not be issued by the City of Morgan Hill until the project applicant demonstrates compliance with these asbestos abatement regulatory requirements. In accordance with these regulatory requirements, the BAAQMD (and as required by existing federal and State law) would require specific testing for confirmation of any asbestos-containing materials, abatement of identified asbestos-containing materials, and proper handling of any identified materials prior to and during demolition. Implementation of these measures would avoid/minimize worker exposure during demolition and would also require proper disposal of asbestos-containing materials removed during abatement.

Similarly, if lead-based paint is present and has delaminated or chipped from the surfaces of the building materials, there is a potential for the release of airborne lead particles, unless proper lead abatement procedures are followed. To address lead-based paint, the demolition would comply with the Cal/OSHA Lead in Construction Standard (8 CCR Section 1532.1) that would ensure that workers and the surrounding population are not exposed to unsafe levels of lead, and that a release of lead based paint would not adversely affect the environment.

If PCBs are present in the building to be demolished, leakage could expose workers to unacceptable levels of PCBs (greater than 5 parts per million, based on Title 22, *California Code of Regulations*). Removal of fluorescent light tubes and fixtures could result in exposure to mercury vapors if the lights are broken or exposure to DEHP (if present in the light ballasts).

Potential exposure to these hazardous building materials during building demolition would be potentially significant, but mitigated to a less-than-significant level with implementation of Mitigation Measure HAZ-3, Hazardous Building Materials Surveys and Abatement, which requires the project applicant to conduct surveys for hazardous building materials prior to demolition, and if warranted, to implement appropriate abatement and disposal procedures in compliance with applicable regulations.

Hazardous Materials in Soil. As described above, the proposed project site was used as an orchard since before 1948 and remnants of the orchard remain today. Therefore, organochlorine pesticides, including DDT, may have been used for pest control.[43] Pesticides that contain arsenic may have also been used. However, the site soils have not been assessed for the potential presence of organochlorine pesticides or arsenic. Pesticide residuals in the soil could present a health hazard to construction workers, the public, or future residents at the site if present at concentrations that would present a health risk. Hazardous materials could also be present in several areas of the site, including the locked storage structures, where hazardous materials spills may have occurred. However, soil sampling has not been conducted to evaluate soil quality at the project site. Although the environmental database review did not identify any sites in the vicinity that could affect soil quality at the project site, additional sites could be identified prior to construction of the proposed project. Therefore, impacts related to exposure to hazardous materials in soil during construction and once construction is completed would be potentially significant.

This impact would be reduced to a less than significant level with implementation of Mitigation Measure HAZ-4 requiring the project applicant to retain a qualified environmental consultant to update the database review within 90 days of the start of construction; implement a soil quality investigation; conduct all site investigation and cleanup activities at the site under the Santa Clara County Voluntary Cleanup Program; obtain regulatory concurrence that no further action is required prior to construction; and develop a contingency plan identifying procedures to be followed in the event that previously unidentified contamination is identified during construction. If hazardous materials are identified at sufficient levels, this measure also requires the construction contractor to develop a soil management plan identifying appropriate soil disposal methods as well as a site safety plan.

Naturally Occurring Asbestos. Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. However, the project site is not located in an area where naturally occurring asbestos is likely to be present[44] and therefore there is no impact associated with exposure to naturally-occurring asbestos.

8c. Hazardous Emissions or Use of Acutely Hazardous Materials

Hazardous emissions are toxic air contaminants (TACs) identified by the CARB and the BAAQMD. Extremely hazardous materials are defined by the State of California in Section 25532 (2)(g) of the Health

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[43] California Department of Toxic Substances Control, 2008. *Interim Guidance for Sampling Agricultural Properties (Third Revision)*. August 7. Available online at http://www.energy.ca.gov/sitingcases/palmdale/documents/2011-02 02_Exhibits_FSA_TN-59585.pdf.

[44] Department of Conservation Division of Mines and Geology, 2000. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report. August. Available online at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf.

and Safety Code. During project construction, only common hazardous materials such as paints, solvents, cements, adhesives, and petroleum products (such as asphalt, oil, and fuel) would be used, none of which are considered extremely hazardous materials. As discussed in Section 3, Air Quality, the only toxic air contaminant that would be emitted during construction is diesel particulate matter (DPM). The closest school is Lewis H. Britton Middle School at 80 West Central Avenue, which is located approximately 0.5 mile northwest of the site. Therefore, there is no impact associated with hazardous emissions within ¼-mile of a school during project construction. Further, as discussed in Section 3d, Exposure of Sensitive Receptors, operation of project-related diesel construction equipment would result in less-than-significant cancer and non-cancer risks on nearby sensitive receptors.

There would be no use of extremely hazardous materials or emissions of TACs once the residences are constructed and occupied. Therefore, there is no impact associated with hazardous emissions within ¼-mile of a school once the project is constructed.

8e, 8f. Airports/Airstrips

The nearest airport to the proposed project is the San Martin Airport, located approximately 3.8 miles to the southeast of the site. Therefore, there is no impact associated with safety hazards due to location of the project within 2 miles of a public airport or in the vicinity of a private airstrip.

8g. Emergency Plans

The project would not impair or physically interfere with an adopted emergency response or emergency evacuation plan. The project will be required to comply with Fire Department Standard Details and Specifications to ensure adequate emergency access to project buildings by fire engines. Therefore, the project's impact on emergency response would be less than significant.

8h. Wildland Fire Hazards

The proposed project site is not located in a fire hazard severity zone within a local responsibility area[45] or state responsibility area.[46] Therefore, there is no impact related to risks associated with wildland fires.

Mitigation Measures – Hazards and Hazardous Materials (HAZ)

The following measures would be required to reduce the project's hazardous materials impacts to less-than-significant levels:

HAZ-1: ***Implement Buyer Education Program for Household Hazardous Waste:*** *The project sponsor, working with the City of Morgan Hill and County of Santa Clara Household Hazardous Waste program, shall implement a Buyer Education Program for Household Hazardous Waste, developing materials to educate buyers about the identification of household hazardous wastes, environmental hazards associated with mishandling of the wastes, appropriate disposal methods, and how to make an appointment for disposal. At a minimum, the educational materials shall include a list of example household hazardous wastes, discuss the environmental impacts of improper disposal, explain how to make an appointment for disposal, and list safer and less toxic alternatives to hazardous products commonly used. The educational materials shall be provided to the buyer at the time of purchase.*

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[45] California Department of Forestry and Fire Protection, *Santa Clara County Draft Fire Hazard Severity Zones in LRA*, October 4, 2007. Available online at http://www.fire.ca.gov/fire_prevention/fhsz_maps_santaclara.php.

[46] California Department of Forestry and Fire Protection, *Santa Clara County Fire Hazard Severity Zones in SRA,* Adopted by CAL FIRE on November 7, 2007. Available online at http://www.fire.ca.gov/fire_prevention/fhsz_maps_santaclara.php.

HAZ-2: ***Removal and Disposal of Existing Hazardous Materials.*** *Removal and Disposal of Existing Hazardous Materials. Prior to demolition of the existing buildings at the project site, the project applicant shall retain a qualified and licensed contractor to complete the inspection of the project site for potentially hazardous materials, and remove all hazardous materials (pesticides, fungicides, other agricultural chemicals, sealants, lubricants, antifreeze, paints, and others) as well as all fuel tanks and 55- gallon drums from the property, and legally dispose of these materials. Documentation of appropriate disposal shall be submitted to the City of Morgan Hill Community Development Agency Building Division prior to issuance of a demolition permit.*

HAZ-3: ***Hazardous Building Materials Removal.*** *Prior to demolition of the existing buildings at the project site, the project applicant shall require that the contractor(s) have a hazardous building materials survey completed by a Registered Environmental Assessor or a registered engineer. This survey shall be completed prior to any demolition activities associated with the project. If any friable asbestos-containing materials or lead-containing materials are identified, adequate abatement practices, such as containment and/or removal, shall be implemented in accordance with applicable laws prior to demolition. Specifically, asbestos abatement shall be conducted in accordance with Section 19827.5 of the California Health and Safety Code, as implemented by the BAAQMD, and 8 CCR Section 1529 and Sections 341.6 through 341.14, as implemented by Cal/OSHA. Lead-based paint abatement shall be conducted in accordance with Cal/OSHA's Lead in Construction Standard.*

Any PCB-containing equipment, fluorescent light tubes containing mercury vapors, and fluorescent light ballasts containing DEHP shall also be removed and legally disposed of in accordance with applicable laws including 22 CCR Section 66261.24 for PCBs, 22 CCR Section 66273.8 for fluorescent lamp tubes, and 22 CCR Division 4.5, Chapter 11 for DEHP.

HAZ-4: ***Soil Sampling and Management.*** *The following measures shall be required to reduce public health risks related to exposure to hazardous materials to a less-than-significant level. Oversight agency review may amend these measures as applicable.*

a. The project applicant shall retain a qualified professional to update the environmental database review performed as part of the Phase 1 Environmental Site Assessment no more than 90 days prior to the start of construction. The qualified professional shall prepare a report summarizing the results of the environmental database review and assessing the potential for any identified chemical release sites to affect soil quality at the proposed project site. Appropriate soil analysis to evaluate the potential for soil contamination at the proposed project site, if needed, shall also be identified.

b. The project applicant shall retain a qualified professional to conduct a soil quality investigation to assess the potential presence of pesticides and associated metals in the soil as well as the potential presence of any hazardous materials that may have been spilled. If the updated environmental database review performed in accordance with HAZ-4a, above, identifies the need for additional sampling, it shall be included in this investigation. The qualified professional shall prepare a report summarizing the results of the soil investigation, including recommendations for site cleanup and disposal of excavated soil.

c. The project applicant shall participate in the Voluntary Cleanup Program (VCP) administered by the Santa Clara County Department of Environmental Health (County) to develop the appropriate plan of action based on the results of the soil quality investigation conducted under HAZ-4b, above. If additional investigation or remediation is needed, the project applicant shall implement such action with oversight from the County, unless referred to an alternate agency.

d. The applicant shall submit a "no further action" letter from the oversight agency or comparable closure document that demonstrates the site has been released as clean or a mitigation plan has been approved and implemented. Each phase of building permit issuance shall be contingent upon approval of the soil investigation and remediation documentation.

e. If the soil investigation identifies soil requiring off-site disposal that is not suitable for unrestricted disposal, the project applicant shall require the construction contractor(s) to prepare a Soil Management Plan (SMP). The SMP shall provide a plan for disposal of identified hazardous soils and excess soil produced during construction activities, including the disposal methods for soil, potential disposal sites, and requirements for written documentation that the disposal site will accept the excess soil. If appropriate, excess soil may be disposed of on-site, under foundations or in other locations in accordance with applicable hazardous waste classifications and disposal regulations.

The contractor shall be required to submit the SMP to the project applicant for acceptance prior to implementation. If necessary, excess soil from construction activities shall be sampled to determine the appropriate disposal requirements in accordance with applicable hazardous waste classification and disposal regulations prior to or during construction,. The project applicant shall also submit the SMP to the County of Santa Clara Department of Environmental Health a minimum of 30 days prior to the planned start of construction,

f. If recommended by the qualified professional, the project applicant shall require the construction contractor to prepare and implement a site safety plan identifying the chemicals present, potential health and safety hazards, monitoring to be performed during site activities, soils-handling methods required to minimize the potential for exposure to harmful levels of the chemicals identified in the soil, appropriate personnel protective equipment, and emergency response procedures.

g. The project applicant shall require the construction contractor(s) to have a contingency plan for sampling and analysis of potential hazardous materials and for coordination with the appropriate regulatory agencies, in the event that previously unidentified hazardous materials are encountered during construction. If any hazardous materials are identified, the contractor(s) shall be required to modify their health and safety plan to include the new data, conduct sampling to assess the chemicals present, and identify appropriate disposal methods. Evidence of potential contamination includes soil discoloration, suspicious odors, the presence of USTs, or the presence of buried building materials.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
9. Hydrology and Water Quality - Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

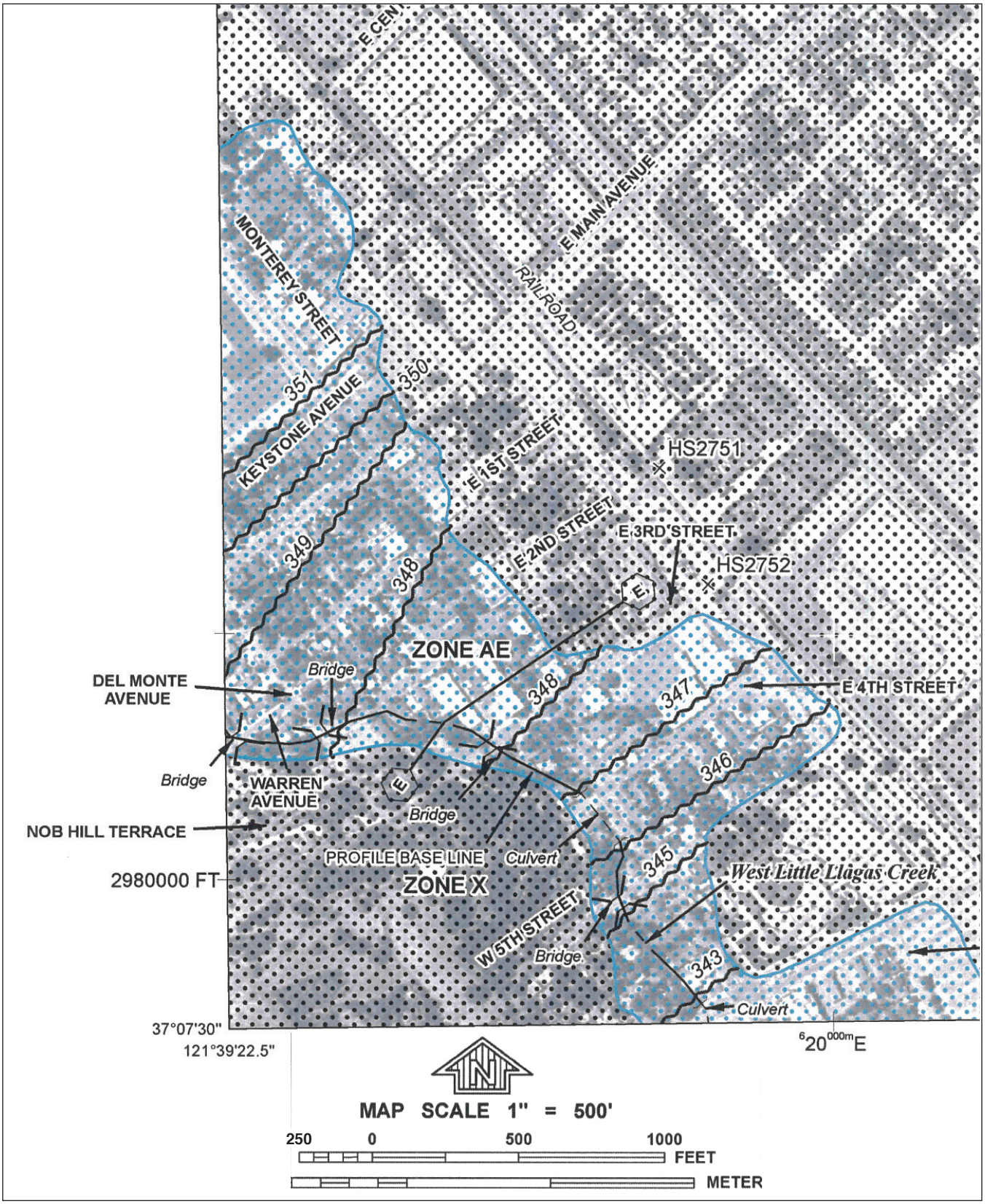
Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☒	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☒	☐	☐
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

The 1.41-acre project site is fairly level, sloping slightly to the east, with elevations ranging from approximately 344 feet above mean sea level (msl) at the northwestern corner of the site to 340 feet msl on the eastern side of the site. West Little Llagas Creek enters the subject property on its northern perimeter and crosses site to the south, along the project site's eastern perimeter, as a linear drainage channel with stream channel elevations of 334 to 335 feet msl. Intense storm runoff drains from the eastern part of the project site and enters the creek channel on the site, while runoff from developed portions of the site are conveyed to a 27-inch storm drain of the City's storm drainage system in West Dunne Avenue.

The eastern part of the project site is located in a flood hazard area identified on the Flood Insurance Rate Map[47] for West Little Llagas Creek. **Figure 17** shows the project site's FEMA Flood Zone. These areas are identified as a Special Flood Hazard Area (SFHA)and are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood.

In order to evaluate the extent flooding hazards on the project site, the hydraulic and hydrological conditions affecting West Little Llagas Creek at the site and project vicinity were analyzed by MH

[47] Federal Emergency Management Agency, 2009. Flood Insurance Rate Map: Santa Clara County, California and Incorporated Areas (Map Number 06085C0444H). May 18.



Source: FEMA (2015)

engineering Co. in a flood study. The results of the flood study are discussed below and it is included as **Attachment 4**.

9a, 9f. Water Quality

Construction. The proposed project includes removal of the existing residences and ancillary structures at the site and construction of 16 new residences along with associated storm drainage improvements and other infrastructure. Excavation, filling, and other earth moving activities would be conducted over approximately 1.1 acres of the 1.41-acre site. An approximately 0.31-acre part of the project's eastern area on APN 767-08-035 would remain undeveloped as a setback buffer zone for flood protection and open space purposes.

Without proper precautions, construction-related excavation and associated stockpiling of soil and placement of imported fills could induce erosion, and related sedimentation, resulting in degradation of water quality in the existing storm drain system. Construction activities would also require the use of hazardous materials that could degrade water quality without proper controls.

However, in accordance with Chapter 13.30 of the City of Morgan Hill Municipal Code (Urban Storm Water Quality Management and Discharge Control), the project applicant would be required to comply with the requirements of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit) to control erosion during construction. The Construction General Stormwater Permit applies to projects that disturb one or more acres of soil, or disturb less than one acre but are part of a larger common plan of development that disturbs one or more acres. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. In accordance with this permit, the project sponsor would be required to submit a Notice of Intent and implement a Storm Water Pollution Prevention Plan (SWPPP).

The SWPPP prepared in accordance with this permit would include at least the minimum BMPs related to housekeeping (storage of construction materials (including hazardous materials), waste management, vehicle storage and maintenance, landscape materials, pollutant control); non-stormwater management; erosion control; sediment control; run-on and run-off control. Additional BMPs would be specified as needed to protect water quality from construction-related stormwater and non-stormwater discharges. As part of the SWPPP, the project applicant would implement a construction site monitoring program to demonstrate compliance with the discharge prohibitions of the General Permit; demonstrate whether non-visible pollutants are present and could contribute to an exceedance of water quality objectives; identify the need for correction actions, additional BMPs, or SWPPP revisions; and evaluate the effectiveness of the existing BMPs. The SWPPP must also be submitted to the City of Morgan Hill Engineering Division for review and approval. Chapter 13.30 of the municipal code also specifies requirements for implementation of erosion and sedimentation controls.

With implementation of the requirements of the Construction General Stormwater Permit and specific erosion and sedimentation requirements of Chapter 13.30 of the City of Morgan Hill Municipal Code, water quality impacts related to erosion and a release of hazardous materials during construction would be less than significant.

Post-Construction. Most of the 1.41-acre project site is undeveloped and most of the stormwater infiltrates to the groundwater through the soil. Under the proposed project, the total building coverage for the 16 new residences would be 12,161 square feet (s.f.), and an additional 3,808 s.f. of impervious surfaces would be created by the construction of driveways, sidewalks, and streets. In all, impervious surfaces would comprise 15,969 s.f., or approximately 26 percent of the post-development project site. This increase in impervious surfaces could decrease the amount of stormwater infiltration and increase

flows to the storm sewer system, potentially increasing the discharge of stormwater pollutants to the storm sewer (and ultimately the Pajaro River) and the potential for erosion in Little Llagas Creek where the stormwater is discharged.

However, post-construction stormwater runoff from the proposed project would be managed in accordance with Resolution R3-2013-0032 issued by the California Regional Water Quality Control Board, Central Coast Region.[48] This resolution formally adopts post-construction stormwater management requirements for development projects in the Central Coast Region. The requirements identify 10 Watershed Management Zones (WMZs) in the covered area, and specify stormwater management requirements for each zone, depending on the size of the development project. Because the proposed project site is located in an area classified as WMZ-1, and would involve the creation of 15,969 s.f. of impervious surfaces, stormwater management at the project site must include site design and runoff features to limit the amount of runoff from the project site as well as on-site water quality treatment to reduce pollutant loads in the stormwater runoff using a Low Impact Development (LID) treatment system such as biofiltration. In WMZ-1, the treatment system must retain 95 percent of the runoff from the project site and also maintain peak runoff flows such that they do not exceed pre-project flows.

As described in the Project Description, the project applicant would construct a centralized bioretention system to treat at least 95 percent of the runoff from the project site. The project proposes to install an subsurface stormwater retention system under the private street on the project site. The design, construction, operation, and maintenance of the system would be addressed in a Stormwater Control Plan submitted to the City of Morgan Hill in accordance with the stormwater management requirements adopted by Resolution R3-2013-0032. This plan would demonstrate how the bioretention facility would meet the specified water quality, runoff retention, and peak flow management requirements. Prior to occupancy of the project, the stormwater controls would be field verified by the City of Morgan Hill to confirm design of the controls in accordance with the specified standards, and the controls would be subject to later operation and maintenance inspections by the City.

With implementation of the requirements adopted by Resolution R3-2013-0032, water quality impacts related to violation of water quality standards or waste discharge requirements would be less than significant once the project is constructed.

Existing Well. The City has installed a groundwater monitoring on the eastern portion of the project site and this facility would not be directly affected by proposed project development. However, the Phase I Environmental Site Assessment (ESA) (please see Section 6, Geology and Soils) identified one or more potential well locations on the project site that were not documented as part of the Phase I ESA review. If these are not properly abandoned prior to construction, damage to the well could provide a downward conduit for groundwater contamination during construction and once the residences are constructed. The damaged well could also provide a conduit for cross contamination between aquifers. This is a potentially significant water quality impact. Mitigation Measure HYD-1 requires abandoning wells in accordance with applicable well abandonment regulations and would reduce this impact to a less-than-significant level.

[48] Resolution No. R3-2013-0032 is available online at http://www.waterboards.ca.gov/centralcoast/water_issues/programs/stormwater/docs/lid/lid_hydromod_charette_index.shtml

9b. Groundwater Resources

The proposed project is located in the Llagas Subbasin of the Gilroy-Hollister Groundwater Basin which has an area of 87 square miles and is used by the City of Morgan Hill as a water supply.[49,50] However, the project would not result in depletion of groundwater supplies in this subbasin because the project does not propose to install wells or otherwise use groundwater beyond what is supplied by the City. Further, in accordance with current building standards, development of residential uses on the site would include the use of water-conserving fixtures that would help minimize water use by future residents.

The project includes the construction of 15,969 s.f. of new impervious surfaces that could reduce the infiltration of stormwater at the site, resulting in an associated decrease in groundwater recharge in the project area. However, the new impervious surfaces represent approximately 0.0007 percent of the total area of the groundwater subbasin. Further, as discussed in 9a, the project applicant would construct a bioretention facility to infiltrate 95 percent of the stormwater runoff from the project site in accordance with the stormwater management requirements adopted by Resolution R3-2013-0032. With construction of the proposed stormwater controls, the amount of stormwater recharged to the groundwater would be similar to existing conditions and any reduction in groundwater recharge would be minute.

Based on the above analysis, impacts related to depletion of groundwater resources and interference with groundwater recharge would be less than significant.

9c, 9d, 9e. Drainage

The project site does not include any surface impoundments, wetlands, natural catch basins, settling ponds, or lagoons on the site. West Little Llagas Creek is located along the site's eastern perimeter and extends through the subject property from its northern to southern boundary, where the channel enters a box culvert under West Dunne Avenue. The creek on the site is a straight, open drainage channel that conveys storm flows from the upper reaches of the watershed southward through Morgan Hill.

The project design specifies an open space area adjoining the creek channel that would provide a buffer zone for flood protection. The stream channel and banks would remain in their present condition. The project plans propose to remove several small structures within this buffer area, thereby reducing impervious surfaces on the eastern part of the site. There would be no impact related to alteration of drainage patterns by altering the course of a stream in a manner that would cause erosion or flooding on or off-site.

The project includes the construction of 15,969 square feet of impervious surfaces which could potentially concentrate stormwater runoff flows and result in on- or off-site erosion or flooding, increase flows to the storm sewer system, and increase the discharge of stormwater pollutants to the storm sewer. However, as discussed in Section 9a, the project applicant would construct underground retention and treatment facilities beneath the project's private street to treat and retain 95 percent of the runoff from the project site and also maintain peak runoff flows such that they do not exceed pre-project flows in accordance with the stormwater management requirements adopted by Resolution R3-2013-0032. With implementation of the required stormwater controls, the project would not result in runoff that would cause on- or off-site erosion or flooding, exceed the capacity of the existing storm sewer system, or

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[49] City of Morgan Hill, 2013. *Morgan Hill 2035, Existing Conditions White Papers, Environmental Resources and Hazards. Public Review Draft*. May 16. Available at http://morganhill2035.org/wp-content/uploads/2013/06/4_EnvResourcesHazards.pdf

[50] California Department of Water Resources, 2004. *California's Groundwater Bulletin 118, Central Coast Hydrologic Region, Gilroy-Hollister Groundwater Basin, Llagas Subbasin*. February 27. Available at http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/3-3.01.pdf

provide an additional source of polluted runoff. Therefore, impacts related to these topics would be less than significant.

9g, 9h, 9i, 9j. Flood Hazards

The proposed project site is located within the Downtown Core Area of the City and future development in downtown Morgan Hill is guided by the City's Downtown Specific Plan as well as the City's General Plan. The City's Storm Drain Master Plan does not call for any improvements to the existing storm drain system in Downtown, except for the Upper Llagas Creek Flood Protection Project (also known as PL566). PL566 is intended to provide flood protection for the Cities of Gilroy and Morgan Hill and the unincorporated portion of Santa Clara County known as San Martin. The project will consist of a series of channels, box culverts, and bridges designed to protect the floodplain from a one-percent flood. The southerly, downstream portion has been completed which protects the City of Gilroy. The northerly upstream portion that will someday protect Morgan Hill is not complete due to a lack of funding.

The Santa Clara Valley Water District (SCVWD) is the sponsor of the project and has been working with the US Army Corps of Engineers (USACE) to prepare environmental documents and preliminary design. The USACE has maintained minimal federal funding over the past five years to keep the environmental process moving forward. The SCVWD has taken on the property acquisition portion of the project and has made some progress. The overall construction cost to complete the project through Morgan Hill is approximately $105 million. The full federal share has been authorized in the 2007 Water Resources and Development Act pending annual appropriations. Progress on the project has been limited to right-of-way acquisition and preliminary engineering.

Upper West Little Llagas Creek winds through the Downtown area. The PL 566 flood control project offers the opportunity to incorporate a trail along Upper Llagas Creek as part of flood control improvement. This trail would provide pedestrians and bicyclists access from Downtown to areas north and south along the creek. The flood control project will be comprised of open channels in the downtown area, however the locations where the creek now runs under Monterey Road and under the shopping center on Block 20 (SW corner Dunne/Monterey) will likely continue to run through a below-ground box culvert. However, project design and other property redevelopment efforts could explore the feasibility of "daylighting" the creek and offering a continuous trail alongside of the flood control project.

The Downtown Specific Plan also specifies that, to the extent feasible, developments near Upper Llagas Creek should follow the "Guidelines and Standards for Land Use Near Streams" (Santa Clara Valley Water District, 2006). This includes, but is not limited to, restricting development at least 20 feet from the top of bank, maintaining a 2 to 1 structural slope stability requirement, and conducting a stability analysis. All proposed structures shall be constructed outside of the 100-year floodplain unless such development is consistent with the limitations contained in Chapter 18.42 (Flood Damage Prevention) of the Zoning Ordinance.

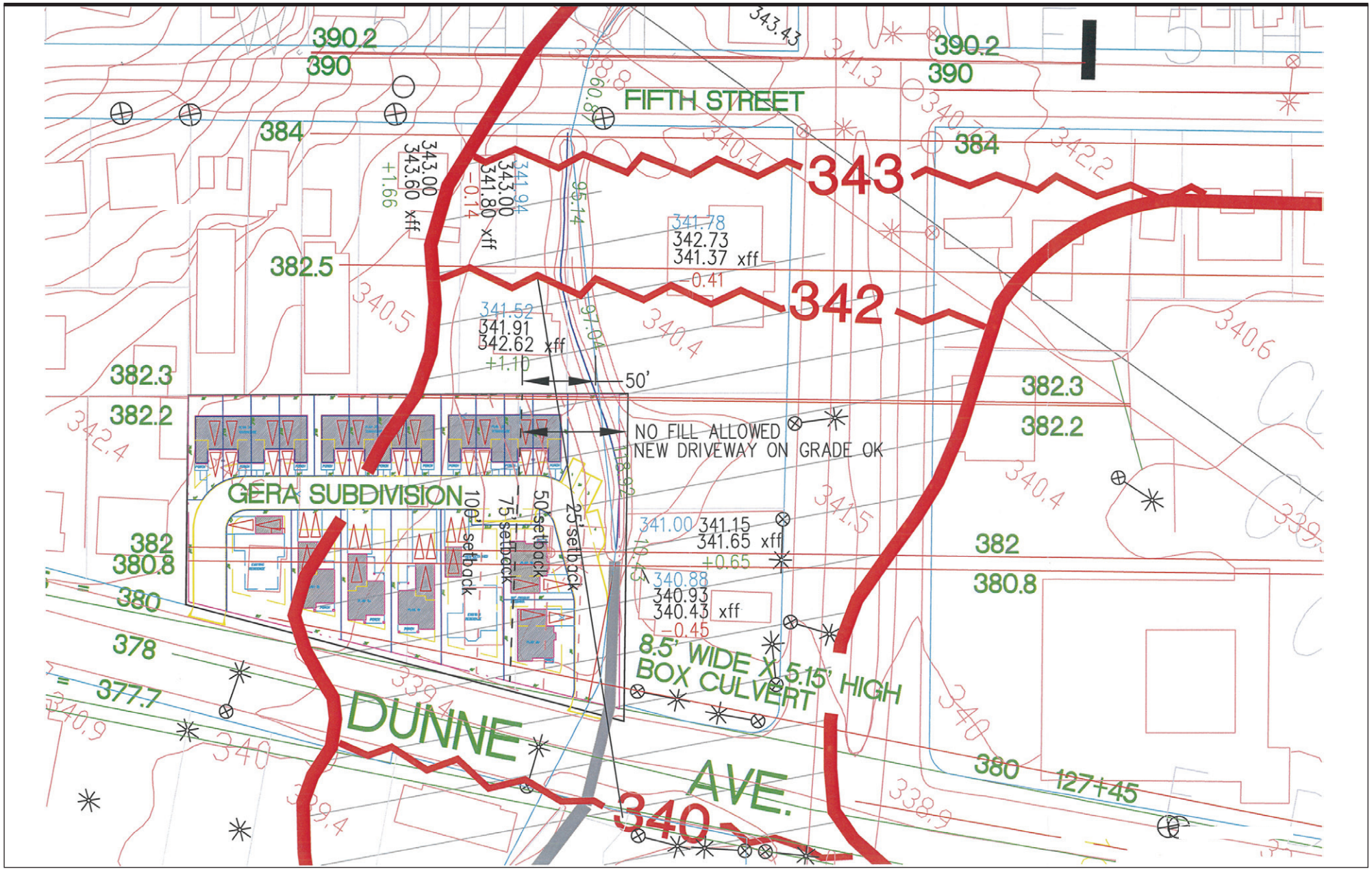
Floodplain Regulations

A significant portion of Downtown is in the floodplain. These areas are most susceptible to flooding and require additional measures to protect the properties from flood damage. A portion of the project site, which is in the Downtown Core Area, is situated within a SFHA as defined by FEMA. **Figure 18** shows the flood hazard zone and base flood elevations on the site. The City has formulated a Flood Damage Prevention ordinance for controlling potential development in flood-prone areas of the City.

Development within the floodplain is required to comply with the Flood Damage Prevention ordinance (Chapter 18.42), which provides various standards for construction, subdivisions, utilities, and other issues. Standards for new developments include, but are not limited to: anchoring building structures; using appropriate materials; flood-proofing commercial buildings; providing drainage paths; elevating residential structures; and designing utilities to minimize infiltration of floodways.

Flood Hazard Zone on Site

Figure 18



Source: FEMA (2015)

Section18.42.200, Floodways, of the Morgan Hill Municipal Code indicates that areas of special flood hazard as established in Section 18.42.070 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that carry debris, potential projectiles, and erosion potential, the following provisions apply. The City prohibits encroachments, including fill, new construction, substantial improvement, and other new development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in the base flood elevation during the occurrence of the base flood discharge. The basis for this assessment is the SFHA designation determined by FEMA. Therefore, the eastern part of the project site is within a floodway as defined by City code.

Section 18.42.070 also states the if the project is demonstrated to comply with these restrictions, all new construction, substantial improvement, and other proposed new development shall comply with all other applicable flood hazard reduction provisions of Sections 18.42.160, 18.42.170, 18.42.180, 18.42.190, 18.42.195, 18.42.200, 18.42.210, and 18.42.220.

Section 18.42.160 of the City Municipal Code states that residential construction, new or substantial improvement, shall have the lowest floor, including basement as follows:

- In an AO zone, the lowest floor shall be elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM by at least one foot, or elevated at least two feet above the highest adjacent grade if no depth number is specified.
- In an A zone, the lowest floor shall be elevated at least one foot above the base flood elevation, as determined by this community.
- In all other zones, the lowest floor shall be elevated at least one foot above the base flood elevation.

The project site is located in a flood hazard zone categorized as AE and therefore would need to ensure that the lowest floors of the project residences in this zone are elevated at least one foot above the base flood elevation. Upon the completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, or verified by the community building inspector to be properly elevated. Such certification or verification shall be provided to the floodplain administrator.

100-Year Flood. In order to determine the extent of potential flooding on part of the project site, a Flood Plain Study was prepared by MH engineering Co., a registered engineering firm, of Morgan Hill. The study conducted detailed modeling of the hydraulic conditions surrounding the potential flood hazards on West Little Llagas Creek in the project vicinity. The models used examined the results of fill placement and setbacks that could affect flood levels on the project site and adjoining properties. The results of the modeling indicated that the project as originally proposed would be affected by flood flows and would affect upstream flood flows, with potential flood hazard implications for upstream properties. The modeling indicated that the proposed project would need to remove the easternmost three residential units to prevent significant flooding impacts from the project.

In response to the Flood Study, the project applicant re-designed the project to remove the two easternmost townhouse units and reconfigure two eastern single-family lots to comply with the provisions of the Flood Study. The re-configured project design was used as the basis for evaluating all of the environmental issues within this Initial Study.

The proposed project's residences would now comply with the provisions of Morgan Hill Municipal Code Section 18.42.070. All lower floors of the proposed residences would be elevated at least one foot above the base flood elevation. As a Standard Condition of Approval, the project would also need to conform to all other applicable requirements of Chapter 18.42 of the City's Municipal Code. With the incorporation of these requirements as part of the project design, the potential flooding hazard of the proposed project would be less than significant.

Inundation by Dam Failure. Dams located near Morgan Hill include Anderson Dam and Chesbro Dam. According to the Open Space and Conservation Element of the City's General Plan and the Association of Bay Area Governments (ABAG), almost all of the valley floor terrain in Morgan Hill is within the area that would be inundated if these dams were to fail with reservoirs at full capacity. The project site is located in the dam failure inundation area of Anderson Dam.[51] The potential for flooding from dam failure on the site is considered to be negligible to very low and, consequently, impacts related to flooding as a result of failure of a levee or dam would be less than significant.

Inundation by Seiche, Tsunami, or Mudflow. The project site is located at an elevation of approximately 344 to 334 feet above mean sea level, more than 17 miles inland from the Pacific Ocean coastline, and separated from the coast by mountainous terrain; therefore, there would be no risk associated with tsunamis which are large sea waves. Seiches are standing waves caused by large-scale, short-duration phenomena (e.g. wind or atmospheric variations or seismic activity) that result from the oscillation of confined bodies of water (such as reservoirs and lakes) that may damage low-lying adjacent areas as a result of changes in the surface water elevation. The project site is not located in the vicinity of any confined water bodies and would therefore not be subject to a seiche. Based on this, there would be no impact related to exposure of people or structures to significant risk of loss, injury, or death involving seiche, or tsunami. Risks associated with landslide-induced mudflows are discussed in Geology and Soils.

Mitigation Measure – Hydrology and Water Quality (HYD)

The following measure shall be implemented by the project applicant to reduce the project's hydrology and water quality impacts to a less-than-significant level:

HYD-1: ***Properly Abandon Existing Wells****. The project sponsor shall retain a licensed well driller to destruct or abandon the former irrigation well at the project site in accordance with the standards specified in Santa Clara Valley Water District Ordinance 90-1 and the California Water Well Standards developed by the California Department of Water Resources (http://www.water.ca.gov/groundwater/well_info_and_other/california_well_standards/well_standards_content.html). Documentation of appropriate disposal shall be submitted to the City of Morgan Hill Building Division prior to issuance of a demolition permit.*

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
10. Land Use and Planning - Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

[51] City of Morgan Hill, 2015. *General Plan Open Space and Conservation Element.* January 9.. Accessed at: http://www.morgan-hill.ca.gov/DocumentCenter/View/15915

10a. Divide an Established Community

The Project Description presents a description of the land use designations and development application for the 1.41-acre project site. The subject property consists of four parcels (APNs 767-08-035 through 767-08-038) that have been historically used for residential and agricultural purposes. Overall, the proposed project site includes three residences, three garages, one barn, and two sheds.

In brief, the project site has a General Plan designation (General Plan Land Use Diagram, 2012) for Multi-Family Low Density use of 5 to 14 dwelling units per acre. Zoning for the project site is D-R3, Downtown – Medium Density Residential District, similar to residential zoning and development surrounding the site. This level of proposed residential use would be consistent with the General Plan's Multi-Family Low density designation.

The project site is surrounded by single-family multi-family residential development, and commercial uses. The proposed project could be considered an in-fill project, extending existing residential neighborhoods in the project area. Consequently, the proposed project would not divide an established community, but rather complement and connect the surrounding established neighborhoods.

10b. Project Consistency with Land Use Plans and Policies

The project would be subject to policies of the Morgan Hill General Plan Community Development Element and the Downtown Specific Plan. The project would be consistent with pertinent policies of the General Plan. Relevant policies and project consistency with these policies are discussed below:

General Plan Policies	Project Consistency
Community Development Element	
Policy 2a. Encourage the orderly development of the city, with concentric growth and infill of existing development areas. *Policy 2c. Consider land within or adjacent to the City as available for urban development only when it is included within the Urban Service Area and can be developed in a manner which will be cost-effective to the City….*	Consistent. Since the project site is surrounded by residential development, the project would be consistent with Policy 2a by addressing the need for development of infill parcels. In addition, the site is designated in the Morgan Hill General Plan as Multi-Family Medium Density Residential (5 to 14 dwelling units per acre), which would be consistent with Policy 2c.
Policy 6a. Avoid development in areas of natural hazards such as landslide and flood prone areas. *Policy 6c. Evaluate potential impacts of development projects on adjacent uses in initial environmental assessments and EIRs.*	Partly Consistent. A portion of the project site is located within the 100-year floodplain of the closest natural drainage channel, Little Llagas Creek, and is served by City drainage facilities in West Dunne Avenue. The proposed project would need to conform to the City's Standard Conditions of Approval as well as specific conditions controlling includes plans for the development of an on-site storm water detention basin to restrict site runoff to predevelopment levels.
Policy 7a. Plan for a population of 48,000 residents in 2020 *Policy 7b. Plan for an approximate 70/30 ratio of single family detached to single family attached and multi-family housing for all future residential development.* *Policy7c. Under the Residential Development Control System (RDCS) procedures, continue to emphasize single family development in the distribution of units between single family and multi-family development.* *Policy 7g. Continue to provide for a full range of residential land use densities and building types,*	Consistent. The Residential Development Control System (RDCS) implements these policies by controlling annual population growth based on a 2020 population cap of 48,000. Since annual development allotments are allocated in accordance with the RDCS, which takes into account the impact of the proposed development on public facilities and services, development of the project site could not occur until public facilities and services were available. Public facility and service agencies have indicated that facilities and services are available at the project site

General Plan Policies	Project Consistency
including mobile home, within the General Plan and Zoning Ordinance.	(see Sections 14, Public Services and 17, Utilities and Service Systems for more discussion).
Policy 7i. Encourage a mix of housing types and lot sizes within residential projects with five or more lots or units. *Policy 7l. Encourage preservation and rehabilitation of single family neighborhoods within the city.*	The proposed project is consistent with the City's objective of providing a variety and mix of housing types with an emphasis on encouraging single-family development in the community. The project also promotes the rehabilitation of single-family neighborhoods through the replacement of existing substandard housing with housing constructed to current building codes. The 16 new residential units replace two homes that are presently occupying the site and will be demolished. The 16 proposed residences include 11 townhomes, two duet units, and three single-family detached units that consist of two-story residences in one of six various plan types.
Policy 8c. Encourage future residential development projects where local streets are safe, convenient and aesthetically pleasing; and where elementary schools and parks are centrally located to serve the immediate residential area.	Consistent. The proposed residential development includes construction of a one-way loop access road to be centrally located on the project site.
Policy 19g. To allow school facilities to be used most efficiently and to minimize busing needs, residential development should occur in areas served by existing schools. Contiguous residential development and infill development within built-up areas should be encouraged.	Consistent. The proposed residential development is infill development that is contiguous to existing residential development.

In addition to the goals and policies of the Morgan Hill General Plan, the proposed project site is located within the City's Downtown Specific Plan area. The Downtown Specific Plan provides guidance for the ongoing development of the City's Downtown area through the establishment of development goals and supporting policies to assist the community in achieving those goals. The Downtown Specific Plan states that future development should focus on promoting pedestrian activity, increasing the Downtown residential population, and increasing shopping and employment opportunities with appropriately designed spaces throughout Downtown. The Specific Plan General Plan land use designations and Zoning Ordinance classifications reflect the development needs of Downtown Morgan Hill.

Downtown Specific Plan Goals and Policies	Project Consistency
Land Use Goal	
Increase allowable density in the residential neighborhood west of Monterey Road and along Dunne Avenue, Fifth Street, and part of Fourth Street (Blocks 13 and 14).	Consistent. The 1.41-acre project site is located on Block 14 of the Downtown area and is surrounded by residential development on three sides. The proposed project supports this goal by increasing the density of the site from three residential units to 17 units.
Land Use Policies	
Promote high- and medium-density residential units in mixed-use development to increase the Downtown residential population. Adoption of this Specific Plan includes land use and zoning changes resulting in higher density near Dunne Avenue and Fifth Street (Block 14 and portions of Block 13) and on the VTA/Caltrain parking lot (Block 16).	Consistent. The project's proposed density would increase the residential population of the Downtown area through the addition of 16 new residential units on Block 14, and preserving an existing historic single-family residence on the site. This loss of two existing residences on the site would result in 14 net new residences from project development.

Downtown Specific Plan Goals and Policies	Project Consistency
Encourage the preservation of the small-scale residential neighborhoods west of Monterey Road and north of Fourth Street.	Consistent. The proposed project would establish a small-scale residential neighborhood connected to West Dunne Avenue west of Monterey Road. Access to the neighborhood would be from a loop driveway that focuses circulation and access to all 17 units internally on the site.

This Specific Plan assigns block numbers to Downtown blocks for ease of discussion. Blocks 1-14 are within the Downtown Core and Blocks 1-18 are within the Specific Plan boundary. This Specific Plan also addresses land uses for Blocks 19 and 20, which are outside the Specific Plan boundary. The project site is situated on Block 14 of the Specific Plan, within the Downtown Core.

Block 14 has a CBD Mixed Use and Multi-Family Medium (General Plan) and CBD and D-R3 (Zoning Ordinance) designation. This block is not within the GFO district. The projected redevelopment assumes the existing multi-family low (R2) designation is increased to Downtown multi-family medium (D-R3) for a density of up to 21 dwelling units per acre. Redevelopment of the block offers the potential for residential uses and approximately 30,000 square feet of offices.

The D-R3 district is intended to stabilize and protect the residential character of neighborhoods, and to promote a suitable environment for family and adult communities in a higher-density environment than other residential zoning categories would allow. The Specific Plan presents design guidelines for residential uses proposed in the Downtown Medium Residential District (D-R3). In particular, uses permitted in the D-R3 zoning district include: 1) single-family detached and attached dwellings; 2) multi-family dwellings; 3) small residential congregate care facilities (6 or less units); 4) duplex and triplex units; 5) small family day care and home occupation. Table 8 of the Specific Plan also identifies uses that are conditionally permitted, conditionally permitted with a Downtown Administrative Use Permit, and not permitted.

Guidelines for the development of projects within the D-R3 zoning district also specify that all development, with a few exceptions, is subject to the Design Permit requirements of Zoning Ordinance Chapter 18.74: Design Review. Approval of Design Permits are subject to making findings that the proposed construction or alteration project is in substantial conformance with the Design and Signage Guidelines of the Downtown Specific Plan, as well as with applicable design standards and guidelines as contained in the city's Design Review Handbook. Development density for the D-R3 zoning district is 14 to 21 dwelling units per acre.

The proposed zoning for the project site includes a Planned Development (PD) overlay zoning district. The purpose of the Planned Development (PD) overlay district is to: facilitate and promote coordination of design, access, use intensity, and other features associated with development of mixed use developments, multiple adjacent properties or large single properties; encourage flexibility of site planning when it will enhance the area in which it is proposed; allow construction and reservation of housing units for lower income or senior households, and to regulate the conversion of mobile home parks to resident ownership parks or other uses. The review and approval of the PD overlay district is subject to the provisions of Chapter 18.30 of the City of Morgan Hill Municipal Code.

As required by City ordinance, the project applicant has prepared a Site Development Plan for the development of 17 residential lots on the 1.41-acre parcel. The development of 11 townhouses, three single-family detached dwellings, two duet single-family attached units, and preservation of one existing residence would be consistent with permitted uses in the PD zone. The project site plan indicates that the single-family residences proposed for Lots 12 though 17 would front on West Dunne Avenue. A one-way loop access road would connect to West Dunne Avenue at the eastern and western ends of the project site and provide access to serve all of the residential lots.

Lands surrounding the project site are currently developed with various residential and commercial uses that are consistent with residential development of the subject property. These land uses include residential and permitted uses within residential planned development zoning districts. The zoning districts surrounding the project site include similar properties zoned medium-density residential [R-2, 3,500 RPD; R3; D-R3; R3(CU); CC-R) surrounding the project site on all of its boundaries.

The proposed residential development would be similar to existing residential uses that presently adjoin the project site and would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

10c. Conflict with Habitat Conservation or Natural Community Conservation Plans

The project site is within the SCVHP permit area, and urban development is a "Covered Activity" under the plan. Land cover in the Project site is classified as Urban – Suburban. No SCVHP land cover fees apply to the project given its location in a "No Land Cover Fee" zone.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
11. Mineral Resources - Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

11a, 11b. Mineral Resources

The Morgan Hill General Plan does not identify any regionally or locally important mineral resources within the City of Morgan Hill.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
12. Noise - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
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?	☐	☐	☒	☐

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

A detailed noise study was completed as part of this Initial Study by Edward L. Pack Associates, Inc. (ELPA) in March 2015 and it is included in **Attachment 5** of this report and summarized below.

Existing Noise Environment

Noise-Sensitive Receptors. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, places of worship, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. Existing sensitive receptors located adjacent to the site include single-family residences located adjacent to the site's northern and western boundaries, commercial (Truman KwikServ gas station) and office uses adjacent to the site's eastern boundary, and an apartment building and retail commercial (Morgani Hill Plaza) uses across West Dunne Avenue to the south of the site.

Existing and Future Noise Levels. The primary sources of noise at the project site are traffic on West Dunne Avenue and Monterey Road. To determine the existing noise environment at the site, continuous recordings of the sound levels were made at two locations on February 25- 26, 2015: Measurement Location 1 was 53 feet from the centerline of West Dunne Avenue corresponding to the proposed minimum building setback from the road, while Location 2 was 54 feet from the east property line near the end of the Truman KwikServ, corresponding to the proposed minimum setback of homes closest to the Truman KwikServ and Monterey Road. Noise measurement locations and results are presented in Figure 3 and Appendix C, respectively, of Attachment 5.

Noise measurements indicate that existing noise levels along West Dunne Avenue ranged from approximately 56.5 to 63.4 dBA during the day and about 45.4 to 58.6 dBA during the night at 53 feet from the centerline, while noise levels along the eastern property boundary ranged between approximately 50.3 and 55.5 dBA during day and 41.2 and 53.1 during the night at 215 feet from the centerline of Monterey Road. Maximum noise levels along West Dunne Avenue ranged from about 58.3 to 70.8 dBA. Since traffic, stationary equipment, and loading dock noise dissipate at a rate of 3 to 6 dB for each doubling of the distance from the source to the received, other locations on the site that are at greater distances from these roadways would have lower exterior noise levels.

As indicated in the Morgan Hill Circulation Element, future (2030) traffic volumes on the section of West Dunne Avenue from Peak Avenue to Viewcrest Lane (about ¼ mile west of the site) are predicted to increase from 6,580 average daily traffic (ADT) in 2009 to 8,600 ADT in 2030, an increase in traffic volume of 31%. Applying this increase to the reported traffic volume on West Dunne Avenue adjacent to the site (8,710 ADT) results in a future traffic volume of 11,384 ADT. A 31% increase in traffic volume yields a 1-dB increase in the traffic noise levels. The traffic volume on Monterey Road is reported to increase from the existing 17,780 vehicles ADT to 25,100 vehicles ADT. This increase in traffic volume yields a 1-dB increase in the Monterey Road traffic noise levels.

Applicable Noise Standards and Significance Criteria

Morgan Hill General Plan Noise Element. Table 9 of the City of Morgan Hill Noise Element present acceptable exterior noise level standards, utilizing the Day-Night Level (DNL) 24-hour descriptor to define acceptable noise exposures for various land uses. These noise standards indicate that exterior noise levels up to 60 decibels (dB) DNL is considered "normally acceptable" for single-family residential uses. However, in areas where noise levels are between 55 dB and 70 dB DNL, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

A limit of 45 dB DNL is specified for interior living spaces. In addition, the Noise Element specifies that when the exterior noise exposure is greater than 60 dB DNL, the *maximum instantaneous* noise levels (L_{max}) shall not exceed 50 dBA in bedrooms and 55 dBA in other living spaces. The interior maximum noise limits would apply to any residential units located in areas where exterior noise exposures exceed the City's exterior noise standard (60 dB DNL).

12a. Noise Compatibility of Proposed Uses

Exterior Noise Exposure Levels. The existing and future noise exposures at the proposed minimum building setback of 53 feet from the centerline of West Dunne Avenue was calculated to be 61 and 62 dB DNL under existing and future traffic conditions, respectively. These noise exposures would exceed the City of Morgan Hill Noise Element exterior standard for residential uses (60 dB DNL) by up to 2 dB. Therefore, the City's interior maximum noise limits would apply to proposed homes along West Dunne Avenue.

The existing and future noise exposures in the most impacted rear yard was calculated to be 61 and 62 dB DNL, respectively, but only the lot at the southeasterly corner of the site has a portion of the rear yard that would be exposed to noise is excess of 60 dB DNL. Existing and future noise exposures at this one rear yard would exceed the City of Morgan Hill Noise Element exterior standard for residential uses (60 dB DNL) by up to 2 dB, a potentially significant impact. With provision of a noise control barrier along a portion of the one rear yard boundary, as specified in Mitigation Measure NOI-1, would reduce this impact to a less-than-significant level. All other rear yards of proposed homes would have noise exposures that comply with the City's 60 dB DNL limit, a less-than-significant impact.

The existing and future exterior noise exposures at the proposed minimum building and rear yard setbacks from Monterey Road and Truman KwikServ (54 feet from the eastern property boundary) are 55 and 56 dB DNL at the first floor elevations, respectively, and 58 and 59 dB DNL at the upper floor elevations, respectively. Since the noise exposures would not exceed the City's 60 dB DNL limit, the interior maximum noise limits would not apply to proposed homes and rear yards within this setback, a less-than-significant impact.

Interior Noise Exposure Levels. To determine the interior noise exposures in project living spaces, a 25-dB reduction was applied to the exterior noise exposures at the building setbacks to represent the attenuation provided by a typical building shell under a closed window condition. The closed window condition is used in this study as full-time ventilation is proposed to be provided that will allow the residents to keep their windows closed for noise control at all times without further specification. The project design includes the installation of standard dual-pane thermal insulating windows and would provide a full-time ventilation system for its units.

The interior noise exposures in the living spaces closest to West Dunne Avenue would be 36 and 37 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures would meet the 45-dB DNL limit of the City of Morgan Hill Noise Element standards. The interior maximum noise levels in the most impacted living spaces closest to West Dunne Avenue (within the 60 dB DNL noise

contour) would range from 33.3 to 45.8 dBA. Thus, the maximum interior noise levels will be within the City's 50-dBA limit for bedrooms and 55-dBA limit for other living spaces.

The interior noise exposures in the ground floor living spaces closest to Monterey Road and Truman KwikServ would be 30 and 31 dB DNL under existing and future traffic conditions, respectively. The interior noise exposures in the upper floors of homes closest to these noise sources would be 33 and 34 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures would be within the City's 45-dB DNL limit, a less-than-significant noise impact.

Since interior spaces of all project residences would meet applicable City noise limits, noise mitigation measures for the interior living spaces would not be required.

12b. Groundborne Noise and Vibration

The closest existing structure that would be subject to construction-related vibration effects would be a garage structure located to the west, as close as approximately five feet from the project site's western boundary. Proposed residences would be setback at least five feet from this boundary, or a total of 10 feet from the adjacent garage. At 10 feet, groundborne vibration and noise levels generated by most types of construction activities[52] would not exceed threshold levels for cosmetic damage to structures.[53] Operation of impact or vibratory pile drivers or large truck-mounted compactors can generate higher vibration levels than other construction equipment. At distances of less than 50 feet, vibration from operation of such equipment could disturb neighbors and cause cosmetic damage to adjacent structures. While pile driving equipment is not proposed to be used during project construction, large vibratory compactors could operate as close as 10 feet from existing structure to the west. At this distance, vibration levels from large vibratory rollers (typically associated with road construction) could exceed threshold levels for cosmetic damage to structures, a potentially significant impact.[54] However, with implementation of Mitigation Measure NO-2, which prohibits use of larger vibratory compactors within 15 feet of adjacent structures and restricts use of vibratory compactors to smaller (jumping jack) vibratory compactors within 15 feet of the project boundary, construction-related vibration is expected to remain below the 0.5 in/sec PPV threshold, thus reducing this impact to a less-than-significant level.

Groundborne noise refers to a condition where noise is experienced inside a building or structure as a result of vibrations produced outside of the building and transmitted as ground vibration between the source and receiver. Groundborne noise can be problematic in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing in close proximity to homes or other noise-sensitive structures. However, proposed noise and vibration-generating construction activities associated with the proposed project would involve techniques that primarily generate airborne noise and surface vibration. Any potential groundborne noise from construction activities would be imperceptible, and therefore would have no impact.

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[52] Bulldozers, jackhammers, and loaded trucks typically generate vibration levels on the order of 0.003 to 0.089 inches per second, peak particle velocity (in/sec PPV) at 25 feet (U.S. Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May. Available online at http://www.fta.dot.gov/12347_2233.html or http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. At 10 feet, such vibration levels would increase to 0.012 to 0.353 in/sec PPV.

[53] The American Association of State Highway and Transportation Officials (AASHTO) recommends a threshold of 0.5 in/sec PPV for transient and intermittent vibrations.

[54] Large, truck-mounted vibratory rollers can generate vibration levels of up to 0.210 in/sec PPV at 25 feet. At 10 feet, vibration levels could reach 0.83 in/sec PPV, which would exceed the 0.5 in/sec PPV threshold.

12c. Long-term Noise Increases

Policy 7e of the Noise Element defines the following traffic-related noise level increases associated with new projects as significant, if: (a) the noise level increase is 5 dB DNL or greater, with a future noise level of less than 60 dB DNL; or (b) the noise level increase is 3 dB DNL or greater, with a future noise level of 60 dB DNL or greater. As indicated above, existing and future noise levels on West Dunne Avenue would be 61 and 62 dB DNL within 53 feet of the roadway centerline. Based on these noise levels, a 3 dB DNL noise increase or greater would be considered significant. As indicated in the ELPA report, West Dunne Avenue currently carries 8,710 ADT (average daily traffic) and is expected to carry 11,384 ADT by 2030. Traffic levels on Monterey Road currently carry 17,780 ADT and this is estimated to increase to 25,100 ADT by 2030. Under the extremely conservative and unlikely event that all project-related traffic would travel on West Dunne Avenue and Monterey Road to access the site, the project would generate approximately 133 net new trips per day on these streets, which would constitute traffic increases of 1% and 0.5%, respectively. Such traffic increases on either of these roads would result in a noise increase of less than 1 dB, which would be less than significant.

12d. Short-Term Noise Increases

Chapter 8.28 of the Morgan Hill Municipal Code[55] prohibits construction activities (including operation of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other appliance) between 8:00 p.m. and 7:00 a.m., Monday through Friday, and between 6:00 p.m. and 9 a.m. on Saturdays. Construction activities may not occur on Sundays or federal holidays. The Morgan Hill Municipal Code does not specify any short-term noise level limits.

Project construction would result in temporary short-term noise increases due to the operation of heavy equipment. Construction equipment generates noise levels in the range of 77 to 97 dBA (L_{eq}) at 25 feet from the source. The potential for construction-related noise increases to adversely affect nearby residential receptors would depend on the location and proximity of construction activities to these receptors. Temporary disturbance (e.g., speech interference) can occur if the noise level in the interior of a building exceeds 45 to 60 dBA.[56] To maintain such interior noise levels, exterior noise levels at the closest residences (with windows closed) should not exceed 80 dBA and this exterior noise level is used as a significance threshold. The closest existing residential receptors are located approximately 20 feet to the west and 25 feet to the north, construction noise would range from 79 to 99 dBA, and such noise increases would approach and exceed the 80-dBA threshold, which would result in noticeable to loud noise conditions. Since construction is carried out in several reasonably discrete phases, each has its own mix of equipment and consequently, its own noise characteristics. Generally, the site preparation requires the use of heavy equipment such as bulldozers, loaders, scrapers, and diesel trucks. Over the course of a construction day, noise exposures at residences to the north and west are estimated to be up to 70 dB DNL, a significant temporary noise impact. Construction noise would also likely be audible in some of the offices to the east. However, implementation of noise controls specified in Mitigation Measure NOI-3 would reduce this potential impact to less than significant.

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[55] Available online at http://search.municode.com/html/16502/index.html.

[56] In indoor noise environments, the highest noise level that permits relaxed conversation with 100% intelligibility throughout the room is 45 dBA. Speech interference is considered to become intolerable when normal conversation is precluded at 3 feet, which occurs when background noise levels exceed 60 dBA (U.S. Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Condensed Version),* 1974).

12e. Airport-Related Issues

The project site is not located within an airport land use plan. There is no public airport, public use airport, or private airstrip located within two miles of the project site. The proposed project would not expose people residing or working in the area to excessive noise levels. Therefore, there would be no airport-related noise impact.

Mitigation Measures – Noise and Vibration (NOI)

To reduce the significant noise impacts identified above for project residences located along Tennant Avenue, the following noise attenuation measures will be incorporated into the project design to ensure that acceptable exterior and interior noise levels are achieved, reducing identified impacts to a less-than-significant level:

NOI-1: ***Exterior Noise Control.*** *To achieve compliance with the 60 dB DNL limit of the City of Morgan Hill Noise Element standards for the noise-impacted rear yard closest to West Dunne Avenue, the following noise control barrier shall be required:*

- *Construct six-foot high acoustically-effective barriers at the rear yard of the lot at the southeasterly corner of the site to shield the area of the rear yard that is within 72 feet of the centerline of West Dunne Avenue (see Figure 1 of Attachment 5. The barrier height is in reference to the nearest building pad elevation. Since the precise location of the rear yard for this lot is not shown on project plans, the recommended barrier location is estimated.*

  To achieve an acoustically-effective barrier, the barrier must be constructed air-tight, i.e., without cracks, gaps or other openings, and must provide for long term durability. Barriers can be constructed of masonry, wood, concrete, stucco, earth berm or a combination thereof and must have a minimum surface weight of 2.5 pounds per square foot. If wood fencing is used, homogeneous sheet materials are preferable to conventional wood fencing as the latter has a tendency to warp and form openings with age. However, high quality, air-tight, tongue-and-groove, board and batten or shiplap construction can be used. All connections with posts, pilasters or building shells must be sealed air-tight. No openings are permitted between the upper barrier components and the ground. Gates may be incorporated into the barriers, but they must be meet the minimum surface weight requirement and must seal tight when closed. The gap at the bottom of the gate shall be less than one inch.

NOI-2: ***Limit Vibratory Equipment Use.*** *Prohibit operation of large vibratory compactors within 15 feet of adjacent structures or use smaller (jumping jack) vibratory compactors within 15 feet of project boundaries in order to maintain construction-related vibration levels below the 0.5 in/sec PPV threshold at adjacent structures.*

NOI-3: ***Implement Construction Noise Controls.*** *Quiet or "new technology" equipment should be used wherever feasible. The greatest potential for noise abatement of current equipment should be the quieting of exhaust noises by use of improved mufflers. Therefore, it is recommended that all internal combustion engines used at the project site be equipped with a type of muffler recommended by the vehicle manufacturer. In addition, all equipment should be in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive-train and other components. Construction noise should also be mitigated by the following measures:*

- *Noisy operations shall be scheduled for the daytime hours (7:00 a.m. to 8:00 p.m., Monday through Friday and 9:00 a.m. to 6:00 pm. on Saturdays) in accordance with time limits specified in the City of Morgan Hill Zoning Ordinance.*

- *All diesel-powered equipment should be located more than 200 feet from any residence to the extent feasible if the equipment is to operate for more than several hours per day.*
- *Stockpiled materials should be located so that they can help block construction noise at nearby sensitive receptors.*
- *Noise reduction benefits could also be achieved by appropriate selection of equipment utilized for various operations (subject to equipment availability and cost considerations). The following measures are recommended to reduce noise impacts on nearby residents:*
  - *Earth Removal: Use scrapers as much as possible for earth removal, rather than the noisier loaders and hauling trucks.*
  - *Backfilling: Use a backhoe for backfilling, as it is less costly and quieter than either dozers or loaders.*
  - *Ground Preparation: Use a motor grader rather than a bulldozer for final grading.*
  - *Building Construction: Powers saws should be shielded or enclosed where practical to decrease noise emissions. Nail guns should be used where possible as they are less noisy than manual hammering.*
  - *Construction Phasing: Construct buildings or other significant structures at the site perimeter to help shield existing sensitive receptors from noise generated on the site.*

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
13. Population and Housing - Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

13a. Growth-Inducement Impacts

In May 2009 via special municipal election, Measure A was approved by voters which exempted from the City's Residential Development Control System (RDCS) 500 residential allotments in a 20 block area of the downtown from the Measure C population cap. The proposed project is located within the 20-block area covered by Measure A and therefore is not subject to the RDCS competition and limited allocation assignments. At this time 251 Measure A allocations are available and any of the 251 allocations assigned to the project would be subject to time limitations placed on the project via the proposed project development agreement application. The effects of the growth induced by the project proposal would be less than significant since new population could not occur until development allotments are obtained for the project area. These allotments ensure that growth induced by the project would be within the City's planned growth level.

Based upon the California Department of Finance, Demographic Research Unit, 2015 estimates for Morgan Hill household occupancy, the proposed project would increase city population by 44 persons.[57] The proposed project is consistent with the development guidelines presented in the Downtown Specific Plan and supports the goal of increasing population within the Downtown area of the city.

13b, 13c. Displacement of Housing or Residents

The subject property consists of three residential lots and a vacant parcel. Two of the residences would be demolished and one would be preserved on-site. The displacement of these two residences as a result of project development would be offset by the development of 16 new townhouses and single-family detached and attached dwellings. The proposed project would provide 14 net new residential units on the project site to serve the community's future housing needs.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
14. Public Services -				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

14a. Public Services

The City of Morgan Hill contracts with CAL FIRE (State Department of Forestry and Fire Protection) for fire protection services. There are three fire stations located within the city boundaries: El Toro Station, located at 18300 Monterey Road; Dunne-Hill Station, located at 2100 East Dunne Avenue; and the CAL FIRE station at 15670 Monterey Road. The project site is located approximately 1.3 miles south of the El Toro station, approximately 1.3 miles north of the CAL FIRE station, and approximately 2.1 miles west of the Dunne-Hill Station. The project site is within the five-minute response boundary of all three of these fire stations. Response time to the project site is approximately four minutes.

The Morgan Hill Police Department provides police protection services to incorporated areas in the project vicinity. The project site is located within the Department's normal patrol routes due to other nearby residential development located within the City.

The Morgan Hill Unified School District (MHUSD) operates public education facilities that serve the project site and surrounding area. The City of Morgan Hill is served by eight elementary schools, three middle schools, two high schools, one continuation school, and one community adult school. Current student population in the District is 9,000[58] pupils. The existing school facilities have sufficient available

[57] California Department of Finance, 2015. Accessed at: http://www.dof.ca.gov/research/demographic/dru/index.php

[58] California Department of Education, Educational Demographics Unit, 2015. http://dq.cde.ca.gov/dataquest/dataquest.asp

capacity to accommodate the approximately ten students[59] that would be generated by the proposed project.[60] Students from the proposed project would attend Walsh Elementary School, Britton Middle School, and Sobrato High School.

The project would incrementally increase demand for fire and police protection services, and generate new students at local schools. Both the City of Morgan Hill and Morgan Hill Unified School District collect development impact fees to help pay for fire and police protection capital improvements and finance additional school facilities. In general, payment of these fees is considered adequate to mitigate the project's impact on these services to a less-than-significant level.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
15. Recreation -				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

15a. Demand for Recreational Facilities

Proposed subdivision of the 1.41-acre project site would ultimately allow new residential development, which in turn would induce population growth in the Morgan Hill area. Project-related population increases would incrementally increase demand on existing recreational facilities.

15b. Impacts Related to Construction of Recreational Facilities

The project would not include the development of recreational facilities or require the construction or expansion of recreational facilities that could have adverse physical effects on the environment. The City is in the process of planning three new parks in the Downtown area to serve existing and future residents and visitors. These new recreational facilities would be available to the site's current and future residents whether or not the proposed project is constructed. Therefore, the impact related to the construction project recreational facilities would be less than significant.

[59] Based upon a MHUSD student generation rate of 0.7 K-12 students per household.

[60] Ms. Anessa Espinosa, Facilities Director, MHUSD, telephone communication November 13, 2015.

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

16a, 16b, 16e. Impacts on the Circulation System, Conflicts with Congestion Management Program, and Traffic Hazards

The proposed 17-unit residential development would add 14 net new units to the project site. These would include 11 townhouse units, two duets, and one new single-family detached is expected to generate a total of 133 daily trips with approximately 9 trips during the AM peak hour and 6 trips during the PM peak hour, for a total of 15 peak hour trips. Due to the small size of the proposed project, the impacts on adjacent and nearby roads and intersection are expected to be minimal. There is adequate available traffic capacity on adjacent and nearby streets and intersection to accommodate project-related traffic increases, and no significant impacts are anticipated. According to guidelines published by the Santa Clara Valley Transportation Authority (VTA),[48] the congestion management agency for Santa Clara County, a detailed traffic study is required only if the project is estimated to generate 100 or more peak hour trips. The City has adopted its own guidelines that are generally consistent with the County. For projects generating less than 100 peak hour trips, local jurisdictions typically require focused studies addressing site access and circulation issues.

The project would provide one covered parking space for all new residential units, or a total of 17 covered spaces. Additionally, one uncovered parking space would be available to each of the townhouse and duet units, and for one of the single-family residences. Three of the single-family residences would have sufficient driveway apron space for two uncovered parking spaces, for a total of 20 uncovered parking spaces on the project site. The Downtown Specific Plan indicates that parking requirements for the D-R3 zoning district are as specified in Chapter 18.50 (Off-Street Parking and Paving Standards) of the Zoning Ordinance. For Multi-family dwellings, the City's Zoning Ordinance requires 1.5 to 2.5 spaces per unit,

with one of the required spaces to be covered by a garage or carport. The provision of guest parking is not required for proposed residential development within the Downtown Area Residential Density Control System (RDCS) Boundary area, as described by a map on file with the city clerk.

Site access and internal streets on the project site would be required to conform to City design standards, thereby ensuring the use of approved transportation system design elements as part of the project plans. The project's proposed loop road would be private and residential units may take primary access from a private street in multi-family or mixed use zoning districts. Minimum standards for private streets are determined through a planned development zoning process, as determined by the Community Development Director in consultation with the Fire Marshall. City staff has conferred with the Community Development Director and the Fire Marshall and each has indicated that a 24-ft. wide, one-way private street is sufficient to serve the proposed residential use at the project site. Project review by the City's Building and Fire Prevention Division has identified the Americans with Disabilities Act (ADA) requirement to provide a walkway from Dunne Avenue to the proposed residences on Lots 1-11. This would require a narrowing of the drive-aisle to a minimum width of 20 ft. The City Fire Marshall has confirmed that a 20-ft. width is acceptable.

16c. Air Traffic Patterns

The project site is not located within an airport land use plan, nor is there a public airport, public use airport, or private airstrip located in the project vicinity. The San Martin Airport, approximately 3.8 miles to the southeast of the project site, is the closest airport to the property. Therefore, the project would have no impact on air traffic patterns, would not directly increase air traffic levels, nor would there be any change in location that results in substantial safety risks.

16e. Emergency Access

The project site has frontage on West Dunne Avenue and would be accessible through two connections of a loop road to West Dunne Avenue. For emergency access, the internal loop road proposed for internal circulation could be accessed from either of the two connections, ensuring efficient access by emergency vehicles. With such access, public safety impacts associated with emergency access would be less than significant.

16f. Conflicts with Alternative Transportation (Pedestrian, Bicycle, and Transit Access)

The project site's frontage along West Dunne Avenue includes sidewalk, curb, and gutter street improvements for alternative transportation such as bicyclist and pedestrian access. West Dunne Avenue is improved to City street standards that provide appropriate street widths, sidewalks, curbs, driveways, and associated improvements. There are bicycle lanes on Main Avenue and Dunne Avenue east of Monterey Road.

The proposed project would provide street access from West Dunne Avenue to the project site's internal loop road. Project access improvements would include the project's proposed loop roadway, residence driveways, curbs and gutters. The project plans do not specify sidewalks along internal road.

Current and future resident pedestrians and bicyclists in the project vicinity would be able to access the Butterfield/Morgan Hill Caltrain Station on Butterfield Boulevard. Class 2 bike lanes are provided in East Dunne Avenue, Monterey Road, Butterfield Road, and West Main Avenue in the project vicinity for access to VTA Express Bus routes (#121 and 168) on Butterfield Boulevard, VTA Local Bus Route (#16) on Main Avenue, and MST Bus Route (#55) on East Dunne Avenue. Consequently, the proposed project would support rather than conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
17. Utilities and Service Systems – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

17a, 17e. Wastewater Facilities and Service

The South County Regional Wastewater Authority operates the Gilroy – Morgan Hill Wastewater Treatment Plant. Wastewater from both cities is collected and treated at this facility in Gilroy. The wastewater treatment plant was built in 1994 and treats up to 8.5 million gallons per day (gpd) during dry weather and provides wet weather treatment for up to 11 million gpd.

The South County Regional Wastewater Authority (SCRWA) evaluated recent and future wastewater flows as part of its planning process for facilities expansion. The Agency's engineering consultant, MWH, projected dry and wet weather flows for the wastewater treatment facility in 2013.[61] Future flows were estimated using both projected permit issuances and projected populations. Based on the projections by permits, the current facility capacity of 8.5 mgd would be reached in 2021 and the Urban Growth Boundary (UGB) Average Dry Weather Flow (ADWF) of 9.6 mgd would be reached in 2027. Based on the population projections, the current facility capacity would be reached in 2020 and the UGB ADWF would be reached in 2026. For both projections, the facility capacity is predicted to exceed capacity slightly later than the 2010 analysis of flow projections. Both the projections based on permitting data and population data would be considered in planning future SCRWA facilities to ensure that the necessary permitted development and population are available to provide financial support for required facilities expansion. The SCRWA plans for treatment plant improvements beyond 2016 include expansion of the membrane bioreactor facility and improvements to the solids dewatering facilities. Both the cities of

[61] MWH Memorandum, 2013. Technical Memorandum –SCRWA Wastewater Flow Projections (2012). November 20.

Gilroy and Morgan Hill have growth control systems in place which limit unexpected increases in sewage generation.

There is an 8-inch municipal sewer line in West Dunne Avenue currently serving residential and commercial development in the project area. The City has confirmed that the existing sewer main in West Dunne Avenue can adequately serve the wastewater service demands of the proposed project.

17b, 17d. Water Facilities and Service

The City's 2010 Urban Water Management Plan (UWMP) provides a framework for the evaluation of water supply and demand for the community, and allows the City to provide long-range planning to ensure adequate supplies of water for the City. The UWMP also assists the City in developing programs to manage water use in a comprehensive manner to safeguard municipal water supplies. The City is in the process of updating the current UWMP and will complete the update process by mid-2016.

The City of Morgan Hill receives its water from two groundwater sources: the Coyote Valley subarea of the Santa Clara Subbasin and Llagas Subbasin, part of the Gilroy-Hollister Basin. Morgan Hill is situated over both the Llagas and Santa Clara groundwater subbasins. All subbasins within Santa Clara County are managed and administered by the Santa Clara Valley Water District.

Morgan Hill provides potable water service to its residential, commercial, industrial, and institutional customers within the City limits. The City's municipal water system extracts water from the underground aquifers via a series of groundwater wells distributed along the valley floor and supplies thirteen pressure zones. Water is then pumped up to service the five higher-pressure zones on both east and west sides of the valley via booster stations.

The City's water system facilities include 17 groundwater wells, 13 potable water storage tanks, 10 booster stations, and over 160 miles of pressured piping ranging from 2 to 14 inches in diameter. Gate valves and pressure-reducing valves are used to isolate or regulate flow between pressure zones. Currently, the City has an operational storage capacity equivalent to approximately 1.25 days of average water use.

The 2010 UWMP has determined that the base daily per capita water use for Morgan Hill is 198 gallons per capita per day. The California Department of Finance, Demographic Research Division,[62] provides an estimate of 3.11 persons per household for the City of Morgan Hill. Based on this household population rate and the City's per capita per day water use, the proposed project of 14 net new residences on the project site would require 8,621 gallons of water per day, or approximately 3.15 million gallons per year.

The City of Morgan Hill currently has seventeen wells drawing from the Llagas Subbasin and Coyote Valley subarea with a maximum summer pumping capacity of 18,054 AF per year; however, the City pumps only a fraction of this capacity. Since the basin is not adjudicated, the total supply available to the City is its maximum pumping capacity. Although this is available to the City, Morgan Hill does not intend to pump the full capacity available, and continues to encourage water conservation to its customers. Based upon the analysis provided by the City's UWMP, the City has sufficient capacity to provide water services to the proposed project.

17c. Stormwater Drainage Facilities

At present, a 27-inch storm drain in West Dunne Avenue receives urban storm flows from the project area. Storm runoff also drains from the project site directly into the Little Llagas Creek drainage channel

[62] E-5 Population and Housing Esitmates for Cities, Counties, and the State, 2011 – 2015 is available at: http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php

along the eastern perimeter of the project site (for more discussion on storm drainage, please see Section 9, Hydrology and Water Quality).

17f, 17g. Solid Waste

Recology South Valley (RSV) provides solid waste collection service to the City of Morgan Hill. RSV transports solid waste from the city to its transfer station in San Martin for sorting of recyclables. Solid waste not accepted at the transfer station is trucked to the John Smith Road Landfill in Hollister.

The project would incrementally increase demands on these services and public facilities. It is anticipated that the project would contribute approximately 18.3 tons of solid waste per year to the waste stream generated by the City [63] In the most recent reporting year, Morgan Hill had a landfill waste diversion rate of 62 percent, exceeding the 50 percent standard set by AB 939. The City of Morgan Hill has an RDCS process that will ensure that future development on the project site will be consistent with the growth rate in the general plan. Development of the project site with 14 net new residential dwelling would not exceed the City's planned solid waste demand that serves as the basis for the City's long-term utilities and service system infrastructure planning.

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
18. Mandatory Findings of Significance -				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

18a, 18c. Significant Impacts on the Natural and Man-Made Environments

With mitigation measures specified above in Sections 3, 4, 5, 8, 9, and 12, the proposed project would not degrade the quality of the environment. As indicated in the above discussion, the project also would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

[63] CalRecycle, 2015. Residential Waste Disposal Rates. Accessed at: http://www.calrecycle.ca.gov/WasteChar/ResDisp.htm

18b. Cumulative Impacts

The proposed project's action entailing subdivision of the 1.41-acre project parcel into 17 residential lots would not cause environmental impacts that would be cumulatively considerable when evaluated in conjunction with other current or probably projects. In November 2004, the Measure C initiative was approved by voters, which extended the City's Residential Development Control System (RDCS) until 2020. Measure C caps the population at 48,000 for the year 2020, and requires development allotments for all residential development. The project's contribution to cumulative growth effects on the city would be less than cumulatively considerable since new population could not occur until development allotments are obtained for the project site. These allotments ensure that growth induced by the project would be within the City's planned growth level.

In May 2009 via special municipal election, Measure A was approved by voters which exempted from the City's Residential Development Control System (RDCS) 500 residential allotments in a 20-block area of the downtown from the Measure C population cap. The proposed project is located within the 20-block area covered by Measure A and therefore is not subject to the RDCS competition and limited allocation assignments. At this time, 251 Measure A allocations are available and any of the 251 allocations assigned to the project would be subject to time limitations placed on the project via the proposed project development agreement application. The effects of the growth induced by the project proposal would be less than significant since new population could not occur until development allotments are obtained for the project area. These allotments ensure that growth induced by the project would be within the City's planned growth level.

ATTACHMENT 1

AIR QUALITY CALEE MOD OUTPUTS

AND

HEALTH RISK ANALYSIS SCREEN3 MODEL OUTPUT

Fairchild, Mountain View

San Francisco Bay Area Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	12.00	Dwelling Unit	0.75	12,000.00	34
Single Family Housing	5.00	Dwelling Unit	0.66	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.41 acre site

Construction Phase - Demo: 55 days, Site Prep: 2 days, Grading: 4 days, Construction: 200 days, Paving: 10 days

Off-road Equipment - Construction: 1 crane, 1 forklift, 1 generator set, 1 loader/backhoe, 3 welders

Off-road Equipment - DemoL 1 concrete saw, 1 dozer, 2 loader/backhoes

Off-road Equipment - Grading: 1 grader, 1 dozer, 1 loader/backhoe

Off-road Equipment - Paving: 1 mixer, 1 paver, 1 paving equipment, 1 roller, 1 loader/backhoe

Off-road Equipment - Prep: 1 grader, 1 dozer, 1 loader/backhoe

Demolition -

Vehicle Trips -

Construction Off-road Equipment Mitigation - water twice daily
tier 2 mitigation all equipment > 50 HP

Area Mitigation -

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	33.2271	25.8107	19.8963	0.0234	5.8750	1.4992	7.2741	2.9737	1.4070	4.2609	0.0000	2,347.9736	2,347.9736	0.5412	0.0000	2,359.3396
Total	**33.2271**	**25.8107**	**19.8963**	**0.0234**	**5.8750**	**1.4992**	**7.2741**	**2.9737**	**1.4070**	**4.2609**	**0.0000**	**2,347.9736**	**2,347.9736**	**0.5412**	**0.0000**	**2,359.3396**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9694	0.3705	28.7976	0.0392		4.0862	4.0862		4.0861	4.0861	495.8125	233.5254	729.3379	1.3562	0.0225	764.7985
Energy	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003		132.1870	132.1870	2.5300e-003	2.4200e-003	132.9915
Mobile	0.4613	0.9651	4.3373	9.4600e-003	0.6463	0.0132	0.6595	0.1729	0.0122	0.1851		801.4376	801.4376	0.0317		802.1031
Total	**16.4428**	**1.4391**	**33.1790**	**0.0493**	**0.6463**	**4.1078**	**4.7541**	**0.1729**	**4.1066**	**4.2795**	**495.8125**	**1,167.1499**	**1,662.9625**	**1.3904**	**0.0249**	**1,699.8931**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**92.84**	**24.60**	**82.52**	**79.33**	**0.00**	**98.77**	**85.34**	**0.00**	**98.80**	**94.81**	**100.00**	**-8.85**	**23.60**	**96.90**	**65.72**	**25.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	1/28/2016	5	20	
2	Site Preparation	Site Preparation	1/29/2016	2/1/2016	5	2	
3	Grading	Grading	2/2/2016	2/5/2016	5	4	
4	Building Construction	Building Construction	2/6/2016	11/11/2016	5	200	
5	Paving	Paving	11/12/2016	11/25/2016	5	10	
6	Architectural Coating	Architectural Coating	11/26/2016	12/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 42,525; Residential Outdoor: 14,175; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	23.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2461	0.0000	0.2461	0.0373	0.0000	0.0373			0.0000			0.0000
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022		2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**	**0.2461**	**1.4939**	**1.7400**	**0.0373**	**1.4022**	**1.4394**		**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0248	0.3316	0.2433	8.6000e-004	0.0200	4.4800e-003	0.0245	5.4900e-003	4.1200e-003	9.6000e-003		87.0490	87.0490	6.4000e-004		87.0625
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0406	0.0486	0.5676	1.1600e-003	0.0943	7.6000e-004	0.0951	0.0250	7.0000e-004	0.0257		97.4723	97.4723	5.0000e-003		97.5773
Total	**0.0654**	**0.3802**	**0.8109**	**2.0200e-003**	**0.1143**	**5.2400e-003**	**0.1196**	**0.0305**	**4.8200e-003**	**0.0353**		**184.5213**	**184.5213**	**5.6400e-003**		**184.6398**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	2.4428	25.7718	16.5144	0.0171		1.3985	1.3985		1.2866	1.2866		1,781.0872	1,781.0872	0.5372		1,792.3693
Total	**2.4428**	**25.7718**	**16.5144**	**0.0171**	**5.7996**	**1.3985**	**7.1981**	**2.9537**	**1.2866**	**4.2403**		**1,781.0872**	**1,781.0872**	**0.5372**		**1,792.3693**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0325	0.0389	0.4541	9.3000e-004	0.0754	6.1000e-004	0.0761	0.0200	5.6000e-004	0.0206		77.9778	77.9778	4.0000e-003		78.0618
Total	**0.0325**	**0.0389**	**0.4541**	**9.3000e-004**	**0.0754**	**6.1000e-004**	**0.0761**	**0.0200**	**5.6000e-004**	**0.0206**		**77.9778**	**77.9778**	**4.0000e-003**		**78.0618**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.9908	21.0361	13.6704	0.0141		1.1407	1.1407		1.0494	1.0494		1,462.8468	1,462.8468	0.4413		1,472.1130
Total	**1.9908**	**21.0361**	**13.6704**	**0.0141**	**4.9143**	**1.1407**	**6.0549**	**2.5256**	**1.0494**	**3.5750**		**1,462.8468**	**1,462.8468**	**0.4413**		**1,472.1130**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0325	0.0389	0.4541	9.3000e-004	0.0754	6.1000e-004	0.0761	0.0200	5.6000e-004	0.0206		77.9778	77.9778	4.0000e-003		78.0618
Total	**0.0325**	**0.0389**	**0.4541**	**9.3000e-004**	**0.0754**	**6.1000e-004**	**0.0761**	**0.0200**	**5.6000e-004**	**0.0206**		**77.9778**	**77.9778**	**4.0000e-003**		**78.0618**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1115	18.4130	13.9612	0.0205		1.2688	1.2688		1.2285	1.2285		1,900.3845	1,900.3845	0.4057		1,908.9042
Total	**3.1115**	**18.4130**	**13.9612**	**0.0205**		**1.2688**	**1.2688**		**1.2285**	**1.2285**		**1,900.3845**	**1,900.3845**	**0.4057**		**1,908.9042**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0226	0.1938	0.2313	4.8000e-004	0.0133	2.9800e-003	0.0163	3.8000e-003	2.7400e-003	6.5300e-003		47.8306	47.8306	3.8000e-004		47.8386
Worker	0.0406	0.0486	0.5676	1.1600e-003	0.0943	7.6000e-004	0.0951	0.0250	7.0000e-004	0.0257		97.4723	97.4723	5.0000e-003		97.5773
Total	**0.0632**	**0.2424**	**0.7989**	**1.6400e-003**	**0.1076**	**3.7400e-003**	**0.1113**	**0.0288**	**3.4400e-003**	**0.0322**		**145.3029**	**145.3029**	**5.3800e-003**		**145.4158**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2872	13.2076	9.0880	0.0133		0.8075	0.8075		0.7438	0.7438		1,368.4366	1,368.4366	0.4053		1,376.9473
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2872**	**13.2076**	**9.0880**	**0.0133**		**0.8075**	**0.8075**		**0.7438**	**0.7438**		**1,368.4366**	**1,368.4366**	**0.4053**		**1,376.9473**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0527	0.0631	0.7379	1.5100e-003	0.1226	9.9000e-004	0.1236	0.0325	9.0000e-004	0.0334		126.7140	126.7140	6.5000e-003		126.8504
Total	**0.0527**	**0.0631**	**0.7379**	**1.5100e-003**	**0.1226**	**9.9000e-004**	**0.1236**	**0.0325**	**9.0000e-004**	**0.0334**		**126.7140**	**126.7140**	**6.5000e-003**		**126.8504**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.8506					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**33.2190**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	8.1100e-003	9.7100e-003	0.1135	2.3000e-004	0.0189	1.5000e-004	0.0190	5.0000e-003	1.4000e-004	5.1400e-003		19.4945	19.4945	1.0000e-003		19.5155
Total	**8.1100e-003**	**9.7100e-003**	**0.1135**	**2.3000e-004**	**0.0189**	**1.5000e-004**	**0.0190**	**5.0000e-003**	**1.4000e-004**	**5.1400e-003**		**19.4945**	**19.4945**	**1.0000e-003**		**19.5155**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4613	0.9651	4.3373	9.4600e-003	0.6463	0.0132	0.6595	0.1729	0.0122	0.1851		801.4376	801.4376	0.0317		802.1031
Unmitigated	0.4613	0.9651	4.3373	9.4600e-003	0.6463	0.0132	0.6595	0.1729	0.0122	0.1851		801.4376	801.4376	0.0317		802.1031

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	79.08	85.92	72.84	176,727	176,727
Single Family Housing	47.85	50.40	43.85	106,356	106,356
Total	126.93	136.32	116.69	283,083	283,083

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546114	0.062902	0.174648	0.122995	0.034055	0.004856	0.015640	0.024397	0.002087	0.003279	0.006673	0.000688	0.001667

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003		132.1870	132.1870	2.5300e-003	2.4200e-003	132.9915
NaturalGas Unmitigated	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003		132.1870	132.1870	2.5300e-003	2.4200e-003	132.9915

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	640.261	6.9000e-003	0.0590	0.0251	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003		75.3248	75.3248	1.4400e-003	1.3800e-003	75.7833
Single Family Housing	483.328	5.2100e-003	0.0445	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003		56.8621	56.8621	1.0900e-003	1.0400e-003	57.2082
Total		**0.0121**	**0.1035**	**0.0441**	**6.6000e-004**		**8.3700e-003**	**8.3700e-003**		**8.3700e-003**	**8.3700e-003**		**132.1870**	**132.1870**	**2.5300e-003**	**2.4200e-003**	**132.9915**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7042	0.0165	1.4183	7.0000e-005		0.0289	0.0289		0.0286	0.0286	0.0000	336.7960	336.7960	8.9400e-003	6.1300e-003	338.8835
Unmitigated	15.9694	0.3705	28.7976	0.0392		4.0862	4.0862		4.0861	4.0861	495.8125	233.5254	729.3379	1.3562	0.0225	764.7985

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1800					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4494					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	15.2959	0.3540	27.3810	0.0391		4.0785	4.0785		4.0784	4.0784	495.8125	231.0000	726.8125	1.3537	0.0225	762.2199
Landscaping	0.0441	0.0165	1.4167	7.0000e-005		7.6900e-003	7.6900e-003		7.6900e-003	7.6900e-003		2.5254	2.5254	2.5300e-003		2.5786
Total	**15.9694**	**0.3705**	**28.7976**	**0.0392**		**4.0862**	**4.0862**		**4.0861**	**4.0861**	**495.8125**	**233.5254**	**729.3379**	**1.3562**	**0.0225**	**764.7985**

Fairchild, Mountain View

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	12.00	Dwelling Unit	0.75	12,000.00	34
Single Family Housing	5.00	Dwelling Unit	0.66	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1.41 acre site

Construction Phase - Demo: 20 days, Site Prep: 2 days, Grading: 4 days, Construction: 200 days, Paving: 10 days

Off-road Equipment - Construction: 1 crane, 1 forklift, 1 generator set, 1 loader/backhoe, 3 welders

Off-road Equipment - DemoL 1 concrete saw, 1 dozer, 2 loader/backhoes

Off-road Equipment - Grading: 1 grader, 1 dozer, 1 loader/backhoe

Off-road Equipment - Paving: 1 mixer, 1 paver, 1 paving equipment, 1 roller, 1 loader/backhoe

Off-road Equipment - Prep: 1 grader, 1 dozer, 1 loader/backhoe

Demolition -

Vehicle Trips -

Construction Off-road Equipment Mitigation - water twice daily
tier 2 mitigation all equipment > 50 HP

Area Mitigation -

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6893	2.2791	1.7920	2.6000e-003	0.0305	0.1519	0.1825	0.0117	0.1463	0.1581	0.0000	220.1233	220.1233	0.0456	0.0000	221.0817
Total	**0.6893**	**2.2791**	**1.7920**	**2.6000e-003**	**0.0305**	**0.1519**	**0.1825**	**0.0117**	**0.1463**	**0.1581**	**0.0000**	**220.1233**	**220.1233**	**0.0456**	**0.0000**	**221.0817**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1618	2.4100e-003	0.2003	1.0000e-004		0.0115	0.0115		0.0115	0.0115	1.1688	0.7173	1.8861	3.1800e-003	6.0000e-005	1.9704
Energy	2.2100e-003	0.0189	8.0400e-003	1.2000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	47.2232	47.2232	1.5700e-003	6.4000e-004	47.4539
Mobile	0.0762	0.1741	0.7645	1.5100e-003	0.1053	2.2400e-003	0.1076	0.0283	2.0600e-003	0.0303	0.0000	116.4731	116.4731	4.8600e-003	0.0000	116.5752
Waste						0.0000	0.0000		0.0000	0.0000	2.3141	0.0000	2.3141	0.1368	0.0000	5.1860
Water						0.0000	0.0000		0.0000	0.0000	0.3514	2.4545	2.8059	0.0362	8.8000e-004	3.8375
Total	**0.2403**	**0.1954**	**0.9729**	**1.7300e-003**	**0.1053**	**0.0152**	**0.1206**	**0.0283**	**0.0151**	**0.0433**	**3.8343**	**166.8681**	**170.7024**	**0.1826**	**1.5800e-003**	**175.0231**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	1/28/2016	5	20	
2	Site Preparation	Site Preparation	1/29/2016	2/1/2016	5	2	
3	Grading	Grading	2/2/2016	2/5/2016	5	4	
4	Building Construction	Building Construction	2/6/2016	11/11/2016	5	200	
5	Paving	Paving	11/12/2016	11/25/2016	5	10	
6	Architectural Coating	Architectural Coating	11/26/2016	12/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 42,525; Residential Outdoor: 14,175; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	23.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	10.00	2.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0257	0.2500	0.1909	2.1000e-004		0.0149	0.0149		0.0140	0.0140	0.0000	19.6265	19.6265	4.8200e-003	0.0000	19.7277
Total	**0.0257**	**0.2500**	**0.1909**	**2.1000e-004**	**2.4600e-003**	**0.0149**	**0.0174**	**3.7000e-004**	**0.0140**	**0.0144**	**0.0000**	**19.6265**	**19.6265**	**4.8200e-003**	**0.0000**	**19.7277**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	3.4400e-003	2.9700e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.4000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.7889	0.7889	1.0000e-005	0.0000	0.7890
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	5.5000e-004	5.3200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8232	0.8232	5.0000e-005	0.0000	0.8241
Total	**6.5000e-004**	**3.9900e-003**	**8.2900e-003**	**2.0000e-005**	**1.1000e-003**	**5.0000e-005**	**1.1500e-003**	**2.9000e-004**	**5.0000e-005**	**3.4000e-004**	**0.0000**	**1.6121**	**1.6121**	**6.0000e-005**	**0.0000**	**1.6132**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4400e-003	0.0258	0.0165	2.0000e-005		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	1.6158	1.6158	4.9000e-004	0.0000	1.6260
Total	**2.4400e-003**	**0.0258**	**0.0165**	**2.0000e-005**	**5.8000e-003**	**1.4000e-003**	**7.2000e-003**	**2.9500e-003**	**1.2900e-003**	**4.2400e-003**	**0.0000**	**1.6158**	**1.6158**	**4.9000e-004**	**0.0000**	**1.6260**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	4.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0659	0.0659	0.0000	0.0000	0.0659
Total	**3.0000e-005**	**4.0000e-005**	**4.3000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0659**	**0.0659**	**0.0000**	**0.0000**	**0.0659**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0421	0.0273	3.0000e-005		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	2.6541	2.6541	8.0000e-004	0.0000	2.6710
Total	**3.9800e-003**	**0.0421**	**0.0273**	**3.0000e-005**	**9.8300e-003**	**2.2800e-003**	**0.0121**	**5.0500e-003**	**2.1000e-003**	**7.1500e-003**	**0.0000**	**2.6541**	**2.6541**	**8.0000e-004**	**0.0000**	**2.6710**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	9.0000e-005	8.5000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1317	0.1317	1.0000e-005	0.0000	0.1319
Total	**6.0000e-005**	**9.0000e-005**	**8.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1317**	**0.1317**	**1.0000e-005**	**0.0000**	**0.1319**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3112	1.8413	1.3961	2.0500e-003		0.1269	0.1269		0.1229	0.1229	0.0000	172.4000	172.4000	0.0368	0.0000	173.1729
Total	**0.3112**	**1.8413**	**1.3961**	**2.0500e-003**		**0.1269**	**0.1269**		**0.1229**	**0.1229**	**0.0000**	**172.4000**	**172.4000**	**0.0368**	**0.0000**	**173.1729**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5500e-003	0.0201	0.0296	5.0000e-005	1.2900e-003	3.0000e-004	1.5900e-003	3.7000e-004	2.7000e-004	6.4000e-004	0.0000	4.3252	4.3252	3.0000e-005	0.0000	4.3259
Worker	3.7900e-003	5.4900e-003	0.0532	1.1000e-004	9.0700e-003	8.0000e-005	9.1500e-003	2.4100e-003	7.0000e-005	2.4800e-003	0.0000	8.2319	8.2319	4.5000e-004	0.0000	8.2415
Total	**6.3400e-003**	**0.0255**	**0.0828**	**1.6000e-004**	**0.0104**	**3.8000e-004**	**0.0107**	**2.7800e-003**	**3.4000e-004**	**3.1200e-003**	**0.0000**	**12.5571**	**12.5571**	**4.8000e-004**	**0.0000**	**12.5674**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.4400e-003	0.0660	0.0454	7.0000e-005		4.0400e-003	4.0400e-003		3.7200e-003	3.7200e-003	0.0000	6.2071	6.2071	1.8400e-003	0.0000	6.2457
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4400e-003**	**0.0660**	**0.0454**	**7.0000e-005**		**4.0400e-003**	**4.0400e-003**		**3.7200e-003**	**3.7200e-003**	**0.0000**	**6.2071**	**6.2071**	**1.8400e-003**	**0.0000**	**6.2457**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.6000e-004	3.4600e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5351	0.5351	3.0000e-005	0.0000	0.5357
Total	**2.5000e-004**	**3.6000e-004**	**3.4600e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5351**	**0.5351**	**3.0000e-005**	**0.0000**	**0.5357**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0237	0.0188	3.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	2.5533	2.5533	3.0000e-004	0.0000	2.5596
Total	**0.3322**	**0.0237**	**0.0188**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**2.5533**	**2.5533**	**3.0000e-004**	**0.0000**	**2.5596**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	1.1000e-004	1.0600e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1646	0.1646	1.0000e-005	0.0000	0.1648
Total	**8.0000e-005**	**1.1000e-004**	**1.0600e-003**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1646**	**0.1646**	**1.0000e-005**	**0.0000**	**0.1648**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0762	0.1741	0.7645	1.5100e-003	0.1053	2.2400e-003	0.1076	0.0283	2.0600e-003	0.0303	0.0000	116.4731	116.4731	4.8600e-003	0.0000	116.5752
Unmitigated	0.0762	0.1741	0.7645	1.5100e-003	0.1053	2.2400e-003	0.1076	0.0283	2.0600e-003	0.0303	0.0000	116.4731	116.4731	4.8600e-003	0.0000	116.5752

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	79.08	85.92	72.84	176,727	176,727
Single Family Housing	47.85	50.40	43.85	106,356	106,356
Total	126.93	136.32	116.69	283,083	283,083

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546114	0.062902	0.174648	0.122995	0.034055	0.004856	0.015640	0.024397	0.002087	0.003279	0.006673	0.000688	0.001667

4.4 Fleet Mix

5.0 Energy Detail

5.0 Energy Detail

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	233695	1.2600e-003	0.0108	4.5800e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4709	12.4709	2.4000e-004	2.3000e-004	12.5468
Single Family Housing	176415	9.5000e-004	8.1300e-003	3.4600e-003	5.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	9.4142	9.4142	1.8000e-004	1.7000e-004	9.4715
Total		**2.2100e-003**	**0.0189**	**8.0400e-003**	**1.2000e-004**		**1.5300e-003**	**1.5300e-003**		**1.5300e-003**	**1.5300e-003**	**0.0000**	**21.8850**	**21.8850**	**4.2000e-004**	**4.0000e-004**	**22.0182**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	51734.4	15.0501	6.8000e-004	1.4000e-004	15.1081
Single Family Housing	35364.7	10.2880	4.7000e-004	1.0000e-004	10.3276
Total		**25.3381**	**1.1500e-003**	**2.4000e-004**	**25.4357**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1189	1.4900e-003	0.1275	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	0.9743	0.9743	2.2000e-004	1.0000e-005	0.9833
Unmitigated	0.1618	2.4100e-003	0.2003	1.0000e-004		0.0115	0.0115		0.0115	0.0115	1.1688	0.7173	1.8861	3.1800e-003	6.0000e-005	1.9704

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0329					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0820					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0430	9.2000e-004	0.0728	9.0000e-005		0.0108	0.0108		0.0108	0.0108	1.1688	0.5111	1.6799	2.9700e-003	6.0000e-005	1.7599
Landscaping	3.9700e-003	1.4900e-003	0.1275	1.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	0.2062	0.2062	2.1000e-004	0.0000	0.2105
Total	**0.1618**	**2.4100e-003**	**0.2003**	**1.0000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**1.1688**	**0.7173**	**1.8861**	**3.1800e-003**	**6.0000e-005**	**1.9704**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.8059	0.0362	8.7000e-004	3.8369
Unmitigated	2.8059	0.0362	8.8000e-004	3.8375

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	0.781848 / 0.492904	1.9806	0.0256	6.2000e-004	2.7088
Single Family Housing	0.32577 / 0.205377	0.8253	0.0107	2.6000e-004	1.1287
Total		**2.8059**	**0.0362**	**8.8000e-004**	**3.8375**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.3141	0.1368	0.0000	5.1860
Unmitigated	2.3141	0.1368	0.0000	5.1860

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	5.52	1.1205	0.0662	0.0000	2.5111
Single Family Housing	5.88	1.1936	0.0705	0.0000	2.6749
Total		**2.3141**	**0.1368**	**0.0000**	**5.1861**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

AERSCREEN 11126 / AERMOD 1335 03/30/15
14:09:39

TITLE: EDunne Unmit

********** AREA PARAMETERS **********

SOURCE EMISSION RATE: 0.416E-02 g/s 0.330E-01 lb/hr

AREA EMISSION RATE: 0.717E-06 g/(s-m2) 0.569E-05 lb/(hr-m2)
AREA HEIGHT: 4.57 meters 15.00 feet
AREA SOURCE LONG SIDE: 79.25 meters 260.00 feet
AREA SOURCE SHORT SIDE: 73.15 meters 240.00 feet
INITIAL VERTICAL DIMENSION: 4.57 meters 15.00 feet
RURAL OR URBAN: URBAN
POPULATION: 40000

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	2.148	45	25.0	SUM

* = worst case diagonal

```
---------------------------------------------------------------------------
**********************  MAKEMET METEOROLOGY PARAMETERS  ********************
---------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    249.8 / 310.9 (K)

MINIMUM WIND SPEED:       3.0 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Summer

ALBEDO:                 0.16
BOWEN RATIO:            2.00
ROUGHNESS LENGTH:       1.000 (meters)


     METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
     -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 07   7 12

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
  4.44  0.524  0.600  0.020 1492.  873.  -2490.2 1.000   2.00   0.16    3.00

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   249.8    2.0


     METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT
     --------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 09   7 12

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
  3.50  0.523  0.600  0.020 2127.  871.  -3530.5 1.000   1.00   0.14    3.00

   HT  REF TA     HT
```

- - - - - - - - - - -
10.0 280.4 2.0

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	1.826	2525.00	0.2277E-02
25.00	2.148	2550.00	0.2245E-02
50.00	2.146	2575.00	0.2215E-02
75.00	0.7853	2600.00	0.2185E-02
100.00	0.4457	2625.00	0.2156E-02
125.00	0.3047	2650.00	0.2127E-02
150.00	0.2267	2675.00	0.2100E-02
175.00	0.1774	2700.00	0.2072E-02
200.00	0.1438	2725.00	0.2046E-02
225.00	0.1196	2750.00	0.2020E-02
250.00	0.1015	2775.00	0.1994E-02
275.00	0.8750E-01	2800.00	0.1969E-02
300.00	0.7636E-01	2825.00	0.1945E-02
325.00	0.6734E-01	2850.00	0.1921E-02
350.00	0.5993E-01	2875.00	0.1898E-02
375.00	0.5377E-01	2900.00	0.1875E-02
400.00	0.4857E-01	2925.00	0.1852E-02
425.00	0.4411E-01	2950.00	0.1831E-02
450.00	0.4027E-01	2975.00	0.1809E-02
475.00	0.3694E-01	3000.00	0.1788E-02
500.00	0.3402E-01	3025.00	0.1767E-02
525.00	0.3146E-01	3050.00	0.1747E-02
550.00	0.2919E-01	3075.00	0.1727E-02
575.00	0.2717E-01	3100.00	0.1708E-02
600.00	0.2536E-01	3125.00	0.1689E-02
625.00	0.2373E-01	3150.00	0.1670E-02
650.00	0.2226E-01	3175.00	0.1652E-02
675.00	0.2092E-01	3200.00	0.1634E-02
700.00	0.1971E-01	3225.00	0.1616E-02
725.00	0.1861E-01	3250.00	0.1599E-02
750.00	0.1760E-01	3275.00	0.1582E-02
775.00	0.1667E-01	3300.00	0.1565E-02
800.00	0.1581E-01	3325.00	0.1549E-02
825.00	0.1503E-01	3350.00	0.1532E-02

850.00	0.1430E-01	3375.00	0.1517E-02
875.00	0.1362E-01	3400.00	0.1501E-02
900.00	0.1299E-01	3425.00	0.1486E-02
925.00	0.1241E-01	3450.00	0.1471E-02
950.00	0.1186E-01	3475.00	0.1456E-02
975.00	0.1135E-01	3500.00	0.1442E-02
1000.00	0.1087E-01	3525.00	0.1427E-02
1025.00	0.1042E-01	3550.00	0.1413E-02
1050.00	0.1005E-01	3575.00	0.1400E-02
1075.00	0.9650E-02	3600.00	0.1386E-02
1100.00	0.9276E-02	3625.00	0.1373E-02
1125.00	0.8923E-02	3650.00	0.1360E-02
1150.00	0.8591E-02	3675.00	0.1347E-02
1175.00	0.8276E-02	3700.00	0.1334E-02
1200.00	0.7979E-02	3725.00	0.1322E-02
1225.00	0.7698E-02	3750.00	0.1310E-02
1250.00	0.7431E-02	3775.00	0.1297E-02
1275.00	0.7178E-02	3800.00	0.1286E-02
1300.00	0.6937E-02	3825.00	0.1274E-02
1325.00	0.6709E-02	3850.00	0.1262E-02
1350.00	0.6492E-02	3875.00	0.1251E-02
1375.00	0.6285E-02	3900.00	0.1240E-02
1400.00	0.6090E-02	3925.00	0.1229E-02
1425.00	0.5905E-02	3950.00	0.1218E-02
1450.00	0.5728E-02	3975.00	0.1208E-02
1475.00	0.5559E-02	4000.00	0.1197E-02
1500.00	0.5397E-02	4025.00	0.1187E-02
1525.00	0.5242E-02	4050.00	0.1177E-02
1550.00	0.5094E-02	4075.00	0.1167E-02
1574.99	0.4952E-02	4100.00	0.1157E-02
1600.00	0.4816E-02	4125.00	0.1147E-02
1625.00	0.4686E-02	4150.00	0.1137E-02
1650.00	0.4560E-02	4175.00	0.1128E-02
1675.00	0.4440E-02	4200.00	0.1119E-02
1700.00	0.4328E-02	4225.00	0.1110E-02
1725.00	0.4221E-02	4250.00	0.1100E-02
1750.00	0.4118E-02	4275.00	0.1092E-02
1775.00	0.4018E-02	4300.00	0.1083E-02
1800.00	0.3922E-02	4325.00	0.1074E-02
1825.00	0.3830E-02	4350.00	0.1066E-02
1850.00	0.3741E-02	4375.00	0.1057E-02
1875.00	0.3654E-02	4400.00	0.1049E-02
1900.00	0.3571E-02	4425.00	0.1041E-02
1924.99	0.3491E-02	4450.00	0.1033E-02
1950.00	0.3414E-02	4475.00	0.1025E-02
1975.00	0.3339E-02	4500.00	0.1017E-02
2000.00	0.3266E-02	4525.00	0.1009E-02
2025.00	0.3196E-02	4550.00	0.1001E-02
2050.00	0.3128E-02	4575.00	0.9938E-03

2075.00	0.3062E-02	4599.99	0.9863E-03
2100.00	0.2999E-02	4625.00	0.9790E-03
2125.00	0.2937E-02	4650.00	0.9717E-03
2150.00	0.2877E-02	4675.00	0.9646E-03
2175.00	0.2819E-02	4700.00	0.9575E-03
2200.00	0.2764E-02	4725.00	0.9505E-03
2225.00	0.2720E-02	4750.00	0.9437E-03
2250.00	0.2678E-02	4774.99	0.9369E-03
2275.00	0.2636E-02	4800.00	0.9301E-03
2300.00	0.2596E-02	4825.00	0.9235E-03
2325.00	0.2557E-02	4850.00	0.9170E-03
2350.00	0.2519E-02	4875.00	0.9105E-03
2375.00	0.2481E-02	4900.00	0.9042E-03
2400.00	0.2445E-02	4924.99	0.8979E-03
2425.00	0.2410E-02	4950.00	0.8916E-03
2449.99	0.2375E-02	4975.00	0.8855E-03
2475.00	0.2342E-02	5000.00	0.8794E-03
2500.00	0.2309E-02		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	2.271	2.271	2.271	2.271	N/A

DISTANCE FROM SOURCE 37.00 meters

IMPACT AT THE AMBIENT BOUNDARY	1.826	1.826	1.826	1.826	N/A

DISTANCE FROM SOURCE 1.00 meters

ATTACHMENT 2

BIOLOGICAL RESOURCE ASSESSMENT

FOR THE

OAK CREEK SUBDIVISION

CITY OF MORGAN HILL

SANTA CLARA COUNTY, CALIFORNIA

BY

WOOD BIOLOGICAL CONSULTING, INC.

MARCH 25, 2015

BIOLOGICAL RESOURCE ASSESSMENT FOR THE OAK CREEK SUBDIVISION CITY OF MORGAN HILL SANTA CLARA COUNTY, CALIFORNIA

March 25, 2015

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The information provided in this document is intended solely for the use and benefit of Geier & Geier Consulting, Inc. and the City of Morgan Hill.

No other person or entity shall be entitled to rely on the services, opinions, recommendations, plans or specifications provided herein, without the express written consent of Wood Biological Consulting, Inc.

TABLE OF CONTENTS

SECTION PAGE
SUMMARY ..... *ii*
LIST OF ABBREVIATED TERMS USED IN THIS DOCUMENT ..... *iv*
LIST OF SCIENTIFIC PLANT NAMES ..... *v*
LIST OF SCIENTIFIC ANIMAL NAMES ..... *vi*
1.0 INTRODUCTION 1
1.1 PROJECT BACKGROUND AND DESCRIPTION 1
2.0 METHODS AND LIMITATIONS 4
3.0 SETTING 4
3.1 PLANT COMMUNITIES 5
3.2 WILDLIFE HABITATS 7
3.3 WILDLIFE MOVEMENT CORRIDORS 8
3.4 JURISDICTIONAL FEATURES 9
4.0 SPECIAL-STATUS BIOLOGICAL RESOURCES 13
4.1 SPECIAL-STATUS NATURAL COMMUNITIES 13
4.2 SPECIAL-STATUS PLANT SPECIES 14
4.3 SPECIAL-STATUS ANIMAL SPECIES 18
5.0 DISCUSSION 31
5.1 SPECIAL-STATUS NATURAL COMMUNITIES 32
5.2 SPECIAL-STATUS PLANT SPECIES 34
5.3 SPECIAL-STATUS ANIMAL SPECIES 34
6.0 LITERATURE CITED 39

LIST OF FIGURES

FIGURE PAGE
Figure 1. Project Location 2
Figure 2. Aerial Views of the Study Area 3
Figure 3. Preliminary Limits of Jurisdiction 10
Figure 4. Rare Plant Records in Project Vicinity 16
Figure 5. Rare Animal Records in Project Vicinity 19

LIST OF TABLES

TABLE PAGE
Table 1. Summary of Special-Status Plants Recorded from the Project Vicinity* 17
Table 2. Summary of Special-Status Animals Recorded from the Project Vicinity* 20

LIST OF APPENDICES

A Site Photographs
B Database Printouts for Special-Status Species
C Explanation of Rarity Status Codes

SUMMARY

This report presents the results of an assessment of existing or potentially occurring biological constraints to the proposed construction of a 19-lot residential subdivision in the City of Morgan Hill, Santa Clara County. It has been prepared in support of the environmental review by the City of Morgan Hill. The report provides background and site-specific information pertaining to special-status plant and wildlife species and other regulated biological resources (e.g., wetlands), which may represent constraints to the proposed project. The conclusions contained herein are based on background research, a single reconnaissance-level site survey performed by a qualified biologist, and review of the design features.

The study area encompasses four contiguous parcels (APN 767-08-035, 036, 037 and 038) located at 35-59 West Dunne Avenue. The partially developed lots cover a total of 0.57 ha (1.41 ac). The proposed project calls for the demolition of one dwelling, three garages and a barn; preservation of two of the existing single-family homes, subdividing the four parcels into 19 lots, and the construction of 12 townhomes and five detached single-family residences. Mature trees and shrubs and other landscaping would also be cleared from the site.

Although located in an urban setting, the mostly undeveloped project site supports native oaks and non-native grassland characteristic of more rural areas nearby. An unnamed, heavily engineered flood control channel flows along the eastern edge of the study area; the channel is a tributary to Little Llagas Creek.

No special-status plant associations occur within the study area. However, the flood control channel is expected to qualify as a waters of the U.S. and a waters of the State; impacts below the tops of bank would be regulated and fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Although the proposed project would not result in direct impacts on the channel below the tops of bank, project implementation could result in adverse effects on water quality both during and after construction. Impact avoidance measures are warranted; these are outlined in the report.

The potential for occurrence of a total of 61 special-status plant species was evaluated; the occurrence of each of these can be ruled out entirely based on the altered nature of the subject parcel and surroundings, soil types, existing habitats. No special-status plant species are expected on site. No additional surveys or impact avoidance measures are warranted.

The potential for occurrence of a total of 28 special-status animal species was evaluated. The potential for occurrence of 20 of the target species can be ruled out

entirely based on the developed nature of the subject parcel and surroundings, soil types, existing habitats, and geographic location. The potential exists for the occurrence on site of eight of the target species on site, including one species that is a state candidate for listing (Townsend's big-eared bat), one state fully protected species (white-tailed kite), and six other special-status species (hoary bat, long-eared myotis, Pacific pond turtle, pallid bat, San Francisco dusky-footed woodrat, and Yuma myotis), as well as numerous migratory birds species. Project implementation could result in significant adverse direct and indirect effects on special-status animal species. Impact avoidance measures are warranted; these are outlined in the report.

With the incorporation of the avoidance measures outlined in this report, **project implementation would not result in any potentially significant adverse biological effects to the environment.**

LIST OF ABBREVIATED TERMS USED IN THIS DOCUMENT

acronym	explanation	acronym	explanation
°C	degrees Celsius	ha	hectare
°F	degrees Fahrenheit	in	inches
ac	acre	LSAP	Lake and Streambed Alteration Program
APN	assessor's parcel number	m/m^2	meters/square meters
BGEPA	Bald/Golden Eagle Protection Act	MBTA	Migratory Bird Treaty Act
BLM	Bureau of Land Management	MBTRA	Migratory Bird Treaty Reform Act
BMPs	Best Management Practices	MSL	mean sea level
CA	California	NOAA	National Oceanic and Atmospheric Administration
CDFG	CA Dept. of Fish and Game	Occ. #	CNDDB species occurrence no.
CDFW	CA Dept. of Fish and Wildlife	OHWM	ordinary high water mark
CEQA	CA Environmental Quality Act	RWQCB	Reg. Water Quality Control Board
CESA	CA Endangered Species Act	TWBB	Townsend's western big-eared bat
CFGC	CA Fish and Game Code	USACE	U.S. Army Corps of Engineers
CFR	Code of Federal Regulations	USC	United States Code
cm	centimeters	USDA	U.S. Dept. of Agriculture
CNDDB	CA Natural Diversity Database	USEPA	U.S. Environmental Protection Agency
CNPPA	CA Native Plant Protection Act	USFS	U.S. Forest Service
CNPS	CA Native Plant Society	USFWS	U.S. Fish and Wildlife Service
CWA	Clean Water Act	USGS	U.S. Geological Survey
FESA	Federal Endangered Species Act	WBWG	Western Bat Working Group
ft/ft^2	feet/square feet		

LIST OF SCIENTIFIC PLANT NAMES

Scientific names of the plants referred to in the text

Common Name	Scientific Name	Common Name	Scientific Name
arcuate bush-mallow	***Malacothamnus arcuatus***	foxtail barley*	*Hordeum murinum* ssp. *leporinum*
bedstraw	*Galium aparine*	Italian thistle**	*Carduus pycnocephalus*
Bermuda buttercup**	*Oxalis pes-caprae*	miner's lettuce	*Claytonia perfoliata*
bittercress	*Cardamine oligosperma*	**most beautiful jewelflower**	***Streptanthus albidus* ssp. *peramoenus***
black walnut	*Juglans californica*	myoporum**	*Myoporum laetum*
Brazilian peppertree**	*Schinus terebinthifolius*	rattail fescue**	*Festuca myuros (Vulpia m.)*
bristly ox-tongue**	*Helminthotheca echoides (Picris e.)*	ripgut brome**	*Bromus diandrus*
CA bay	*Umbellularia californica*	**Santa Clara Valley dudleya**	***Dudleya abramsii* ssp. *setchellii***
cherry plum**	*Prunus cerasifera*	**smooth lessingia**	***Lessingua micradenia* var. *glabrata***
coast live oak	*Quercus agrifolia*	spiny sowthistle*	*Sonchus asper* ssp. *asper*
common chickweed*	*Stellaria media* var. *media*	sweet almond*	*Prunus dulcis*
common groundsel*	*Senecio vulgaris*	toyon	*Heteromeles arbutifolia*
coyote ceanothus	***Ceanothus ferrisae***	valley oak	*Quercus lobata*
cutleaf geranium**	*Geranium dissectum*	white-flowered onion*	*Allium triquetrum*
deodar cedar*	*Cedrus deodara*	wild cucumber	*Marah fabaceus*
European olive**	*Olea europea*	wild oats**	*Avena fatua*
fiddle-leaf dock*	*Rumex pulcher*	**woodland woollythreads**	***Monolepis gracilens***
field hedge parsley**	*Torilis arvensis*		

LIST OF SCIENTIFIC ANIMAL NAMES

Scientific names of the animals referred to in the text

Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
American crow	*Corvus brachyrhynchos*	Norway rat	*Rattus norvegicus*
bay checkerspot butterfly	***Euphydryas editha bayensis***	**Opler's longhorn moth**	***Adela oplerella***
black rat	*Rattus rattus*	**Pacific pond turtle**	***Emys marmorata***
burrowing owl	***Athene cunicularia***	pocket gopher	*Thomomys* sp.
CA red-legged frog	***Rana draytonii***	raccoon	*Procyon lotor*
CA tiger salamander	***Ambystoma californiense***	red fox	*Vulpes vulpes*
cat, feral or house	*Felis catus*	striped skunk	*Mephitis mephitis*
coyote	*Canis latrans*	Virginia opossum	*Didelphis virginiana*
Hom's micro-blind harvestman	***Microcina homi***	western scrub-jay	*Aphelocoma californica*
northern mockingbird	*Mimus polyglottos*		

1.0 INTRODUCTION

This report presents the results of an assessment of existing or potentially occurring biological constraints to the proposed construction of a 19-lot residential subdivision in the City of Morgan Hill, Santa Clara County. As the lead agency, the City of Morgan Hill requires that an evaluation of potentially significant adverse effects on biological resources be prepared to assist it in completing its analysis of impacts pursuant to the California Environmental Quality Act (CEQA).

1.1 Project Background and Description

The study area encompasses four contiguous parcels (APN 767-08-035, 036, 037 and 038). The four lots are located at 35-59 West Dunne Avenue (Figures 1 and 2). The partially developed lots cover a total of 0.57 ha (1.41 ac). The proposed project calls for the demolition of one dwelling, three garages and a barn; preservation of two of the existing single-family homes, subdividing the four parcels into 19 lots, and the construction of 12 townhomes, five detached single-family residences, and a new detached garage for one of the existing residences. Mature trees and shrubs and other landscaping would also be cleared from the site. Based on the arborist report, 18 trees would be preserved and five are recommended for removal (Mighty Tree Movers, 2013).

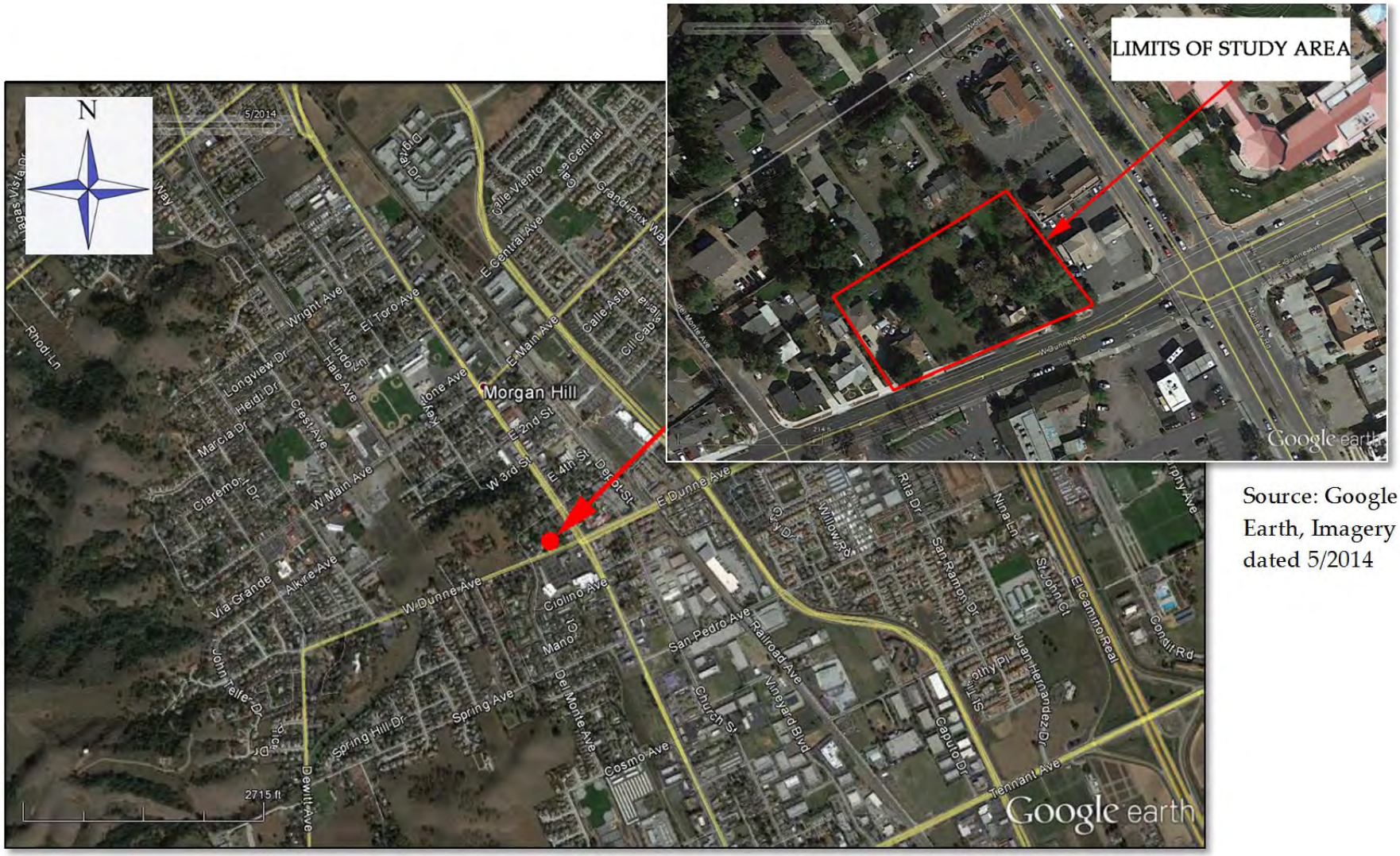
The 12 townhomes would be contained in three buildings; each unit would be 133-173 m^2 (1428-1857 ft^2) in size. The five new lots for the detached single-family homes would be 117-173 m^2 (1257-1857 ft^2) in size. The lots supporting the existing homes would be 103 m^2 (1107 ft^2) and 106 m^2 (1141 ft^2) in size.

The project site plan indicates that the six single-family residences proposed for Lots 13 through 17 and Lot 19 would front on West Dunne Avenue. An access road would be extended from West Dunne Avenue on the eastern end of the site and loop through the project, connecting again with West Dunne Avenue at the western boundary of the project site. The loop road would provide access to serve the remaining single-family and townhouse residential lots. Lots 1 through 12 would be situated around the outside of the loop road on the northern side of the project site, while providing vehicle access to the single-family lots in the southern half of the property. The project access road would be 7.3 m (24 ft) wide, covering an area of 1624 m^2 (17462 ft^2).

Proposed off-site improvements include the installation of sidewalks, curb and gutters, public utility relocation, and street tree plantings along West Dunne Avenue. Public utilities are available to the project site from West Dunne Avenue and would be extended with the on-site road improvements.

Source: Google Maps

Figure 1. Project Location



Source: Google Earth, Imagery dated 5/2014

Figure 2. Aerial Views of the Study Area

2.0 METHODS AND LIMITATIONS

The findings for this biological constraints assessment are based on the following:

1) Database queries for the Morgan Hill, Lick Observatory, Isabel Valley, Santa Teresa Hills, Loma Prieta, San Jose East, Mount Sizer, Mount Madonna, and Gilroy 7.5-minute USGS quadrangles from the available databases (CNDDB, 2015; CNPS, 2015; USFWS, 2015; see Appendix B);
2) An assessment of habitat types and surrounding land uses completed by reviewing recent aerial photographs; and
3) A reconnaissance-level survey by a qualified biologist.

Additional information regarding special-status plants, animals, and habitats was compiled through a review of information sources maintained by the CDFW (2015a,b,c,d). Plant habitat affinities and local distribution information was obtained from Baldwin et al. (2012) and Corelli (2011). Nomenclature for common, widespread plants and animals conforms to Jepson Online Interchange[1] and CDFG (2005), respectively. Nomenclature for special-status plants and animals conforms to CDFW (CDFW, 2015a and CDFW, 2015c, respectively). Plant community names conform to Sawyer et al. (2009), and Cowardin et al. (1979) where appropriate; special-status plant communities follow CDFG (2010).

A reconnaissance-level survey was performed by biologist Michael Wood on March 12, 2015. The study area consists of the project boundaries and adjacent parcels. Focused botanical or wildlife surveys were not performed as part of this analysis.

3.0 SETTING

The study area encompasses four contiguous parcels (APN 767-08-035, 036, 037 and 038). The four lots are located at 35-59 West Dunne Avenue (Figures 1 and 2). The partially developed lots cover a total of 0.57 ha (1.41 ac). The project site has been historically used for residential and agricultural purposes. One of the parcels (APN 767-08-036) was developed with a single-family residence around 1900. A second parcel (APN 767-08-038) is developed with two residential dwellings, while the two remaining parcels (APN 767-08-037 and 767-08-035) are undeveloped and contain outbuildings on either side of the 45 West Dunne Avenue residence, respectively. Overall, the project site includes three residences, three garages, one barn, and two sheds.

The level project site is at an elevation of 102-105 m (334-344 ft) above mean sea level (MSL). Adjacent land uses include single and multi-family residential, commercial

[1] Available on line at http://ucjeps.berkeley.edu/ interchange.html

retail, offices, city administration offices, and gas stations. Although the project site represents a remnant of former rural conditions, it has been enveloped by urban development associated with the expanding center of the City of Morgan Hill (see Figure 2). The project site is bordered by West Dunne Avenue to the south, a gas station and office building to the east, and residential neighborhoods to the north and west.

The westernmost parcel of the study area (APN 767-08-038) supports one older and one modern single-family home, paved driveway, lawn, and mature trees. The eastern three parcels (APN 767-08-035, 036, and 037) support a single-family home and numerous out-buildings, and are dominated by mature oaks, ornamental trees, and unmaintained ground.

An unnamed, heavily engineered tributary to Little Llagas Creek flows along the eastern edge of the study area. On site, much of the channel has earthen banks and a bottom lined with silt, gravels, cobbles, and concrete rubble. The southeastern bank, which abuts the adjacent gas station, consists of a concrete wall. At the downstream end of the site, the channel enters a buried box culvert which conveys flows beneath West Dunne Avenue and the commercial center to the south. The channel was not found to support any emergent wetlands or native riparian vegetation.

Formerly, the area was used for dry-land farming and irrigated orchards. Based on a review of historic aerial photographs, the project vicinity area has been developed at its current level at least since 1996. Habitats on site consist of maintained and non-maintained structures, large-canopied mature oaks and other landscaping trees, open grassy areas, and an open flood channel. Photographs illustrating the current condition of the study area are presented in Appendix A. Plant communities and wildlife habitats are described below.

3.1 Plant Communities

Based on a review of a 1939 aerial photograph[2], much of the Morgan Hill area supported agriculture, predominantly fruit and nut orchards. Already at that time, the project site supported the existing home, which was built in 1900, surrounding by many of the same large oak trees present today.

Currently, the non-paved or developed portions of the project site support a relatively dense canopy of mature oaks and ornamental trees, interspersed with non-native annual grassland. Although the oaks are likely naturally occurring, based on the site's historic use and alteration, these trees and grassy areas can be lumped together under the heading of anthropogenic habitat; no portion of the project site would be regarded as a natural plant community. This plant assemblage is described below.

[2] Available online at http://digitalcollections.ucsc.edu/cdm/singleitem/collection/p16019coll5/id/1329/rec/1

Anthropogenic Plant Associations

Anthropogenic plant associations are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities (Holland and Keil, 1990). Some are entirely artificial such as areas under active cultivation (e.g., rowcrops, orchards, vineyards, ornamental landscaping). Others include areas used as rangeland or pasture, and areas influenced by urban or suburban landscaping or plantings. On such sites, the native vegetation has typically been removed by clearing in preparation for cultivation, landscaping, or development. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation or grazing, while have naturalized and are able to persist without artificial means. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both.

Within the study area, anthropogenic habitats include areas of lawn, maintained and non-maintained plantings, remnant orchard trees, and mature oaks and ornamental trees (see Appendix A). The large-canopied trees on site consist of native coast live oak and valley oak. Other native trees and large shrubs present on site include California bay and toyon. Ornamental trees and shrubs present on site include deodar cedar, myoporum, cherry plum, privet, black walnut, European olive, silver wattle, cotoneaster, sweet almond, and Brazilian peppertree, among others.

Where fallow or not maintained, the grassy areas dominated by non-native annual grasses such as wild oats, ripgut brome, foxtail barley, and rattail fescue are present. Other non-native grasses and forbs typical of highly disturbed sites such as this one include Bermuda buttercup, common groundsel, spiny sowthistle, bristly ox-tongue, common chickweed, burclover, white-flowered onion, cutleaf geranium, field hedge parsley, Italian thistle, and fiddle-leaf dock. The only native herbs detected on site include bedstraw, wild cucumber, miner's lettuce, and bittercress.

Landscaped or wooded vegetation on site is not classified by Sawyer et al. (2009); it would be classified as an upland following Cowardin et al. (1979). Unless found to harbor special-status species or otherwise regulated under local tree protection ordinances, the removal trees on site would not typically be regarded as significant pursuant to CEQA guidelines.

Grassy portions of the site most closely conform to Wild Oats Grassland (*Avena [barbata, fatua]* Semi-Natural Herbaceous Stands) as described in Sawyer et al. (2009; CA vegetation code 44.150.00). This plant association has been described as Non-native Grassland by Holland (1986; Holland code 42200). Non-native annual grasslands would be classified as an upland following Cowardin et al. (1979). As a common, widespread and non-natural plant association, non-native annual grassland

has no global or state rarity ranking. Unless found to harbor special-status species, the removal non-native annual grassland would not typically be regarded as significant pursuant to CEQA guidelines.

3.2 Wildlife Habitats

The project site is in an urbanized setting that has been dramatically transformed by development over the past 40 years. Although situated not far from expansive non-developed lands and supporting a section of an engineered flood control channel, habitat values associated with the existing site conditions are minimal.

Anthropogenic Habitat

Anthropogenic habitats are those created as a result of and maintained by human activities (e.g., land clearing, cultivation, development). Anthropogenic plant communities have been described as agrestal (cultivated), pastoral (grazed), ruderal, plantations, and urban (landscaped) (Holland and Kiel, 1990). In addition to these vegetated communities, anthropogenic habitats also include structures that may also attract a wide variety of wildlife species.

Many native and non-native wildlife species are well adapted to anthropogenic habitats, while others are completely or nearly dependent on them. These species are attracted by certain resources readily available in anthropogenic settings such as forage, water and shelter while being tolerant of human disturbances such as noise, lighting, and the movement of people and machinery. Buildings may provide nesting and roosting opportunities for a variety of birds which nest under eaves, in roof tiles, and even on graveled roof tops. Cracks, seam joints, roof vents, loose siding and roof tiles also providing suitable roosting sites for numerous species of bats. Many mammals are attracted to human development source of food (rubbish, garden plants, pet food, and pets themselves). Mature trees on landscaped lots, such as those occurring on site, may provide nesting and roosting opportunities for a wide variety of birds and bats. They may also serve as a source of forage for a wide variety of birds as well as resting and perching sites for raptors (birds-of-prey).

Engineered flood control channels, especially when located in urbanized areas, can provide a source of water and forage for a variety of invertebrates, birds, reptiles, amphibians and mammals, depending on a variety of environmental and ecological factors. The availability or lack of emergent vegetation, overhanging riparian habitat, riffles and pools, the presence of adjacent open lands for foraging, and the degree of human interference (e.g., noise, lighting, human activity, contaminants, pets, etc.) influence a site's value to wildlife. In general, however, such sites tend to attract mammalian predators that are inured to human habitation such as Virginia opossum, raccoon, Norway and black rat, striped skunk, feral cat, red fox, and coyote. Many common urban birds will utilize urbanized channels for water and forage. Flood

control channels may also support a variety of native and non-native fish species, depending on site conditions and connectivity to larger water bodies. The flood channel occurring on site is intermittent and far removed from natural stream sections, separated by barriers to upstream movements. As such, it is not expected to support any significant fishery resources.

Wildlife species or their sign[3] detected on site during the present survey include western scrub-jay, American crow, pocket gopher, northern mockingbird, and Virginia opossum. Two small stick nests, likely built by western scrub-jays were seen in a valley oak tree and a dead deodar cedar.

3.3 Wildlife Movement Corridors

Under CEQA, impacts are considered significant if a project would interfere substantially with the movement of 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. Wildlife corridors (i.e., linear habitats that naturally connect and provide passage between two or more large habitats or habitat fragments) are important for the persistence of wildlife overtime. For populations to be viable, wildlife must have access to adequate resources. Corridors are used to find suitable forage, nesting and resting sites, mates and for the establishment of new home ranges by dispersing juveniles. In addition, corridors for dispersal within breeding populations will decrease the likelihood that subpopulations will go extinct or become locally extirpated. Even where patches of pristine habitat are fragmented, as commonly occurs with riparian vegetation, wildlife movement between populations is facilitated through habitat linkages, migration corridors and movement corridors.

Wildlife movement includes migration (i.e., usually one direction per season), inter-population movement (i.e., long-term genetic exchange) and small travel pathways (i.e., daily movement within an animal's home range). Daily movement patterns define an animal's home range where activities such as foraging, resting and conspecific (individuals of the same species) interactions occur. Generally, longer movements, usually by dispersing individuals connect breeding populations, permit gene flow between subpopulations. Corridors generally provide adequate habitat for animals to disperse until reaching an area large enough to establish home ranges. Corridors are different depending on the type of organism; a corridor for a butterfly or bird may be a series of "stepping stones" of suitable habitat, while a terrestrial vertebrate may require a continuous band of suitable habitat for successful movement. Habitat loss, fragmentation, and degradation resulting from a change in land use or habitat conversion can alter the use and viability of corridors.

[3] Wildlife sign include tracks, vocalization, scat, white-wash, feathers, fur, shed skin, nests, burrows, prey remains, and dead individuals.

At the subject parcel, the surrounding non-developed parcels provide some linkage to extensive open lands to the west. Nonetheless, due to the location of the project site in an urbanized area and the lack of open, natural habitats to the east, there is neither the opportunity nor the incentive for wildlife to move across the site to a significant degree. As such, it is not in and of itself considered to serve as an important movement corridor for wildlife.

3.4 Jurisdictional Features

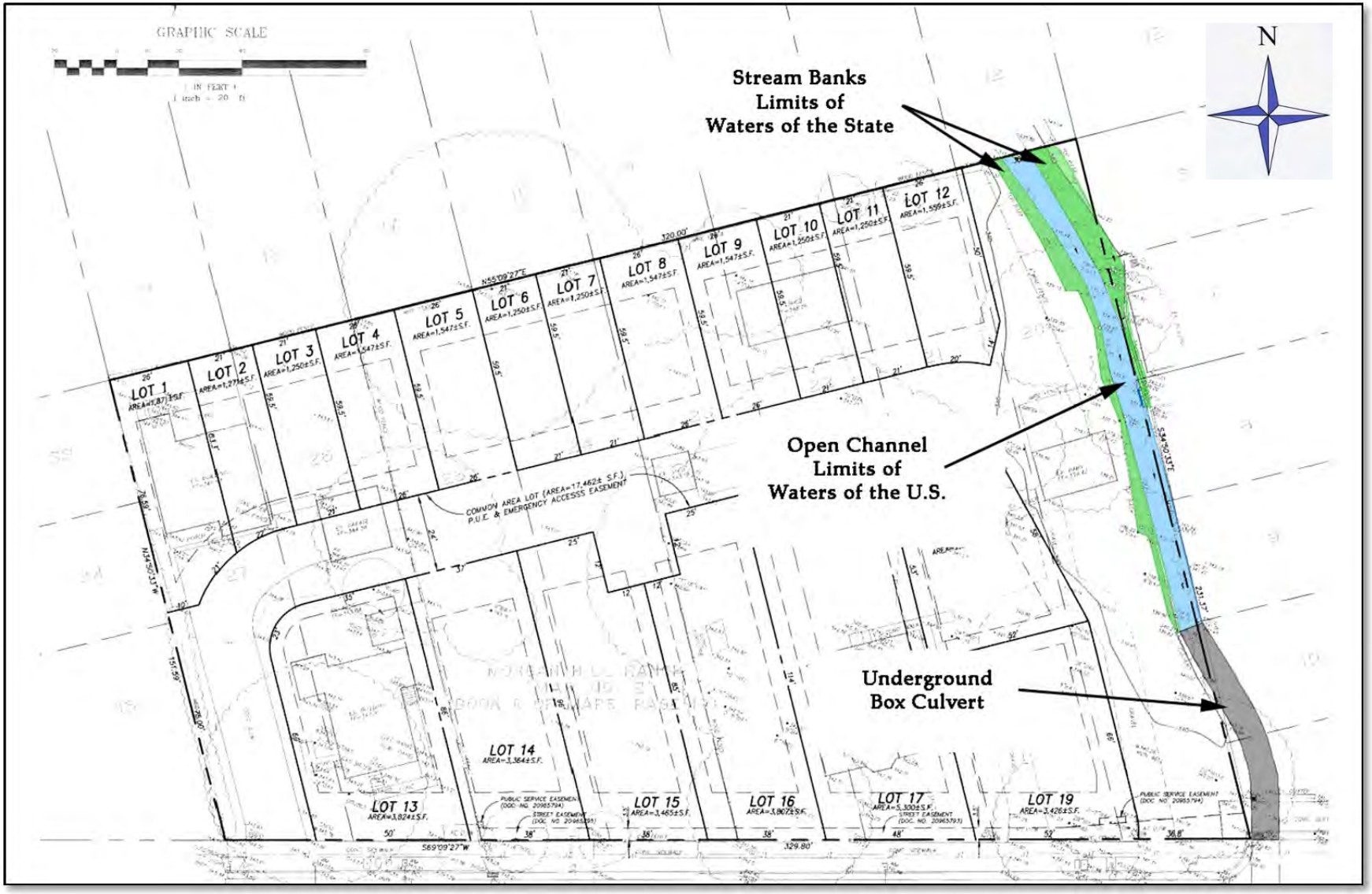
Certain habitat and site features fall under federal and State jurisdiction (see discussion of Special-Status Natural Communities in Section 4.1, below). These typically include stream and drainage courses, water bodies, tidal lands, wetlands, and riparian habitats. The extent of jurisdiction of a given agency varies and is defined by specific guidelines issued by each agency. Important factors evaluated in making a preliminary assessment of agency jurisdiction include site hydrology, vegetation, and soils. A brief discussion of these parameters and site-specific conditions is presented below. The expected limits of jurisdiction are illustrated in Figure 3.

To meet the legal definition of a wetland, a site must exhibit specific indicators of hydrologic, soil, and vegetation parameters. Indicators of all three wetlands parameters must be present for a site to be classified as a wetland (Environmental Laboratory, 1987). No habitats suspected of meeting the wetland definition are present within the project boundaries. However, the flood channel crossing the eastern edge of the project site is nonetheless expected to be regulated under federal and state law.

<u>Hydrology</u>

For the hydrology parameter to be satisfied, a wetland site must be inundated or saturated to within 30 cm (12 in) of the soil surface for at least 12.5 percent of the growing season; areas inundated or saturated to within 30 cm (12 in) of the soil surface for 5-12.5 percent of the growing season might or might not meet the parameter. In this area, the growing season ranges from about March 1 and extends through mid-November (Sunset Publishing Corporation, 2001; Zone 14). Assuming a maximum growing season of 300 days, the soil surface at a given site would need to be saturated for at least 32.5 consecutive days after March 1 (0.125 x 260 frost free days) to meet the wetland hydrology criterion. The only location within the project boundaries likely to meet this parameter is the bottom of the flood control channel. No evidence of surface inundation or soil saturation was detected anywhere else on site.

An unnamed, heavily engineered flood channel flows along the eastern edge of the study area. On site, much of the channel has earthen banks and a bottom lined with silt, gravels, cobbles, and concrete rubble. The southeastern bank, which abuts the adjacent gas station, consists of a concrete wall. At the downstream end of the site, the



Source of Base Map: Giuliani & Kull, Inc. 3/15/13

Figure 3. Potentially Jurisdictional Surface Channel

channel enters a buried box culvert which conveys flows beneath West Dunne Avenue and the commercial center to the south. The channel is a tributary to Little Llagas Creek, Llagas Creek and the Pajaro River at the San Benito County Line. The Pajaro River empties into Monterey Bay west of Watsonville.

The channel appears as a "blue-line" stream on the Morgan Hill 7.5-minute USGS quadrangle. It originates on open hillsides, with the top of the watershed being approximately 4 km (2.4 mi) to the northwest. Flows are conveyed to the subject property via a combination of straightened, earthen channels, open-box culverts and buried culverts. It is presumed to be a second order intermittent stream.[4] The section of this channel occurring within the project boundaries is approximately 55 m (183 ft) long. The bottom of the channel is an average of m (8 ft) wide between the toes of slope and 5.5 m (18 ft) wide between the tops of bank.

As summarized by the USACE and U.S. Environmental Protection Agency (USEPA), both agencies assert jurisdiction over "non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)" and "wetlands that abut such tributaries" (USEPA/USACE, 2008). The extent of USACE jurisdiction normally corresponds to the Ordinary High Water Mark (OHWM).[5] As such, the placement of fill below the OHWM would be regulated pursuant to the Clean Water Act (CWA)[6] and would fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the San Francisco Regional Water Quality Control Board (RWQCB). The channels are also expected to qualify as a waters of the State.[7] As such, any impacts below the tops of bank would be regulated pursuant to the CFGC[8] and would fall under the jurisdiction of the CDFW. The limits of state and federal jurisdiction are confined to the channel and do not extend beyond the tops of bank. The location and extent of jurisdiction related to the channel are illustrated in Figure 3.

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[4] See http://en.wikipedia.org/wiki/Strahler_Stream_Order for descriptions of stream orders.

[5] The OHWM is the line on the shores 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 the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas (USACE, 2006).

[6] CWA §404 and CWA §401

[7] As defined under California Water Code §13050(e), Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". These include nearly every surface or ground water in California, or tributaries thereto, and include drainage features outside USACE jurisdiction (e.g., dry and ephemeral/seasonal stream beds and channels, etc.), isolated wetlands (e.g., vernal pools, seeps, springs and other groundwater-supplied wetlands, etc.), and storm drains and flood control channels.

[8] CFGC §1602

Vegetation

Hydrophytic vegetation is comprised of plant species that possess physiological features or reproductive adaptations that allow them to persist in soils subject to prolonged inundation and anaerobic soil conditions. The wetland status of plant species is based on their probability of being associated with wetlands or uplands. Obligate (OBL) species almost always (>99% of the time) occur in wetlands. Facultative Wetland (FACW) species occur in wetlands 67-99% of the time. Facultative (FAC) species have an equal probability 33-66% to occur in wetlands. Facultative Upland (FACU) and Obligate Upland (UPL) species occur in wetlands 1-33% and <1% of the time, respectively. For a sample point to meet this criterion, more than 50 percent of the dominant plant species in each of the strata must be OBL, FACW, or FAC indicator species. Wetland indicator species for our region are listed in Lichvar, et al. (2014).

No vegetation meeting this criterion are present on site, nor are there any habitats routinely defined as riparian.

Soils

Hydric soils are those that have formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA, 2006). Hydric soil indicators are formed as a result of the accumulation or loss of iron, manganese, sulfur, or carbon compounds. Some characteristic field indicators of hydric soils include the presence of histic epipedon, i.e., a thick organic layer at the surface, sulfidic odor, stratified layers of muck and mineral soils, muck, gleyed soils or soils with a low matrix chroma, redox depletions or concentrations, iron or manganese concretions, and soils listed as hydric by the USDA. Soils information for the project site was obtained from the Natural Resource Conservation Service's (NRCS) Web Soil Survey (USDA, 2015a). Classified hydric soils for Santa Clara County are listed by the USDA (2015b).

Soils on site are mapped as belonging to the Keefers series. Descriptions of this series and the specific soil units on site are presented below. Soils were not specifically sampled on site as part of this investigation has not been confirmed. However, based on topographic position and vegetation characteristics, the characterizations of the soil types are consistent of site conditions.

Keefers

The Keefers series consists of well-drained clay loams that are underlain by alluvium from basic igneous rock

These soils lie on old fans with slopes ranging from 0 to 9 percent and at elevations from 61-244 m (200-800 ft) above MSL. The average annual temperature is 14-16° C

(58-60°F), average annual rainfall is 41-51 cm (16-20 in), and the average frost-free period is 260-275 days per year (USDA, 1974). Where not cultivated, the natural vegetation on these soils consists of annual grasses, forbs and scattered oaks. The Keefers series is classified as a Mollic Haploxeralf (USDA, 1974).

Soils on a majority of the parcel are mapped as Keefers clay loam, 0 to 2 percent slopes; soils in the northwestern corner of the parcel are mapped as Keefers clay loam, 2 to 9 percent slopes (USDA, 2015). For these units, runoff is slow to very slow, permeability is slow to ponding, and the available water capacity is 17-20 cm (6.5-8 in). The hazard of erosion is none to slight. Soils in the Keefers series are associated with the Cropley and Los Robles soils. While neither of the Keefer soils units is considered a hydric soil type, unnamed hydric inclusions may be associated with upland seeps (USDA, 2015b).

4.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

Existing and potentially occurring biological constraints at the subject parcel or potentially affected by the proposed action are discussed below.

4.1 Special-Status Natural Communities

Special-status natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection under the Clean Water Act (CWA)[9], Lake and Streambed Alteration Program (LSAP)[10], and/or the Porter-Cologne Water Quality Control Act (Porter-Cologne).[11] A number of communities have been designated as rare and these communities are given the highest inventory priority (CNDDB, 2015; CDFG, 2010). Vegetation alliances given a rarity ranking of G1, G2 or G3 are considered to be of high inventory priority; alliances ranked as G4 or G5 are generally considered common enough to not be of concern (Sawyer et al., 2009; CDFG, 2010).

Riparian habitats are considered by federal and State regulatory agencies to represent a sensitive and declining resource. Wetlands and riparian areas can serve significant biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory wildlife species. Impacts to stream channels with a defined bed and bank are addressed specifically by the CFGC[12] and may be regulated under the CWA. The USACE regulates dredging and placement of fill into waters of the U.S., including wetlands, with oversight of permitting decisions by the U.S. Environmental Protection Agency (USEPA). The USFWS and the National

[9] CWA §401 and §404
[10] CFGC Division 2, Chapter 6, §§1600-1607
[11] Cal. Water Code §§13000-14920
[12] CFGC §1600 et seq.

Oceanic and Atmospheric Administration, Fisheries Service (NOAA Fisheries Service) has input on permitting decisions by the USACE when an activity could affect wetland-dependent federally listed species.

No special-status natural communities (e.g., wetlands, riparian habitat) occur within the study area. As discussed above, the flood control channel is expected to qualify as a waters of the U.S. and a waters of the State; impacts below the tops of bank are regulated and fall under the jurisdiction of the USACE, RWQCB, and the CDFW.

4.2 Special-Status Plant Species

Special-status plant species include all plant species that meet one or more of the following criteria:[13]

- Listed or proposed for listing as Threatened or Endangered under the federal Endangered Species Act (FESA) or candidates for possible future listing as Threatened or Endangered under the FESA.[14]
- Listed[15] or candidates for listing by the State of California as Threatened or Endangered under the California Endangered Species Act (CESA).[16] A species, subspecies, or variety of plant is **endangered** when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors.[17] A plant is **threatened** when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures.[18]
- Listed as Rare under the California Native Plant Protection Act (CNPPA).[19] A plant is **Rare** when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.[20]
- Meet the definition of Rare or Endangered under CEQA.[21] Species that may meet the definition of Rare or Endangered include the following:

[13] This definition is provided in CDFG (2009).
[14] 50 CFR §17.12
[15] Refer to current online published lists available at: http://www.dfg.ca.gov/biogeodata.
[16] CFGC § 2050 et seq.
[17] CFGC § 2062
[18] CFGC § 2067
[19] CFGC § 1900, et seq.
[20] CFGC § 1901
[21] CEQA § 15380[b] and [d]

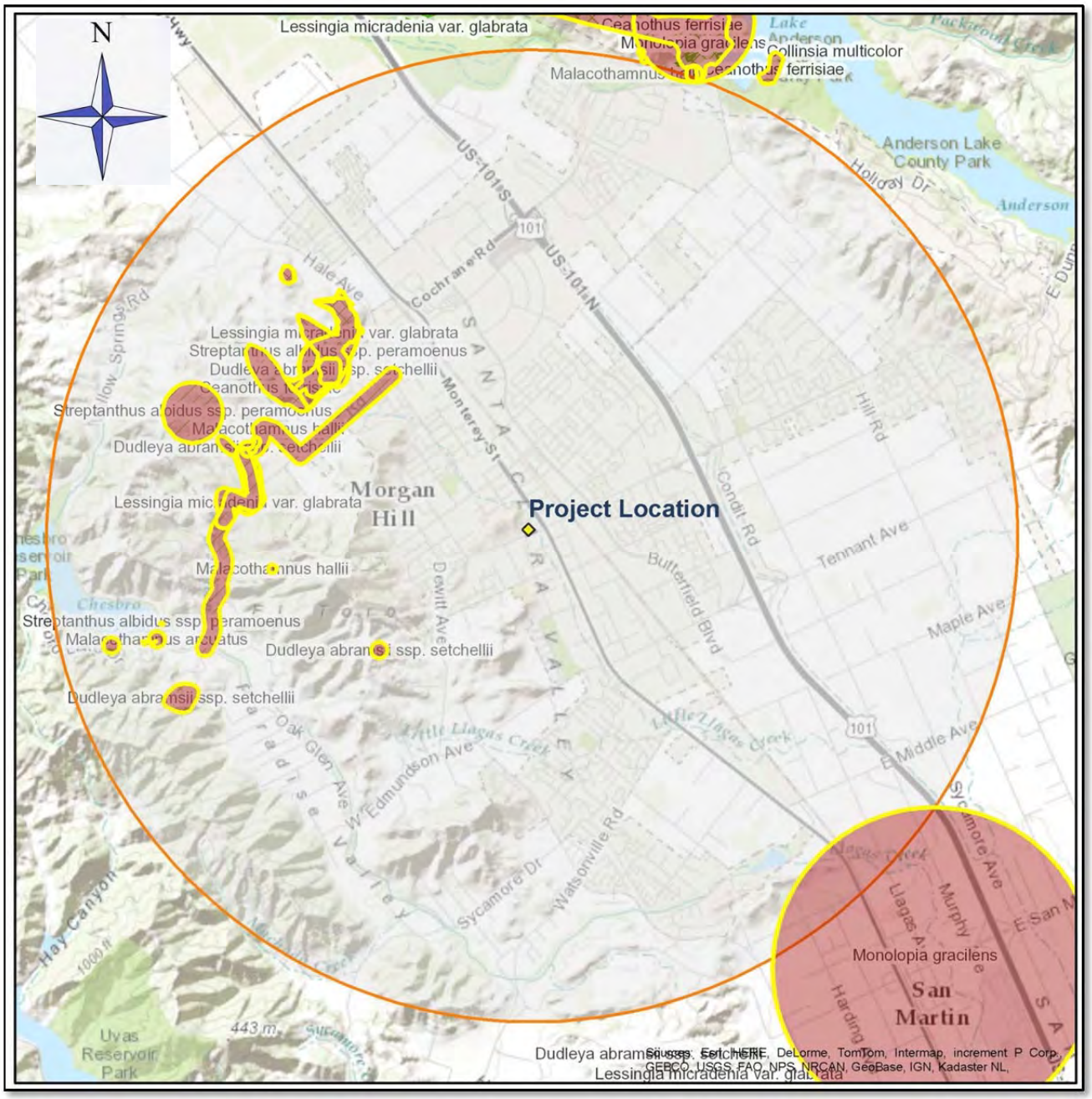
- Species considered by the CNPS to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2);
- Species that may warrant consideration on the basis of local significance or recent biological information;
- Some species included on the California Natural Diversity Database's (CNDDB) *Special Plants, Bryophytes, and Lichens List*.

- **Locally significant species,** that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region[22] or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines[23]). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

In addition, plant species have been assigned global and state rarity rankings (for a definition of these rankings, see Appendix C). Species ranked as S1, S2, or S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state (CDFW, 2015a). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA.[24] Species ranked as S4 or S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status plants species, as thusly defined, would be regarded as significant pursuant to CEQA[25] and must be addressed in environmental review documents.[26]

A total of 61 special-status plant species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the project site (CNPS, 2015); the CNDDB (2015) lists only 41 special-status plant species. Based on the altered nature of the subject parcel and surroundings, soil types, existing habitats, and geographic location, the potential for occurrence of all 61 of the target plant species can be ruled out entirely. As shown in Figure 4, a total of seven special-status plant species have been recorded from within a 4.8 km (3 mi) radius of the project site. These include coyote ceanothus, Santa Clara Valley dudleya, smooth lessingia, arcuate bush-mallow, Hall's bush-mallow, woodland woollythreads, and most beautiful jewelflower. None of these species is considered to have any potential for occurrence on site.

[22] CEQA § 15125 (c)
[23] Appendix G
[24] CEQA § 15380(d)
[25] CEQA § 15065
[26] CEQA § 15125



Source: CNDDB (2015) Rare plant records within a 3-mile radius of the project site

Figure 4. Rare Plant Records in Project Vicinity

Ten special-status plant species have been recorded from within 8 km (5 mi) of the study site. These species, along with their potential for occurrence at the project site are summarized in Table 1. A complete list of all special-status species evaluated as part of this analysis can be found in Appendix B. An explanation of all rarity status codes is provided in Appendix C.

Table 1. Summary of Special-Status Plants Recorded from the Project Vicinity*

Scientific Name	Common Name	Status** Fed/State/CNPS	Potential for Occurrence/ Rationale
Federally and/or State Listed Species			
Castilleja affinis var. *neglecta*	Tiburon paintbrush	FE/ST/1B.2	None: no suitable habitat present on site.
Ceanothus ferrisiae	coyote ceanothus	FE/--/1B.1	None: no suitable habitat present; would have been identifiable at time of survey.
Dudley abramsii ssp. *setchellii*	Santa Clara Valley dudley	FE/--/1B.1	None: no suitable habitat present; would have been identifiable at time of survey.
Other Special-Status Species			
Cirsium fontinale var. *campylon*	Mt. Hamilton thistle	--/--/1B.2	None: no suitable habitat present; would have been identifiable at time of survey.
Collinsia multicolor	San Francisco collinsia	--/--/1B.2	None: no suitable habitat present on site.
Lessingia micradenia var. *glabrata*	smooth lessingia	--/--/1B.2	None: no suitable habitat present on site.
Malacothamnus arcuatus	arcuate bush-mallow	--/--/1B.2	None: no suitable habitat present; would have been identifiable at time of survey.
Malacothamnus hallii	Hall's bush-mallow	--/--/1B.2	None: no suitable habitat present; would have been identifiable at time of survey.
Monolopia gracilens	woodland woollythreads	--/--/1B.2	None: no suitable habitat present on site.
Streptanthus albidus ssp. *peramoenus*	most beautiful jewelflower	--/--/1B.2	None: no suitable habitat present on site.

* Taxa recorded within 8 km (5 mi) of the project site; for a complete list of all target species evaluated as part of this analysis, see Appendix B

** For an explanation of rarity codes, see Appendix C

4.3 Special-Status Animal Species

Special-status animal species include listed as Endangered, Threatened, Rare, or as Candidates for listing under the FESA (USFWS, 2015) or CESA (CDFW, 2015d). Other species regarded as having special-status include special animals, as listed by the CDFW (2015c). Additional animal species receive protection under the Bald and Golden Eagle Protection Act (BGEPA)[27] and the Migratory Bird Treaty Act (MBTA)[28]. The CFGC provides specific language protecting birds and raptors[29], "fully protected birds"[30], "fully protected mammals"[31], "fully protected reptiles and amphibians"[32] and "fully protected fish".[33] The California Code of Regulations (CCR) prohibits the take of fully protected fish[34], certain fur-bearing mammals,[35] and restricts the taking of amphibians[36] and reptiles[37]. Additional definitions are given in CEQA.[38] Impacts on special-status animal species, as thusly defined, may qualify as significant pursuant to the guidelines of the CEQA.

A total of 28 special-status animal species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the project site (CNDDB, 2015). As shown in Figure 5, a total of seven special-status animal species have been recorded from within a 4.8 km (3 mi) radius of the project site. These include Opler's longhorn moth, California tiger salamander, burrowing owl, Pacific (western) pond turtle, bay checkerspot butterfly, Hom's micro-blind harvestman, and California red-legged frog. None of these species is considered to have any potential for occurrence on site.

Based on the lack of suitable habitat on site, geographic location, and the known range, the occurrence of 20 of the target species can be ruled out entirely. Suitable or marginally suitable habitat is present on site for eight target special-status species; two of these are considered to possibly occur on site while six are not expected on site. Nonetheless, given the site's history of disturbance and relatively high levels of human activity, the potential for occurrence of these species on site is considered low.

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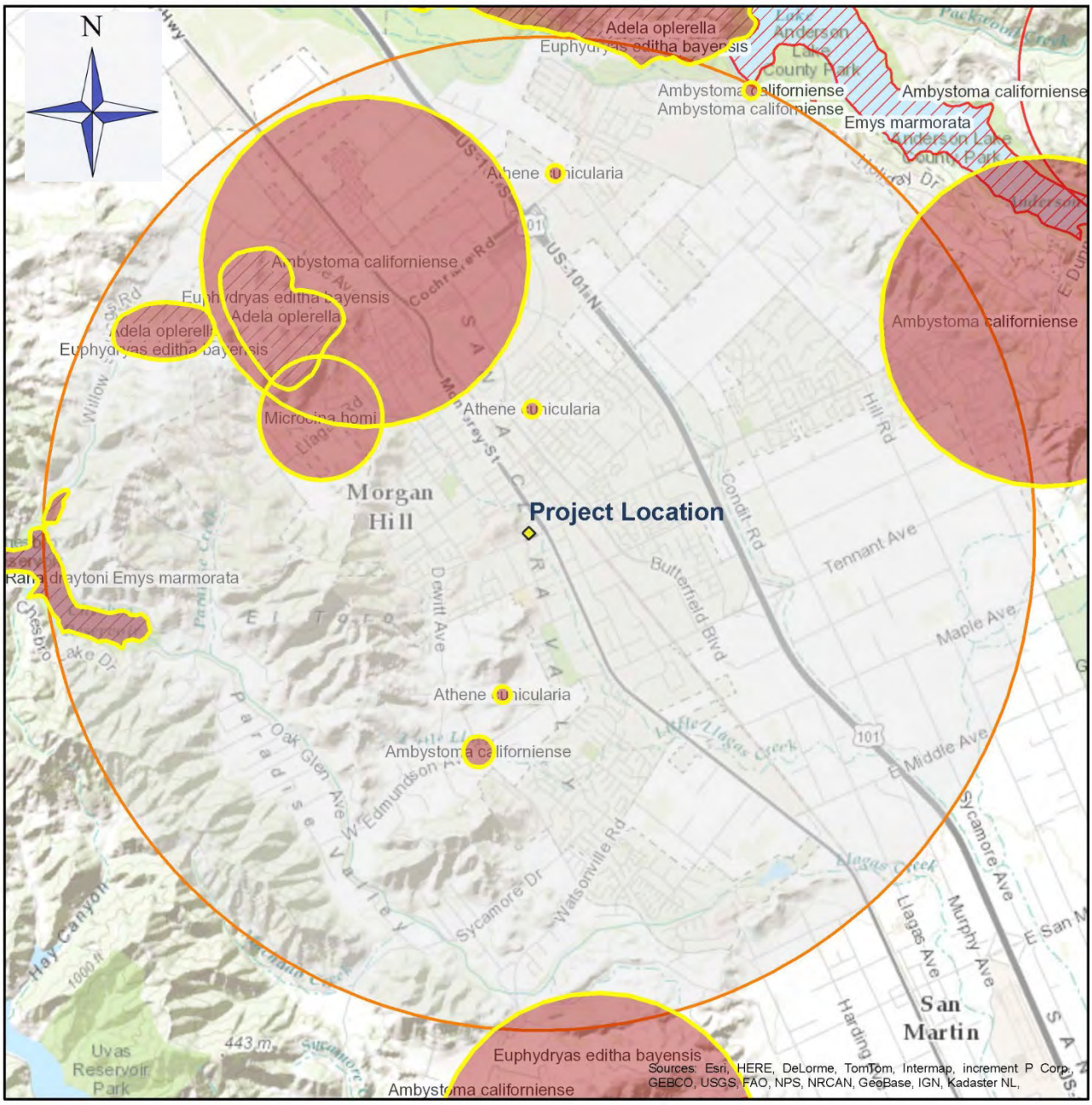
[27] 16 USC 668, et seq.
[28] 16 U.S.C. 703-711
[29] §§3503 and 3503.5
[30] CFGC §3511
[31] CFGC §4700
[32] CFGC §5050
[33] CFGC §5515
[34] 14 CCR § 5.93
[35] 14 CCR § 460
[36] 14 CCR § 5.05
[37] 14 CCR § 5.60
[38] §15380(d)



Source: CNDDB (2015) Rare animal records within a 3-mile radius of the project site

Figure 5. Rare Animal Records in Project Vicinity

A summary of the special-status animal species evaluated as part of this analysis, along with their potential for occurrence at the project site, is presented in Table 2. All special-status wildlife species considered to have a potential for occurrence on site are discussed in more detail below. A complete list of all special-status species evaluated as part of this analysis can be found in Appendix B. An explanation of all rarity status codes is provided in Appendix C.

Table 2. Summary of Special-Status Animals Recorded from the Project Vicinity*

Scientific Name	Common Name	Status** Fed/State/CDFW	Potential for Occurrence/ Rationale
Federally and/or State Listed Species			
Agelaius tricolor	tricolored blackbird	--/FE/SSC	None: no suitable habitat present on site.
Ambystoma californiense	California tiger salamander	FT/ST/SSC	None: no suitable habitat present on site.
Aquila chrysaetos	golden eagle	--/--/FP	None: no suitable habitat present on site.
Buteo swainsonii	Swainson's hawk	--/ST/SA	None: no suitable habitat present on site.
Corynorhinus townsendii	Townsend's big-eared bat	--/SC/SSC	Not expected: day/night roosting in large oaks and structures possible. See discussion below.
Elanus leucurus	white-tailed kite	--/--/FP	Not expected: marginally suitable nesting habitat present on site. See discussion below.
Euphydryas editha bayensis	bay checkerspot butterfly	FT/--/SA	None: no suitable habitat present on site.
Oncorhynchus mykiss irideus	Steelhead – Central Calif. Coast DPS	FT/--/SA	None: no suitable habitat present on site.
Oncorhynchus mykiss irideus	Steelhead – South/Central Calif. Coast DPS	FT/--/SSC	None: no suitable habitat present on site.
Rana draytonii	California red-legged frog	FT/--/SSC	None: no suitable habitat present on site.
Vireo bellii pusillus	least Bell's vireo	FE/SE/SA	None: no suitable habitat present on site.
Vulpes macrotis mutica	San Joaquin kit fox	FE/ST/--	None: no suitable habitat present on site.
Other Special-Status Species			
Adela oplerella	Opler's longhorn moth	--/--/SA	None: no suitable habitat present on site.

Antrozous pallidus	pallid bat	--/--/SSC	Not expected: day/night roosting in large oaks and structures possible. See discussion below.
Ardea herodias	great blue heron	--/--/SA	None: no suitable habitat present on site.
Athene cunicularia	burrowing owl	--/--SSC	None: no suitable habitat present on site.
Cypseloides niger	black swift	--/--/SSC	None: no suitable habitat present on site.
Dipodomys venustus venustus	Santa Cruz kangaroo rat	--/--/SA	None: no suitable habitat present on site.
Emys marmorata	Pacific pond turtle	--/--/SSC	Not expected: no suitable habitat present on site.
Lasiurus cinereus	hoary bat	--/--/SA	Not expected: roosting in foliage of large valley oaks possible. See discussion below.
Microcina homi	Hom's micro-blind harvestman	--/--SA	None: no suitable habitat present on site.
Microcina jungi	Jung's micro-blind harvestman	--/--SA	None: no suitable habitat present on site.
Myotis evotis	long-eared myotis	--/--SA	Possible: could roost in bark and cavities of large oak trees on site. See discussion below.
Myotis yumanensis	Yuma myotis	--/--SA	Possible: could roost in trees and structures on site. See discussion below.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	--/--/SSC	Not expected: no stick nests detected on site. See discussion below.
Phrynosoma blainvillii	coast horned lizard	--/--/SSC	None: no suitable habitat present on site.
Rana boylii	foothill yellow-legged frog	--/--/SSC	None: no suitable habitat present on site.
Taxidea taxus	American badger	--/--/SSC	None: no suitable habitat present on site.

* Taxa recorded within 8 km (5 mi) of the project site; for a complete list of all target species evaluated as part of this analysis, see Appendix B

** For an explanation of rarity codes, see Appendix C

Federal/State-Listed, Proposed, Candidate, or Fully Protected Fish and Wildlife Species

Townsend's Western Big-Eared Bat

The Townsend's western big-eared bat (*Corynorhinus townsendii*, hereafter referred to as TWBB) is a Candidate for listing under CESA (CDFW, 2015d) and is designated as a California Species of Special Concern by the CDFW (2015c). It is also designated as Sensitive by the BLM and the USFS, and is considered by the WBWG to be of high priority for research and conservation actions (CDFW, 2015c). The species has been assigned a global and state ranking of G3G4/S2 by the CNDDB (2015); species assigned a ranking of S3 or lower are considered vulnerable in the state due to their restricted range, relatively few populations, recent and widespread declines, or other factors.

The TWBB occurs throughout western North America, ranging from southern British Columbia southward into Central Mexico and eastward into the Great Plains (Piaggio and Sherwin, 2005). It is typically associated with coniferous forests, oak woodlands, deserts, prairies, riparian corridors and agricultural lands (Piaggio and Sherwin, 2005). Its distribution is strongly linked to the availability of caves and abandoned mines, which are used for roosting. It may also roost in buildings, the undersides of bridges, rock crevices and tree cavities. It forages at the edges of riparian and woodland habitats, where it is believed to feed entirely on moths (Harvey et al., 1999).

Once abundant throughout California, TWBB has decreased in population numbers due to its extreme sensitivity to human disturbance of roosting sites, primarily as a result of recreational caving, and mine exploration and reclamation (Piaggio and Sherwin, 2005). It has been estimated that in California, over a 40 year period, there has been a 52 percent decline in the number of maternal colonies, a 44 percent decline in the number of available roosts, and a 55 percent decline in the number of animals in the areas surveyed (Pierson and Feller, 1998).

Critical Habitat: Critical Habitat has not been designated for TWBB.

Habitat Suitability and Occurrence Data: Potentially suitable roosting habitat is present within the study area, consisting of the existing structures and the larger trees on site. The potential for occurrence of the species on site is considered to be extremely low.

The TWBB has not been recorded from the immediate project vicinity. The nearest record (Occ. #414) consists of an unknown number of bats detected in 2009 in a building site located 10.8 km (6.5 mi) to the north (CNDDB, 2015). Another record (Occ. #416) consists of two adult bats and abundant guano observed in 2007 at a structure located 11.6 km (6.9 mi) to the north (CNDDB, 2015).

Potential Project-Related Effects: Marginally suitable roosting habitat for the TWBB is present within the project area. If the species is present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects pursuant to CEQA if the species were found to be present. Impact avoidance measures are warranted, as outlined in Section 5.0, below.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is designated as fully protected under the CFGC.[39] This species receives additional protection under the MBTA and MBTRA (USFWS, 2015). It has been assigned a global and state ranking of G5/S3; species assigned a ranking of S3 are considered vulnerable in the state due to their restricted range, relatively few populations, or other factors making them very vulnerable to extirpation (CDFW, 2015c). As such, the species meets the criteria for listing as endangered, rare or threatened pursuant to the CEQA.[40] Impacts to species with such a ranking may be regarded as significant pursuant to CEQA[41] and must be addressed in environmental review documents.[42]

White-tailed kites inhabit open grasslands and savannas. They breed in a variety of habitats including grasslands, cultivated fields, oak woodlands and suburban areas where prey is abundant. Nests are typically built in trees near a water source and may occur in suburban areas with adjacent open areas with abundant prey. Breeding occurs between February and July, and may be double-brooded in some years. During the non-breeding season, white-tailed kites may hang out communally at roost sites (Dunk, 1995). Species occurs throughout California west of the Sierra Nevada and is more commonly seen in the Central Valley and among the foothills (Dunk, 1995). White-tailed kites prey on small mammals, reptiles and occasionally, birds.

Critical Habitat: White-tailed kite is not listed under FESA; as such, no Critical Habitat has been designated.

Habitat Suitability and Occurrence Data: White-tailed kites are confirmed nesters in Santa Clara County (Bousman, 2007). The oak trees on site provide marginally suitable nesting habitat for white-tailed kite and there are abundant foraging opportunities in the surrounding grasslands. However, no records of nesting white-tailed kite have been reported within an 8 km (5 mi) radius of the project site. Due to the presence of marginally suitable nesting sites, the presence of nesting white-tailed kites on site or in the project vicinity cannot be ruled out.

[39] CFGC § 3511
[40] CEQA §15380(d)
[41] CEQA §15065
[42] CEQA §15125

Potential Project-Related Effects: As currently proposed, the project would require the removal of many if not all of the large trees on site. Therefore, project implementation could have adverse effects on breeding white-tailed kite, if present, by causing nest abandonment, harassment of individuals, or disruption of breeding activities. Such impacts would be regarded as significant pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Other Sensitive and Locally Rare Wildlife Species

Hoary Bat

The hoary bat (*Lasiurus cinereus*) is designated as a Special Animal by the CDFW and a Medium Priority species by the WBWG (CDFW, 2015c). The species has been assigned a global and state ranking of G5/S4 by the CNDDB (2015); species assigned a ranking of S4 or higher are generally considered not to be vulnerable in the state.

Hoary bats are ubiquitous throughout California and roost alone in the foliage of evergreens and secondarily in deciduous trees, particularly in edge habitat (Bolster, 2005). They forage in small to large groups on large prey such as moths, beetles, flies, grasshoppers, termites, dragonflies and wasps (Western Bat Working Group, undated). Predators include jays, kestrels, hawks, owls, and snakes.

Critical Habitat: Critical Habitat has not been designated for hoary bat.

Habitat Suitability and Occurrence Data: Potentially suitable roosting habitat is present within the study area, consisting of trees on site. The potential for occurrence of the species on site is considered to be low.

The hoary bat has not been recorded from the immediate project vicinity. The nearest record (Occ. #93) consists of a single male specimen collected near Gilroy in 1938 from a site located 14.6 km (8.8 mi) to the south southeast (CNDDB, 2015). Another record (Occ. #94) consists of a single male specimen collected near Gilroy in 1937 from a site located 18.1 km (10.8 mi) to the southeast (CNDDB, 2015).

Potential Project-Related Effects: Marginally suitable roosting habitat for the hoary bat is present within the project area. If the species is present, the removal or significant pruning of large trees could result in significant adverse effects pursuant to CEQA if the species were found to be present. Impact avoidance measures are warranted, as outlined in Section 5.0, below.

Long-eared Myotis

The long-eared myotis (*Myotis evotis*) is designated as a Special Animal by the CDFW and a Medium Priority species by the WBWG; it is also considered Sensitive by the BLM (CDFW, 2015c). The species has been assigned a global and state ranking of G5/S3 by the CNDDB (2015); species assigned a ranking of S3 or lower are considered vulnerable in the state due to their restricted range, relatively few populations, recent and widespread declines, or other factors.

The range of the long-eared myotis reaches across western North America from southwestern Canada to Baja California, and eastward to the western Great Plains. It usually inhabits coniferous forests but is also known from semiarid shrublands, sagebrush, chaparral and agricultural areas. Individuals roost under exfoliating tree bark and in tree cavities, caves, mines, cliff crevices, and rocky outcrops, and occasionally in buildings and on the undersides of bridges (Bogan et al., 2005a). The long-eared myotis feeds on moths and small beetles found on foliage, tree trunks, rocks and the ground. The long-eared myotis is threatened by the closure of abandoned mines, recreational caving, some forest-management practices and impacts on cliff faces and rock outcrops (Bogan et al., 2005a)

Critical Habitat: Critical Habitat has not been designated for the long-eared myotis.

Habitat Suitability and Occurrence Data: Potentially suitable roosting habitat is present within the study area, consisting of the existing structures and the larger trees on site. The potential for occurrence of the species on site is considered to be low.

The long-eared myotis has not been recorded from the immediate project vicinity. Only a single occurrence (Occ. #108) has been reported from within 8km (5 mi) of the project site. This record, reported in 2007, consisted of a single adult female and juvenile found in a structure east of the City of San Jose, approximately 25 km (15 mi) north northwest of the project site (CNDDB, 2015).

Potential Project-Related Effects: Marginally suitable roosting habitat for the long-eared myotis is present within the project area. If the species is present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects pursuant to CEQA if the species were found to be present. Impact avoidance measures are warranted, as outlined in Section 5.0, below.

Pacific Pond Turtle

The Pacific pond turtle (*Emys marmorata*; formerly *Actinemys m.*; also known as western pond turtle) is a California Species of Special Concern (CDFW, 2015c); it is not listed under FESA. It has been assigned a global and state ranking of G3G4/S3 (CDFW, 2015c); species assigned a ranking of S3 are considered vulnerable in California due to

their restricted range and relatively few populations. As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA.[43] Impacts to species with such a ranking may be regarded as significant pursuant to CEQA[44] and must be addressed in environmental review documents.[45]

The Pacific pond turtle is the only fresh-water turtle native to greater California and is distributed along much of the western coast from the Puget Sound in Washington south to the Baja Peninsula, Mexico. Overall, Pacific pond turtles are habitat generalists and have been observed in slow-moving rivers and streams (e.g., in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock ponds, and sewage treatment plants. They prefer aquatic habitat with refugia such as undercut banks and submerged vegetation (Holland, 1994) and require emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature (Holland, 1994; Bash, 1999). Pacific pond turtles are omnivorous and feed on a variety of aquatic and terrestrial invertebrates, fish, amphibians and aquatic plants.

Pacific pond turtles regularly utilize upland terrestrial habitats, most often during the summer and winter, especially for oviposition (females), overwintering, seasonal terrestrial habitat use, and overland dispersal (Reese, 1996; Holland, 1994). Females have been reported ranging as far as 500 m (1640 ft) from a watercourse to find suitable nesting habitat (Reese and Welsh, 1997). Nest sites are most often situated on south or west-facing slopes, are sparsely vegetated with short grasses or forbs, and are scraped in sands or hard-packed, dry, silt or clay soils (Holland, 1994; Rathbun et al., 1992; Holte, 1998; Reese and Welsh, 1997). Pacific pond turtles exhibit high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese, 1996).

Females lay their clutch as early as late April in southern and central California to late July, although they predominantly lay in June and July. In the early morning or late afternoon, gravid females leave the water and move upland to nest (Holland, 1994). Natural incubation times vary, ranging from 80 to 100+ days in California. In northern California and Oregon, hatchlings remaining the nest after hatching and overwinter, emerging in the spring. In southern and central California, those that don't overwinter emerge from the nest in the early fall (Holland, 1994).

Critical Habitat: Pacific pond turtle is not listed under FESA; as such, no critical habitat has been designated for the species.

[43] CEQA §15380(d)
[44] CEQA §15065
[45] CEQA §15125

Habitat Suitability and Occurrence Data: No suitable aquatic habitat or nesting habitat is present on site. However, the flood channel that crosses the eastern boundary of the project site could serve as a movement corridor for turtles seeking refuge from high water or nesting sites further upstream. However, it is unlikely that Pacific pond turtle would occur in this channel due to lack of plunge pools, vegetative cover, or sunny banks and the high degree of human activity, presence of predator. Nonetheless, the incidental presence of Pacific pond turtle on site cannot be ruled out.

A total of four records of Pacific pond turtle have been reported within an 8 km (5 mi) radius of the project site (CNDDB, 2015). These records are all associated with permanent water bodies of Chesbro Reservoir, Anderson Lake, Metcalf Park and Coyote Creek Park. None of these sites is hydrologically connected to the project site. The nearest record (Occ. #177), consists of seven turtles observed in 1998 in Chesbro Reservoir, approximately 4 km (mi) west of the project site.

Potential Project-Related Effects: Because Pacific pond turtle has not been recorded in the project vicinity and due to the lack of suitable habitat on site or in the vicinity, its potential for occurrence is considered to be low. Nonetheless, transient individuals moving along the flood channel could seek refuge on site. If present during construction, direct mortality, injury and/or harassment of individuals could result. Avoidance measures are warranted, as outlined in Section 5.3, below.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is designated as a California Species of Special Concern by the CDFW and as Sensitive by the BLM and the USFS (CDFG, 2015c). The WBWG considers the species to be of high priority for research and conservation actions (CDFG, 2015c). The species has been assigned a global and State ranking of G5/S3 by the CNDDB (2014); species assigned a ranking of S3 are considered vulnerable in the State due to their restricted range, relatively few populations, recent and widespread declines, or other factors.

The pallid bat is a relatively large, light-colored bat ranging throughout the southwestern United States from interior British Columbia to Mexico (Jameson and Peters, 1998). Pallid bats inhabit foothills and lowlands near water throughout California below 2,000 m (6,560 ft) in elevation, but are most abundant in arid deserts and grasslands particularly in areas with rock outcrops near water (Zeiner et al., 1988-1990).

Pallid bats typically roost alone or in small groups in a variety of sites including bridges, barns, occupied and vacant buildings, tree hollows in coast redwoods, bole cavities in oaks, exfoliating bark, rock crevices in outcrops and cliffs, caves, and mines, which they may use as both day and night roosts (Sherwin and Rambaldini, 2005). Roost sites may change seasonally and are typically reused for a few days to weeks.

Pallid bats primarily feed on a variety of arthropods by capturing prey on the ground or gleaning from surfaces near the ground. Parturition (i.e., giving birth) varies with latitude, but generally occurs from late-April to August; maternal colonies disperse by October (Hermanson and O'Shea, 1983). Overwintering is common along the California coast, but individuals may migrate short distances between winter and summer roosts (Sherwin and Rambaldini, 2005).

Critical Habitat: Critical Habitat has not been designated for the pallid bat.

Habitat Suitability and Occurrence Data: Potentially suitable roosting habitat is present within the study area, consisting of the existing structures and the larger trees on site. The potential for occurrence of the species on site is considered to be low.

The pallid bat has not been recorded from the immediate project vicinity. The nearest record (Occ. #251) consists single male specimen collected in 1945 from a site located 13 km (7.8 mi) to the north northwest (CNDDB, 2015). Another record (Occ. #252) consists of a single female specimen collected in 1938 from a site located 14.5 km (8.7 mi) to the south southeast (CNDDB, 2015).

Potential Project-Related Effects: Marginally suitable roosting habitat for the pallid bat is present within the project area. If the species is present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects pursuant to CEQA if the species were found to be present. Impact avoidance measures are warranted, as outlined in Section 5.0, below.

<u>San Francisco Dusky-Footed Woodrat</u>

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*; hereafter SFDW) is designated as a California Species of Special Concern by the CDFW (2015c). It is one of eleven recognized woodrat subspecies occurring in California (Matocq, 2002). The SFDW inhabits oak and riparian woodlands with a well-developed understory in the San Francisco Bay Area. This subspecies is distributed through the Santa Cruz Mountains and Diablo Range from the Pajaro River north to the San Francisco Bay (Hall, 1981). It is most common in riparian, oak woodland and scrub habitats, but is able to persist in semi-rural areas in proximity to houses, if patches of native habitat are present. A study of a similar subspecies *N. f. luciana* on Camp Roberts found that densities increased significantly if dense under-story was present; densities reached 46.7 animals per ha (18.9 per ac) in plots of dense vegetation (Tietje, 1995).

Woodrats typically build nests (nests) of sticks and other debris on the ground, in the lower branches of trees and occasionally in human-made structures. Nests are often reused by successive generations and some can become six feet or more in height. Other atypical dens, including tree cavities, rock crevices and ground holes, are well-hidden and easily overlooked. Nests are used for rearing young, protection from

predators, resting, food storage, thermal protection and social interaction (Carraway and Verts, 1991). Individual woodrats can use and maintain more than one nest and, occasionally, more than one woodrat can occupy a den (Fargo et al., 1999). Woodrat nests are also used by a wide variety of native amphibians, small mammals, reptiles and insects (Ingles, 1965; Carraway and Verts, 1991). Woodrats feed on a variety of plant material, including seeds, nuts, berries and leaves, oftentimes foraging above the forest floor (Jameson and Peeters, 1988). Woodrat home ranges may cover 18.7 ha (46.2 ac), but activity may also be limited to a single tree over an individual's lifetime (Zeiner et al., 1990). They are mostly nocturnal in habit and active throughout the year. Dusky-footed woodrats breed year-round and may produce up to five litters per year, with litters containing one to four young (Zeiner et al., 1990). Development of oak woodlands and clearing of brushy under-story are possible threats to this species.

Critical Habitat: Critical Habitat has not been designated for the SFDW.

Habitat Suitability and Occurrence Data: The project site is located within the geographic range of SFDW. No evidence of the presence of SFDW, such as stick nests, was detected during the present survey. Although lacking direct connection to suitable riparian or woodland habitat, and even though there is a relatively high level of human activing on and around the subjec project site, the potential exists for this subspecies to move onto the site in the future.

Three records of SFDW have been reported from the Morgan Hill USGS quadrangle. These records (Occ. #3, 4, 5) were all reported in 2006 and are clustered in the Metcalf Canyon area approximately 12 km (mi) north of the project site. Despite the lack of nearby records, this wide-ranging, relatively common subspecies if underreported in the CNDDB records; it is highly likely that the species occurs nearer to the project site.

Potential Project-Related Effects: Although no woodrat nests were observed during the present survey, the SFDW could move onto the project site prior to implementation of the proposed project. If present, nests could be destroyed or disturbed during construction activities. Such impacts would be considered a significant adverse effect pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Yuma Myotis

The Yuma myotis bat is designated as a Special Animal by the CDFW and a Low-Medium Priority species by the Western Bat Working Group (WBWG); it is also considered Sensitive by the Bureau of Land Management (BLM; CDFW, 2015c). The species has been assigned a global and state ranking of G5/S4 by the CNDDB (2015); species assigned a ranking of S4 or higher are generally considered not to be vulnerable in the state.

The Yuma myotis ranges throughout western North America from British Columbia, Canada to Mexico, and is ubiquitous throughout California. Typical habitat includes riparian corridors and edge habitat in forested canyons, but also arid shrublands, deserts and forests (Bogan et al., 2005b). They are colonial roosters and are typically found in manmade structures such as bridges or buildings, but will also use trees, caves, mines and old cliff swallow nests (Jameson and Peeters, 2004). The Yuma myotis bats form maternity colonies of several thousand and give birth from April through July depending on latitude (Bogan et al., 2005b). The species is threatened by the closure of abandoned mines without adequate surveys, some forest management practices, and disturbance of maternity roosts in caves and buildings. Because it frequently occurs in structures, it is also vulnerable to building demolition, remodeling, and pest control activities.

Critical Habitat: Critical Habitat has not been designated for the Yuma myotis bat.

Habitat Suitability and Occurrence Data: No typical riparian is present on site or in the project vicinity. However, potentially suitable roosting habitat is present within the study area, consisting of the existing structures and the larger trees on site. The potential for occurrence of the species on site is considered to be low

The Yuma myotis has not been recorded from the immediate project vicinity. The nearest record (Occ. #37) consists of two adult males and one adult female observed in 2002 beneath a bridge in a rural area located 14.7 km (8.8 mi) to the northwest (CNDDB, 2015).

Potential Project-Related Effects: Marginally suitable roosting habitat for the Yuma myotis is present within the project area. If the species is present, the demolition of structures and the removal or significant pruning of large trees could result in significant adverse effects pursuant to CEQA if the species were found to be present. Impact avoidance measures are warranted, as outlined in Section 5.0, below.

Migratory Birds

In addition to the bird species considered to have special-status by the CDFW and discussed above, numerous, common bird species receive protection under federal and state laws.

The federal Migratory Bird Treaty Act of 1918 (MBTA)[46] and the Migratory Bird Treaty Reform Act of 2004 (MBTRA) make it unlawful, unless expressly authorized by permit pursuant to federal regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or

[46] 16 U.S.C. 703-711

cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird." In general, any activity that would directly or indirectly cause the destruction or abandonment of a nest actively being used for breeding or rearing of chicks of any covered bird species is illegal. Unoccupied nests, including old, abandoned nests as well as those recently vacated by fledglings, are not protected. A complete list of bird species covered under the MBTA/MBTRA is available from the USFWS (2013); a list of bird species of conservation concern is available from the USFWS (2008).

The California Department of Fish and Wildlife (CDFW) has jurisdiction over actions that may result in the disturbance or destruction of actively used nests or the unauthorized take of covered bird species. Under sections of the California Fish and Game Code (CFGC)[47], it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird covered under the MBTA/MBTRA. As with the MBTA/MBTRA, these protections typically protect only active nests, that is, nests that are actively being utilized for breeding. A nest may be regarded as active if a breeding pair of birds is actively preparing it for egg laying, contains unhatched eggs of the current breeding season, or contains chicks. Once the young birds have fledged (i.e., are capable of flight and are self-sustaining), nests are no longer considered active. However, under a subsection of the CFGC[48], it is unlawful to "take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird." This subsection makes it illegal to remove unoccupied, inactive, or abandoned nests of any bird of prey defined above without prior authorization by the CDFW.

The study area supports abundant potential nesting sites for birds protected under federal and state law. Suitable habitat includes tree canopies and cavities, dense foliage, and abandoned and occupied structures. Two old nests of western scrub-jay were detected during the present survey. Based on the amount of vegetative cover on site, there is a high potential for the utilization of these habitat for breeding by such birds. Site clearing activities could result in a take of migratory birds protected under the MBTA/MBTRA and the CFGC. Disturbance during the nesting season could result in the potential nest abandonment and mortality of young, which would be a significant adverse effect pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

5.0 DISCUSSION

As described in Section 3.0, the project site is in a formerly rural setting that has been enveloped by urban development. Although relatively heavily wooded with a large proportion of the site dominated by grassland, the project site supports occupied

[47] §§3503, and 3513
[48] §3503.5

residences, is bordered on two sides by single-family homes to the west and north, by commercial development to the east, and by a busy road and retail commercial development to the south. From a biological perspective, the resources that pose perhaps the greatest constraint to the proposed development are posed by the presence of large trees and structures that could host a variety of bird and bat species, and by the existence of a flood channel. Although the channel supports neither wetlands nor riparian vegetation, impacts to this feature is regulated under federal, State, and County laws and policies.

As outlined in Section 1.1, above, the proposed project would require the demolition of some of the existing structures, the removal of five trees, and the clearing and grading of a majority of the project site.

No fill would be placed below the top of bank of the flood channel and no wetlands or riparian vegetation would be impacted. No trees would be removed as part of the proposed project. Permanent structures would be situated from 6-15 m (20-50 ft) from the top of bank.

As summarized in Table 1, no federally or State-listed plant species are considered to have any potential to occur on site. Similarly none of the target special-status plant species is considered to have any potential to occur on site. Project implementation is therefore not expected to have any significant effects on special-status plant species.

As summarized in Table 2 and discussed in Section 4.3, numerous special-status bird and bat species considered to have a potential to occur on site. If present, project implementation could result in significant adverse effects on special-status animal species. These impacts, along with measures to avoid significant impacts are discussed in Section 5.3, below.

5.1 Special-status Natural Communities

Within the study area, an open section of a flood channel passes inside the eastern boundary of the project site. No wetlands or riparian habitat are present in the portion of this channel occurring on site. The channel is expected to fall under the jurisdiction of the USACE, CDFW, and RWQCB. The expected limits of jurisdiction are illustrated in Figure 3, above.

As proposed, the project would not require the placement of any fill below the tops of bank, nor are any new outfalls, bank armoring, or other impacts to the existing channel contours proposed.

Implications for Proposed Project: Waters of the U.S./Waters of the State

Because the proposed project does not call for the placement of any fill below the top of bank of any surface channel, permits are not required from the USACE or RWQCB[49] or the CDFW[50]. However, the project should be designed in such a manner as to ensure that no release of sediment into the water course would occur during construction or after completion of the project. The following measures should be incorporated in the project design:

a. Post-construction Best Management Practices (BMPs) must be incorporated into the project design to provide for the pre-treatment of storm water and urban run-off prior to release into the storm drain system.

b. Final grades must direct storm water away from the channel banks to prevent the migration of potentially contaminated flows into the channel without pre-treatment.

c. To prevent accidental incursion by construction equipment below the tops of bank, construction fencing or a similar visual barrier should be installed on both creek banks to separate the channel from the permitted work areas.

d. Under no circumstances should spoils, waste asphalt, gravel, paving materials or other construction materials or debris be placed, even temporarily, along or below the top of bank of the creek.

e. Prior to the initiation of work BMPs should be in place to prevent the release of any pollutants or sediment into the creek, storm drains, or tributaries; all BMPs should be properly maintained. Leaks, drips, and spills of hydraulic fluid, oil, or fuel from construction equipment should be promptly cleaned up to prevent contamination of water ways. All workers should be properly trained regarding the importance of preventing and cleaning up spills of contaminants. Protective measures should include, at a minimum:

    - No discharge of pollutants from vehicle and equipment cleaning should be allowed into any storm drains or watercourses.
    - Spill containment kits should be maintained onsite at all times during construction operations and/or staging or fueling of equipment.
    - Coir rolls or straw wattles should be installed along or at the base of slopes during construction to capture sediment.
    - Graded areas should be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.

[49] Pursuant to §404 and 401 of the Clean Water Act, respectively.

[50] Pursuant to §1600 of the California Fish and Game Code

With the incorporation of these measures, project implementation would not result in any inadvertent impacts on downstream water quality.

5.2 Special-Status Plant Species

No federally or State-listed plant species were detected and none is expected to occur within the construction areas. No avoidance measures or further studies are warranted.

5.3 Special-Status Animal Species

Construction could result in direct and indirect effects to special-status wildlife species through direct mortality, injury or harassment of individuals and the loss of suitable breeding, non-breeding aquatic, roosting, foraging, and dispersal habitat and/or daily/seasonal movement corridors. To minimize impacts associated with the project, the measures outlined below should be implemented.

Implications of the Proposed Project: Pacific Pond Turtle

Excavation and grading of the lower slopes (fill area) could inadvertently harm or take a Pacific pond turtle. If encountered pond turtles may only be relocated by a qualified biologist in possession of a scientific collector's permit issued by the CDFW. Otherwise, pond turtles must be left alone and permitted to move about unmolested. In order to avoid impacts to pond turtles at the fill area on the lower slope, the measures outlined below should be implemented. No impact avoidance measures for this species are warranted on the upper portion of the property (home site, driveway, utilities trench).

With the incorporation of these measures, impacts to Pacific pond turtle would be reduced to a less-than-significant level.

1. **Preconstruction Surveys**. A preconstruction survey should be performed PPT immediately prior to vegetation clearing and any construction activities within 50 feet of the top of bank of the channel.
2. **Wildlife Exclusion Fencing**. With the installation of wildlife exclusion fencing (see #5, above), pond turtles will be prevented from entering the work area and thereby protected from harm.
3. **Protocol for Species Observation**. If a pond turtle is detected on site, it may only be relocated by a qualified biologist. The biologist should make a record of the animal(s) and report his/her observations to the CDFW and the CNDDB.

Implications for Proposed Project: San Francisco Dusky-Footed Woodrat

Although not detected, the potential exists for San Francisco dusky-footed woodrat to take up residence at the project site prior to the start of construction. To ensure no woodrats are harmed during construction, the following measures are recommended.

With the incorporation of these measures, impacts to San Francisco dusky-footed woodrat would be reduced to a less-than-significant level.

1. A pre-construction wildlife survey should be performed at the project site to search for woodrat nests. If no nests are detected, no further avoidance measures are warranted.
2. If a woodrat nest is detected, it should be mapped in relation to the proposed limits of work. If the nest can be avoided, it should be isolated from the work zone by installation of wildlife exclusion fencing (WEF).[51]
3. If a woodrat nest is in the work zone and it cannot be avoided, site clearing should be performed during the non-breeding season (e.g., September 1 through November 30). During the non-breeding season, the nest should be disassembled by hand and the nest materials (e.g., sticks) removed and disposed of off-site. Any adult animals will be passively relocated into the adjacent woodland habitat. This work should be performed by a qualified biologist in coordination with the CDFW.
4. If site clearing must proceed during the breeding season, it will be necessary to determine whether or not the nest is currently occupied. This may be done by direct observation over the course of at least two evenings no more than 48 hours prior to nest disassembly. Direct observation may consist of installation of wildlife cameras at the nest or by a biologist on the ground. If no animals are observed, the nest may be disassembled by hand. If, during the process of disassembling the nest, live animals are encountered, nest materials should be replaced on top of the nest and the effort abandoned. Nest may not be disassembled if young woodrats are present. Construction must then be postponed until the end of the breeding season.

[51] Wildlife Exclusion Fencing should provide a barrier for terrestrial wildlife gaining access to the project work areas. The fencing may vary to meet the needs of a particular species, but should be buried and/or backfilled to prevent animals passing under the fence and should be high enough to deter reptiles and amphibian or small mammals from climbing or jumping over the fence. Acceptable fencing materials including ERTEC E-Fence® (Ertec Environmental Systems LLC), plywood, corrugated metal, silt fencing or other suitable materials.

Implications of the Proposed Project: Special-Status and Migratory Birds

Within the study area, grasslands and trees provide nesting habitat for special-status bird species, as well as many other migratory bird species. Site clearing activities (e.g., grubbing, grading, trenching, and tree removal or pruning) could result in direct or indirect impacts to nesting birds by causing the destruction or abandonment of occupied nests. To ensure compliance with the MBTA/MBTRA and the CFGC the measures outlined below should be performed.

With the incorporation of these measures, impacts to migratory or other special-status birds would be reduced to a less-than-significant level.

1. Prior to the removal or significant pruning of any trees, they should be inspected by a qualified biologist for the presence of raptor nests. This is required regardless of season. If a suspected raptor nest is discovered, the CDFW shall be notified. Raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW.
2. If clearing and grubbing and tree removal or pruning are to be conducted outside of the breeding season (i.e., September 1 through January 31), no preconstruction surveys for actively nesting migratory birds (passerines or other non-raptor species) is necessary.
3. If clearing and grubbing and tree removal or pruning are to be conducted during the breeding season (i.e., February 1 through August 31), a preconstruction nesting bird survey should be conducted. The survey should be performed by a qualified biologist no more than two weeks prior to the initiation of work. If no nesting or breeding activity is observed, work may proceed without restrictions. To the extent allowed by access, all active nests identified within 76 m (250 ft) for raptors and 33 m (100 ft) for passerines should be mapped.
4. For any active nests found near the construction limits (e.g., 76 m [250 ft] for raptors and 33 m [100 ft] for passerines), the project biologist should make a determination as to whether or not construction activities are likely to disrupt reproductive behavior. If it is determined that construction is unlikely to disrupt breeding behavior, construction may proceed. If it is determined that construction may disrupt breeding, the no-construction buffer zone should be expanded; avoidance is the only mitigation available. The ultimate size of the no-construction buffer zone may be adjusted by the project biologist based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity.

   If it is determined that construction activities are likely to disrupt raptor breeding, construction activities within the no-construction buffer zone may not proceed until the project biologist determines that the nest is long longer occupied.

5. If maintenance of a no-construction buffer zone is not feasible, the project biologist should monitor the nest(s) to document breeding and rearing behavior of the adult birds. If it is determined that construction activities are likely to cause nest abandonment, work should cease immediately and the CDFW and/or the USFWS Division of Migratory Bird Management should be contacted for guidance. Work may not resume until an agreement has been reached with the authorities specifying the conditions under which work may proceed.

Implications for Proposed Project: Special-Status Bats

Removal or pruning of large trees, removal of structures, and construction activities in the vicinity of occupied roosts could result in the destruction of roosts or disruption of breeding of special-status bat species. In addition, disturbance during the maternity roosting season could result in potential roost abandonment and mortality of young. Prior to the removal of mature trees or the demolition or renovation of structures, the measures outlined below should be performed.

With the incorporation of these measures, impacts to special-status bats would be reduced to a less-than-significant level.

1. A preconstruction survey should be conducted by a qualified biologist to identify suitable bat roosting sites.
2. Any trees or structures determined to support or potentially support maternal roosting sites may only be removed or demolished after coordination with the CDFW and/or the USFWS. Passive exclusion of roosting bats will be required and this may only be performed during the non-breeding season (i.e., between October 1 and March 30).
3. Any trees or structures determined to provide suitable bat day or night roosting sites should be identified and marked on site plans. Such roosting sites include snags, rotten stumps, and decadent trees with broken limbs, exfoliating bark, cavities, openings leading to interior portions of any structures. If no suitable roost sites or evidence of bat roosting are identified, impact minimization measures are not warranted. If suitable roosting sites or evidence of bat roosting are identified, the following measures should be conducted:
    a. A qualified biologist should survey suitable roost sites immediately prior to the removal or significant pruning of any of the larger trees, or demolition or significant renovation of any structures.
    b. If the project biologist identifies suitable day or night roost sites or evidence of bat occupation, the following steps should be followed to discourage use of the sites by bats and to ensure that any bats present are able to safely relocate:

For trees:

- Tree limbs smaller than 7.6 cm (3 in) in diameter should be removed and any loose bark should be peeled away.
- Any competing limbs that provide shelter around the potential roost site should be removed to create as open of an area as possible.
- The tree should then be alone to allow any bats using the tree/snag to find another roost during their nocturnal activity period.
- The project biologist should re-survey the trees a second time 48 hours after trimming.
- If no bats are present, work may proceed.
- If bats remain on site, additional measures would be prescribed by the biologist.

For structures:

- Depending on the location of potential roost sites and the nature of bat occupation, partial dismantling of a suspect structure may be performed to discourage use by bats. Partial dismantling may consist of the removal of siding, roof sections, and roof gables to permit air flow and exposure to sunlight. This work should be performed under the supervision and direction of a qualified biologist.
- The project biologist should re-survey the structures a second time 48 hours after performance of the partial dismantling work.
- If no bats are present, work may proceed.
- If bats remain on site, additional measures would be prescribed by the biologist.

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APPENDIX A

SITE PHOTOGRAPHS

Photographs taken March 12, 2015

1. View of front of #45 West Dunne, looking N.

2. View of front of site, looking NE.

3. View of back of #45 West Dunne, looking S.

4. View of back of property, looking S.

5. View of front of middle parcel, looking N.

6. View of back of middle parcel, looking E.

7. View of front of western parcel, looking S.

8. View of back of western parcel, looking W.

View of flood channel, looking upstream.

View of flood channel at downstream (S) end, looking downstream

View of flood channel from left bank, looking upstream.

View of flood channel from left bank, looking downstream.

APPENDIX B

DATABASE PRINT-OUTS FOR SPECIAL-STATUS SPECIES

California Natural Diversity Database (2015)
USFWS Database (2015)
California Native Plant Society (201)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Mt. Sizer (3712125) or Morgan Hill (3712126) or Mt. Madonna (3712116) or Gilroy (3712115) or Isabel Valley (3712135) or Santa Teresa Hills (3712127) or Loma Prieta (3712117) or Lick Observatory (3712136) or San Jose East (3712137))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Endangered	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos andersonii Anderson's manzanita	PDERI04030	None	None	G2	S2	1B.2
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1
Calyptridium parryi var. hesseae Santa Cruz Mountains pussypaws	PDPOR09052	None	None	G3G4T2	S2	1B.1
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Castilleja affinis var. neglecta Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1	S1	1B.2
Castilleja rubicundula var. rubicundula pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Ceanothus ferrisiae Coyote ceanothus	PDRHA041N0	Endangered	None	G2	S2	1B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Chorizanthe pungens var. pungens Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cirsium fontinale var. campylon Mt. Hamilton fountain thistle	PDAST2E163	None	None	G2T2	S2	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Dipodomys venustus venustus Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	
Dudleya abramsii ssp. setchellii Santa Clara Valley dudleya	PDCRA040Z0	Endangered	None	G4T2	S2	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eriastrum tracyi Tracy's eriastrum	PDPLM030C0	None	Rare	G3Q	S3	3.2
Eryngium aristulatum var. hooveri Hoover's button-celery	PDAPI0Z043	None	None	G5T1	S1	1B.1
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2	S2	1B.1
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Leptosyne hamiltonii Mt. Hamilton coreopsis	PDAST2L0C0	None	None	G2	S2	1B.2
Lessingia micradenia var. glabrata smooth lessingia	PDAST5S062	None	None	G2T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lomatium observatorium Mt. Hamilton lomatium	PDAPI1B2J0	None	None	G1	S1?	1B.2
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Malacothamnus aboriginum Indian Valley bush-mallow	PDMAL0Q020	None	None	G2	S2	1B.2
Malacothamnus arcuatus arcuate bush-mallow	PDMAL0Q0E0	None	None	G1Q	S1	1B.2
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2Q	S2	1B.2
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S1	1B.1
Microcina homi Hom's micro-blind harvestman	ILARA47020	None	None	G1	S1	
Microcina jungi Jung's micro-blind harvestman	ILARA47030	None	None	G1	S1	
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G2G3	S2S3	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Oncorhynchus mykiss irideus steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Oncorhynchus mykiss irideus steelhead - south/central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	SSC
Penstemon rattanii var. kleei Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	G4T2	S2	1B.2
Pentachaeta exilis ssp. aeolica San Benito pentachaeta	PDAST6X041	None	None	G5T1	S1	1B.2
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G1	S1	1B.2
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
Plagiobothrys verrucosus warty popcorn-flower	PDBOR0V1D0	None	None	G4?	S1	2B.1
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Sanicula saxatilis rock sanicle	PDAPI1Z0H0	None	Rare	G2	S2	1B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Streptanthus albidus ssp. albidus Metcalf Canyon jewelflower	PDBRA2G011	Endangered	None	G2T1	S1	1B.1
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus callistus Mt. Hamilton jewelflower	PDBRA2G0A0	None	None	G1	S1	1B.3
Sycamore Alluvial Woodland Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 72

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

March 10, 2015

Document Number: 150310121026

Mr. Michael Wood
Wood Biological Consulting Inc.
65 Alta Hill Way
Walnut Creek, CA 94595

Subject: Species List for 35-59 West Dunne Avenue Los Gatos

Dear: Mr. Wood

We are sending this official species list in response to your March 10, 2015 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 08, 2015.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found http://www.fws.gov/sacramento/es/Branch-Contacts/es_branch-contacts.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 150310121026

Current as of: March 10, 2015

Quad Lists

Listed Species

Invertebrates

Euphydryas editha bayensis
- bay checkerspot butterfly (T)
- Critical habitat, bay checkerspot butterfly (X)

Fish

Eucyclogobius newberryi
- tidewater goby (E)

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central California coastal steelhead (X) (NMFS)
- South Central California steelhead (T) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
- California red-legged frog (T)
- Critical habitat, California red-legged frog (X)

Birds

Brachyramphus marmoratus
- marbled murrelet (T)

Coccyzus americanus occidentalis
- Western yellow-billed cuckoo (T)

Sternula antillarum (=Sterna, =albifrons) browni
- California least tern (E)

Vireo bellii pusillus
- Least Bell's vireo (E)

Mammals

Vulpes macrotis mutica
- San Joaquin kit fox (E)

Plants

Castilleja affinis ssp. neglecta
- Tiburon paintbrush (E)

Ceanothus ferrisae
- Coyote ceanothus (E)

Chorizanthe robusta var. robusta

robust spineflower (E)

Dudleya setchellii
Santa Clara Valley dudleya (E)

Holocarpha macradenia
Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)

Lasthenia conjugens
Contra Costa goldfields (E)

Streptanthus albidus ssp. albidus
Metcalf Canyon jewelflower (E)

Proposed Species

Amphibians

Rana draytonii
Critical habitat, California red-legged frog (PX)

Quads Containing Listed, Proposed or Candidate Species:

MT. SIZER (406A)
MORGAN HILL (406B)
MT. MADONNA (406C)
GILROY (406D)
SANTA TERESA HILLS (407A)
LOMA PRIETA (407D)
LICK OBSERVATORY (426C)
ISABEL VALLEY (426D)
SAN JOSE EAST (427D)

County Lists

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)
S

Branchinecta lynchi
vernal pool fairy shrimp (T)
S

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)
S

Euphydryas editha bayensis
bay checkerspot butterfly (T)
Critical habitat, bay checkerspot butterfly (X)
S

Incisalia mossii bayensis
San Bruno elfin butterfly (E)
S

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)
S

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)
S

Eucyclogobius newberryi
tidewater goby (E)
S

Hypomesus transpacificus
delta smelt (T)
S

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)
Critical habitat, coho salmon - central CA coast (X) (NMFS)
S

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
South Central California steelhead (T) (NMFS)
S

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)
S

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
S

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)
S

Reptiles

Gambelia (=Crotaphytus) sila
blunt-nosed leopard lizard (E)
S

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
S

Thamnophis gigas
giant garter snake (T)
S

Thamnophis sirtalis tetrataenia
San Francisco garter snake (E)
S

Birds

Brachyramphus marmoratus
Critical habitat, marbled murrelet (X)
marbled murrelet (T)
S

Charadrius alexandrinus nivosus
western snowy plover (T)
S

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)
S

Pelecanus occidentalis californicus
California brown pelican (E)
S

Rallus longirostris obsoletus
California clapper rail (E)
S

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)
S

Vireo bellii pusillus
Least Bell's vireo (E)
S

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)
S

Vulpes macrotis mutica
San Joaquin kit fox (E)
S

Plants

Acanthomintha duttonii
San Mateo thornmint (E)
S

Castilleja affinis ssp. neglecta
Tiburon paintbrush (E)
S

Ceanothus ferrisae
Coyote ceanothus (E)

S

Chorizanthe robusta var. robusta
robust spineflower (E)
S

Cirsium fontinale var. fontinale
fountain thistle (E)
S

Dudleya setchellii
Santa Clara Valley dudleya (E)
S

Eriophyllum latilobum
San Mateo woolly sunflower (E)
S

Hesperolinon congestum
Marin dwarf-flax (=western flax) (T)
S

Holocarpha macradenia
Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)
S

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)
S

Streptanthus albidus ssp. albidus
Metcalf Canyon jewelflower (E)
S

Suaeda californica
California sea blite (E)
S

Trifolium amoenum
showy Indian clover (E)
S

Proposed Species

Amphibians

Rana draytonii
Critical habitat, California red-legged frog (PX)
S

Key:

(E) *Endangered* - Listed as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service.

Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result

in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 08, 2015.

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

61 matches found. *Click on scientific name for details*

Search Criteria
Found in 9 Quads around 37121B6

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	4.2	S4	G4
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5?T3T4
Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	Montiaceae	annual herb	1B.1	S2	G3G4T2
Calystegia collina ssp. venusta	South Coast Range morning-glory	Convolvulaceae	perennial rhizomatous herb	4.3	S4	G4T4
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
Castilleja affinis var. neglecta	Tiburon paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	1B.2	S1	G4G5T1
Castilleja rubicundula var. rubicundula	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S2	G5T2
Ceanothus ferrisiae	Coyote ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chorizanthe douglasii	Douglas' spineflower	Polygonaceae	annual herb	4.3	S4	G4
Chorizanthe pungens var. pungens	Monterey spineflower	Polygonaceae	annual herb	1B.2	S2	G2T2
Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	Asteraceae	perennial herb	1B.2	S2	G2T2
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	4.2	S4	G4
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	4.3	S3	G5?T3
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	1B.2	S2	G2
Cryptantha rattanii	Rattan's cryptantha	Boraginaceae	annual herb	4.3	S4	G4
Cypripedium fasciculatum	clustered lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S4	G4
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3T3
Dudleya abramsii ssp. setchellii	Santa Clara Valley dudleya	Crassulaceae	perennial herb	1B.1	S2	G4T2
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	4.3	S4	G4
Eriastrum tracyi	Tracy's eriastrum	Polemoniaceae	annual herb	3.2	S3	G3Q
Eryngium aristulatum var. hooveri	Hoover's button-celery	Apiaceae	annual / perennial herb	1B.1	S1	G5T1
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2

Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	4.2	S3	G5T3
Helianthus exilis	serpentine sunflower	Asteraceae	annual herb	4.2	S3	G3Q
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	1B.1	S2	G2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3	G3
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1	S2	G2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	4.2	S4	G4
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosyne hamiltonii	Mt. Hamilton coreopsis	Asteraceae	annual herb	1B.2	S2	G2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	3	S3	G3
Lessingia micradenia var. glabrata	smooth lessingia	Asteraceae	annual herb	1B.2	S2	G2T2
Lessingia tenuis	spring lessingia	Asteraceae	annual herb	4.3	S4	G4
Lomatium observatorium	Mt. Hamilton lomatium	Apiaceae	perennial herb	1B.2	S1?	G1
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Malacothamnus aboriginum	Indian Valley bush-mallow	Malvaceae	perennial deciduous shrub	1B.2	S2	G2
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S1	G1Q
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	1B.1	S1	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	Plantaginaceae	perennial herb	1B.2	S2	G4T2
Pentachaeta exilis ssp. aeolica	San Benito pentachaeta	Asteraceae	annual herb	1B.2	S1	G5T1
Phacelia phacelioides	Mt. Diablo phacelia	Boraginaceae	annual herb	1B.2	S1	G1
Plagiobothrys glaber	hairless popcorn-flower	Boraginaceae	annual herb	1A	SH	GH
Plagiobothrys verrucosus	warty popcorn-flower	Boraginaceae	annual herb	2B.1	S1	G4?
Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	1B.2	S2	G2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Streptanthus albidus ssp. albidus	Metcalf Canyon jewel-flower	Brassicaceae	annual herb	1B.1	S1	G2T1
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Streptanthus callistus	Mt. Hamilton jewel-flower	Brassicaceae	annual herb	1B.3	S1	G1
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	1B.1	S1	G1
Trifolium buckwestiorum	Santa Cruz clover	Fabaceae	annual herb	1B.1	S2	G2

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 10 March 2015].

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APPENDIX C

EXPLANATION OF RARITY STATUS CODES

EXPLANATION OF RARITY STATUS CODES

ENDANGERED SPECIES ACT (ESA) LISTING CODES

FE = federally listed as Endangered
FT = federally listed as Threatened
FPE = proposed for listing Endangered
FPT = proposed for listing Threatened
FC = federal candidate; former Category 1 candidates
FD/FPD = delisted/proposed for delisting
SC = species of concern; established by NMFS, effective April 15, 2004.

CALIFORNIA ENDANGERED SPECIES ACT (CESA) LISTING CODES

SE = state-listed as Endangered
ST = state-listed as Threatened
SR = state-listed as Rare
SCE = state candidate for listing as Endangered
SCT = state candidate for listing as Threatened
SD/SCD = delisted/State candidate for delisting

GLOBAL AND STATE RANKINGS

G1/S1 = Critically imperiled: at high risk of extinction, extremely rare.
G2/S2 = Imperiled: at high risk of extinction, restricted range, very few populations.
G3/S3 = Vulnerable: moderate risk of extinction, restricted range, few populations.
G4/S4 = Apparently secure: uncommon, not rare, possible long-term declines.
G5/S5 = Secure: common, widespread, abundant.

CALIFORNIA NATIVE PLANT SOCIETY DESIGNATIONS

List 1: Plants of highest priority.
List 1A: Plants presumed extinct in CA.
List 1B: Plants rare and endangered in CA and elsewhere.
List 2A: Plants presumed extirpated in CA but common elsewhere.
List 2B: Plants rare, threatened or endangered in CA but common elsewhere.
List 3: Plants for which additional data are needed – Review List.
List 4: Plants of limited distribution – Watch List.

CNPS Threat Code Extensions

.1 - Seriously endangered in CA
.2 – Fairly endangered in CA
.3 – Not very endangered in CA

OTHER CODES

ABC: WL - American Bird Conservancy Watch List of Birds of Conservation Concern.

AFS - American Fisheries Society categories of risk for marine, estuarine and diadromous fish stocks. Codes: **E**=endangered; **T**=threatened; **V**=vulnerable

AUD: WL - Audubon: Watch List 2007. Bird species facing population decline and/or threats such as loss of breeding and wintering grounds, or species with limited geographic ranges. **R** – Red List, global conservation concern; **Y** – Yellow List, national conservation concern.

BLM: S - Bureau of Land Mgt: Sensitive. Includes species under review by USFWS or NMFS, species whose numbers are declining so rapidly that federal listing may become necessary, species with small and widely dispersed populations, or species inhabiting refugia or other unique habitats.

CDF: S – CA Dept. of Forestry and Fire Protection: Sensitive. Includes species that warrant special protection during timber operations.

DFW: FP - CA Dept. of Fish and Wildlife: Fully Protected. Species protected under §§3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.

DFW: SA - CA. Dept. of Fish and Wildlife: Special Animal. Species included on the CDFW's lists of special animals.

DFW: SP - CA Dept. of Fish and Wildlife: Special Plant. Species included on the CDFW's lists of special plants.

DFW: SSC - CA Dept. of Fish and Wildlife: California Species of Special Concern.

DFW: WL - CA Dept. of Fish and Wildlife: (Watch List): taxa that don't meet SSC criteria but about which there is concern and additional information is needed to clarify status.

FS: S - USDA Forest Service: Sensitive. Species whose population viability is a concern, as evidenced by significant current or predicted downward trends in numbers or density, or in habitat capability that would reduce a species' existing distribution.

FWS: BCC - U.S. Fish and Wildlife Service: Birds of Conservation Concern. Migratory and non-migratory bird species that represent the USFWS's highest conservation priorities.

FWS: BEPA - U.S. Fish and Wildlife Service: Bald Eagle Protection Act.

FWS: MBTA U.S. Fish and Wildlife Service: International Migratory Bird Treaty Act.

FWS: MNB - U.S. Fish and Wildlife Service: Migratory Nongame Birds of Management Concern. Species of concern in the U.S. due to documented or apparent population declines, small or restricted populations, or dependence on restricted or vulnerable habitats.

MMPA – Marin Mammal Protection Act

NMFS: SC - National Marine Fisheries Service: Species of Concern.

WBWG - Western Bat Working Group. Priority for funding, planning or conservation actions. Codes: **H**=high; **MH**=medium-high; **M**=medium; **LM**=low-medium

Xerces - Xerces Society Red List.
Codes: **C**=critically imperiled; **I**=imperiled; **V**=vulnerable; **D**=data deficient

ATTACHMENT 3

TREE/SITE REPORT FOR

45 WEST DUNNE AVENUE, MORGAN HILL CA 95037

BY

MIGHTY TREE MOVERS

JUNE 13, 2013

DEVELOPMENT SERVICES
JUN 13 2013
CITY OF MORGAN HILL

MIGHTY TREE MOVERS INC.

ARBORIST REPORT-Tree/Site Report

45 West Dunne Ave Morgan Hill CA 95037

Prepared for:

Gera-Dunne Project Team

Prepared by:

David Hamilton

Mighty Tree Movers Inc.

Certified Arborist #WE-8858A

PO BOX 12

Los Gatos, CA 95031

Lic# 916423

www.MightyTreeMovers.com

408-464-5200

408-317-1763 Fax

David@MightyTreeMovers.com

SD-13-08/DA-13-05/ZA-13-07:
W. DUNNE-D & Z (GERA)

Objectives:

The objective of this report is to document the significant and indigenous trees on proposed site (45 West Dunne Ave), the health and structure of these trees, and recommendations for removal and trimming. The result of this assessment, while working with proposed development plan, should be a clear outline of significant tree removals and the efforts by all to keep the majority of large indigenous trees on site for the new homeowners and community. Specific trimming specifications and a detailed tree protection plan should be provided prior to work starting. The significant trees, especially the large oak trees will need a comprehensive plan to ensure any work done does not negatively impact the trees and their root systems.

Recommendations, analysis and opinions will be based on site-walk-through and analysis of current property, plans, tree locations and condition, size, known growth habits, and proximity to buildings and potential targets.

Report Summary

Twenty-three significant trees were evaluated for this project/site plan. Details of the trees size, type and health are provided in chart below. A general description of trees and property location, along with photos is also below.

Based upon the plans provided that I have reviewed for this project:

- **Eighteen** trees will remain in place.
- **Five** trees recommended for removal. (One is dead and one is a hazard)
- Professional tree trimming and protection plan* for trees to remain.

*An appropriate tree protection plan should be completed and included with the building permit set of developmental plans. This information and recommendations would be available for on-site work. It will be the owners and contractors responsibility to follow any protection guidelines set.

The Tree Preservation Strategy for this project is:

Attempt to maintain majority of green tree canopy footprint on the property. Attempt to save as many of the significant indigenous trees except those too close to proposed construction, trees that are in poor condition, pose unacceptable risk, or that may cause significant problems on the renovated site.

My general impression of the trees on this site is:

The trees on this property have not seen much attention in years, this development plan however, has highlighted the most prominent trees, and at the same time having a minimal impact on the overall canopy footprint of the property. It is apparent to me, as an arborist, that the site design has maximized the preservation of the most significant and mostly native trees.

Overall the property landscape, trees and buildings are in a state of disrepair and neglect. I expect that with the proper trimming, protection and subsequent irrigation and care the site with these trees will be an asset to the neighborhood, rather than an overgrown lot.

The dominating impression was that the large Valley oaks and some of the Live oaks are a huge asset for this property. The largest of the oaks, has one of the most majestic spreading Valley oak canopies I have ever seen.

Property and Area

The property located at 45-55 West Dunne Avenue has many significant trees, including many native Coast Live and Valley oaks. Many of these trees are over 50 years old as well as a few over 100 years old. Among these trees is a very large, healthy Valley oak, with good structure and canopy balance. There are no evident major weak spots or dead or broken limbs, which is rare for such a tree of this age and size. It is a huge asset to the property and neighborhood and should be well-enjoyed by the future residents of this property. Root zone and lower branch protection will be important for this tree.

General Property and neighborhood description:

Property is located just West of Monterey Highway on East Dunne Avenue. It is the first property on the North side of Dunne, adjacent to Truman Auto care located on Monterey. As described above there are a lot of significant trees on this property that are also indigenous to the area. There are also some younger and smaller trees that have volunteered around the perimeter of the property, due to the lack of property maintenance and regular landscaping. The property is somewhat overgrown with multiple detached buildings littering the property in disrepair. These fruit/nut and other smaller volunteer trees are not documented, other than by photographs.

The surrounding properties, mainly north of this property, have some large trees as well, mainly oaks with some English walnuts as well. The area has good access and is very close to various shopping, retails and food/service, as well as within ½ mile of 101 freeway access. There are currently two free-standing houses on the property with residents occupying them. There are also several detached garages and buildings that are not in use or in major disrepair. During the site walk-through, the proposed plans were used to validate measurements, trees, their health and vigor and help identify trees that may have common defects of structural weaknesses that could impact the future safety of the site. Photos were taken of trees and property for proper documentation.

Main TREE SPECIES & ATTRIBUTES

Valley Oak (Quercus lobata): These trees, the largest of the oaks in Northern California, are a huge asset to this property and area. These trees dominate the oaks on the West side of the property, where the Coast Live oaks dominate the East half of the property, they range from 35 inches in circumference to 160 inches. The biggest oak in the center of the property is a near perfect specimen. It is healthy and has had no major damage and no visible trouble spots. With some much needed maintenance pruning, canopy lifting and weight reduction trimming, this will be the centerpiece for this property. There are 6 notable Valley oaks at this location, only one is recommended for removal.

This Valley oak recommended for removal **is** a hazard; see below for more details on this tree.

Coast Live Oak (Quercus agrifolia): These trees dominate the Western half and back of the property. There are several large specimen trees, with the majority being healthy with good form and structure. These trees do need regular maintenance and canopy reduction trimming, which these have not received. These trees will all benefit long-term from some professional trimming and strategic branch removal of large co-dominant stems. Some upper branch die-back was present on 2 largest Live oaks.

Cedrus deodaras and other conifers: After the oaks the next largest group of trees would be the pines and spruces closer to the front of the property. There is one dead redwood tree (#3) that will be removed and one deodara recommended for removal below. The two dominant conifers at the sidewalk are about 60 feet tall, with a canopy spreading 50 feet. A large Atlas Cedar has a great bluish canopy that stands out from the usual greener California natives. The other large conifer at the sidewalk is a Cedrus deodara.

RESULTS OF STUDY AND SITE EVALUATION

Dead & Hazardous tree removal: (Pictures below)

- (1) 100% dead redwood behind existing house on western side of property (Tree#3)
- (1) damaged and leaning Valley oak (Tree #19) *This tree has heavy damage on trunk, with estimated more than 25% dead wood at the base. This tree also has a very evident lean due to phototropism, or growing under its' parent Valley oak tree. The tree suffered past damage and currently has an insignificant canopy, with poor structure, that adds nothing to the property or tree canopy footprint. This tree is a hazard based on current condition and should be removed regardless of any development.
- Many small volunteer fruit and nut trees along perimeter to be removed.

Trees to be removed to accommodate proposed planned development:

- (2) Coast live oaks (Trees #4 & 9) are in proposed locations for homes and will need to be removed to allow building as proposed.

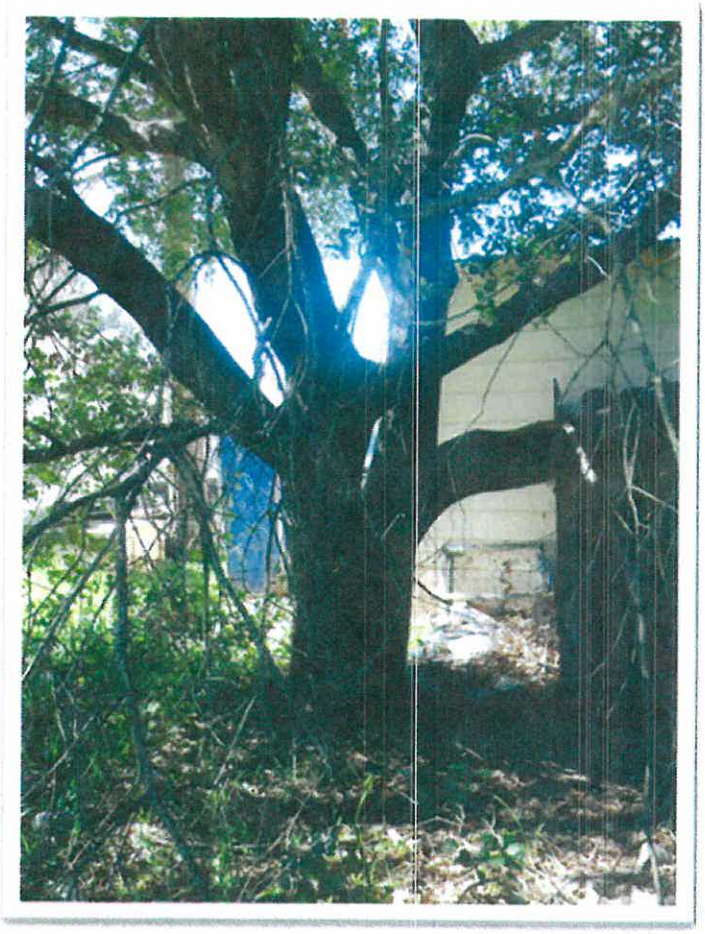
- (1) Cedrus deodara tree to be removed. (Tree#17) This tree is located to close to proposed foundation boundary for new home, and would immediately be a concern for property and family, as well as general maintenance for the house.

Tree trimming and protection:

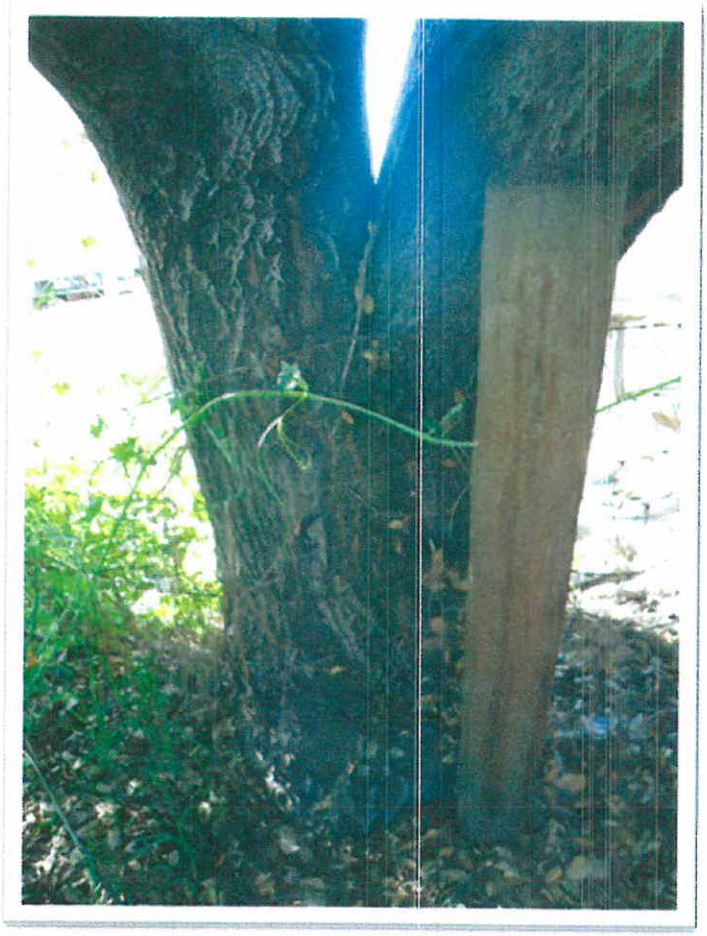
- This report does not include a complete trimming and protection plan. These are both highly recommended prior to work start date. Many of these trees have huge potential to be beautiful specimen trees, appreciated by all. Therefore a strategy with a professional tree trimming company should be thought out and planned, taking into account all aspects of the development and phases of construction. Weights reduction and structural pruning of low-hanging branches will be important for long-term health of the trees and the safety of the residents.
- A detailed tree protection should be part of the building teams 'strategy from the beginning. Tree protection will include root zone protection from compaction, designated construction equipment travel paths and maintenance during construction. Long-term irrigation needs should also be taken into consideration during planning and development phases.

				45/55 Dunne Ave Morgan Hill CA	
				Significant Indigenous Trees	
Tree #	Circumference	Species Red=Removal	Health/ Structure	Comments	
1	76"	Coast Live Oak	Good	Needs sidewalk clearance trimming and canopy reduction	
2	Multi-trunk (2-3)	Valley Oak-small	Poor	Leaning, poor structure	
3	35"	Coastal Redwood	Dead	100% dead-remove/hazard	
4	75" oak	Coast Live Oak	Good	Removal due to construction footprint-included bark flaw	
5	46"	Coast Live Oak	Good	Good structure/healthy canopy	
6	74"	Coast Live Oak	Good	Co-dominant stems-fair structure and health-some upper die-back	
7	100"	Coast Live Oak	good/mode	On neighboring property, large branch needs to be removed-too low	
8	38"	Coast Live Oak	Good	Nice structure and green canopy	
9	55"	Coast Live Oak	Good	Nice structure and green canopy	
10	56"	Valley Oak	Excellent	Nice structure and trunk taper	
11	57"	Coast Live Oak	moderate	Hidden, needs mainetenance pruning and clearing	
12	23"	Coast Live Oak	good		
13	33"	Valley Oak	good		
14	36"	Coast Live Oak	good		
15	58"	spruce	moderate	Would benefit from regular maintenance, trimming and irrigation	
16	160"	Valley Oak	Excellent	Showpiece of the property-Some trimming necessary for safety	
17	82"	Cedrus Deodara	Good	Removal due to construction footprint-included bark flaw	
18	123"	Valley Oak	Good	Overshadows 2nd Valley oak 10 feet from trunk.	
19	100"	Valley Oak	Poor	Damaged. Leaning, lots of dead wood in trunk-hazard-remove	
20	85"	Atlas Cedar	Good	Some pruning for aestetics and weight reduction	
21	85"	Cedrus Deodara	good		
22	95"	Valley Oak	good	poor location, intemixed with cedrus deodara, trimming recommended	
23	45"	Monterey Pine	good	Not much needed on this tree.	

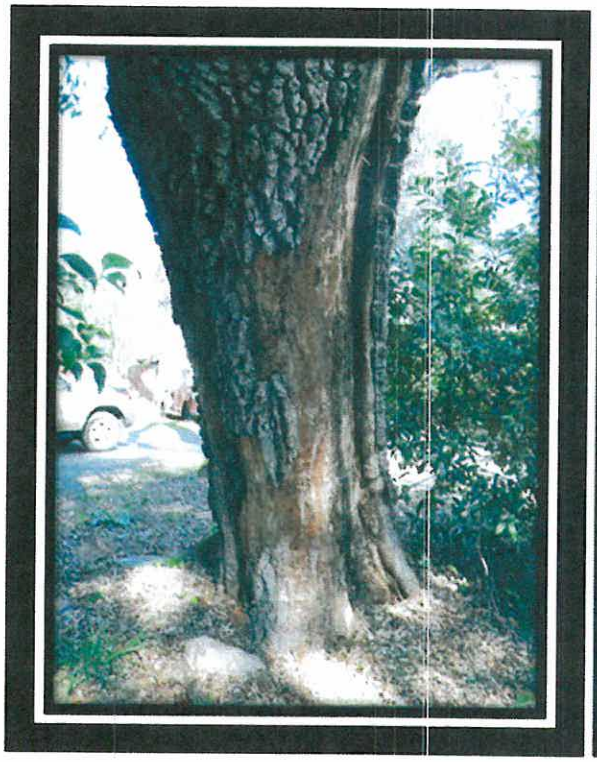
Tree# 9 Removal

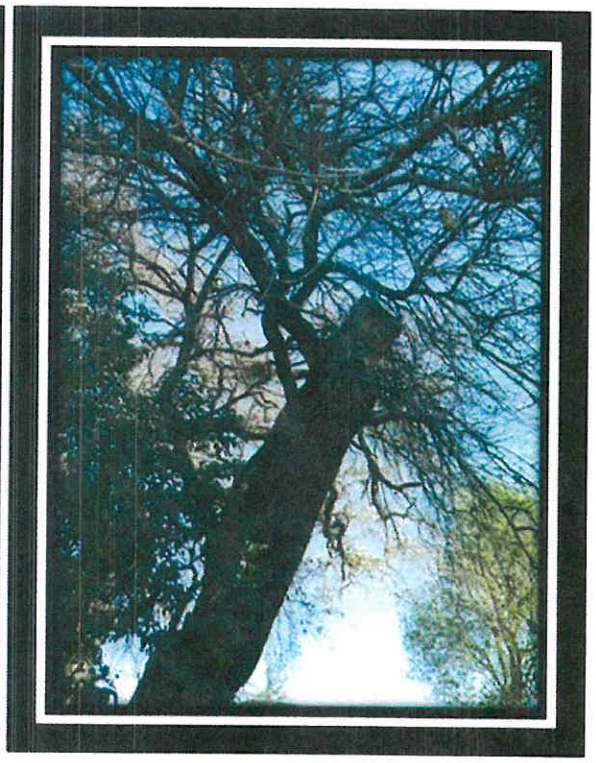


Tree# 4 Removal



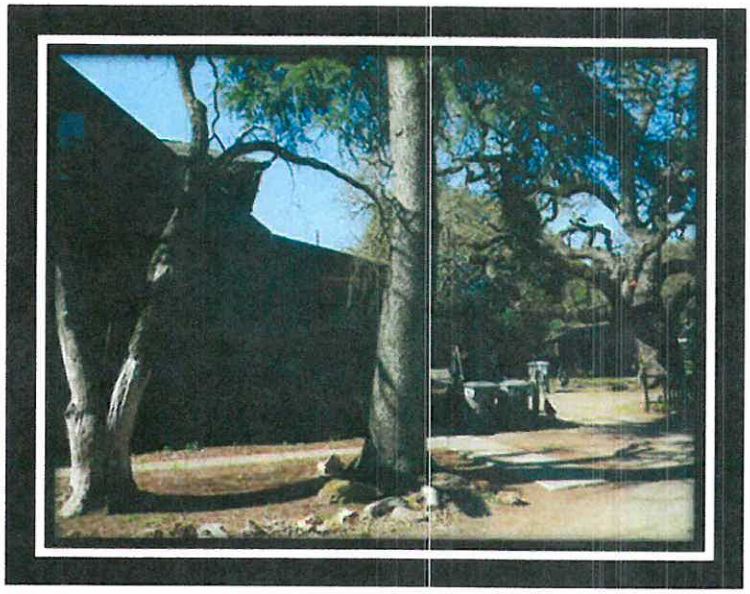
Tree#4 –Included bark & co-dominant stems





Tree#19 Valley oak-remove Hazard Tree

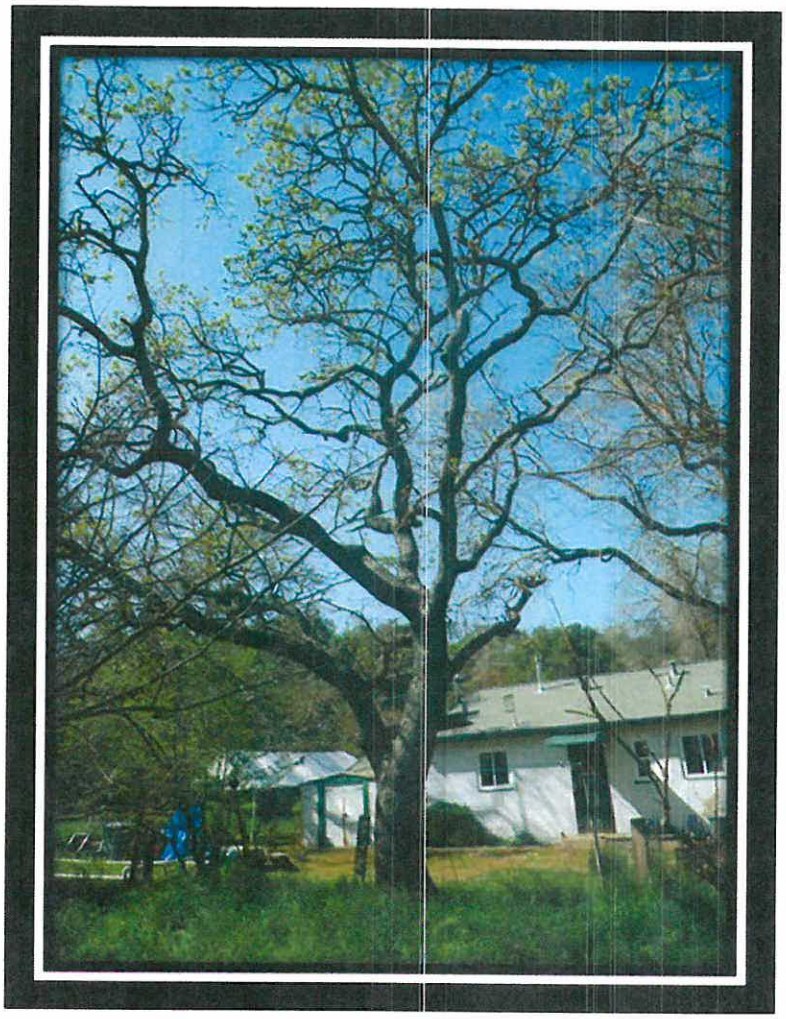
Tree#17 Remove-Too close to foundation



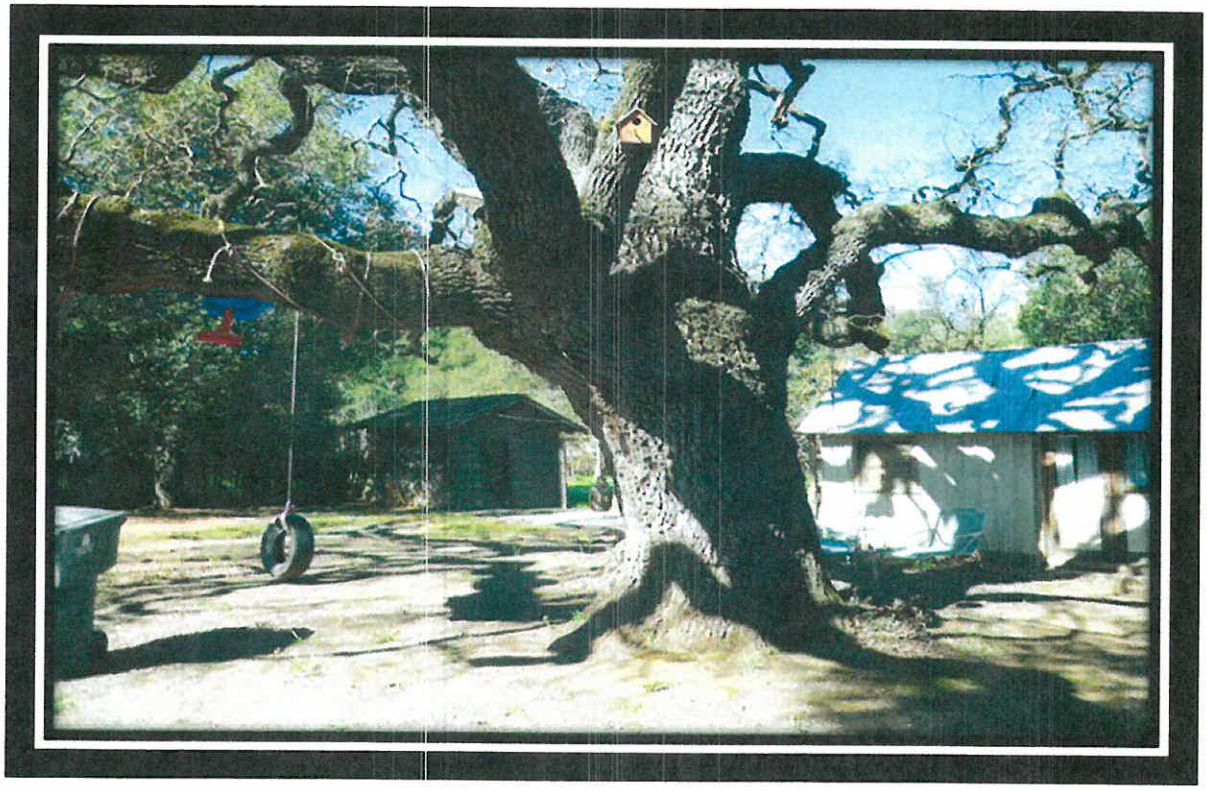
Tree# 3 Remove- Dead

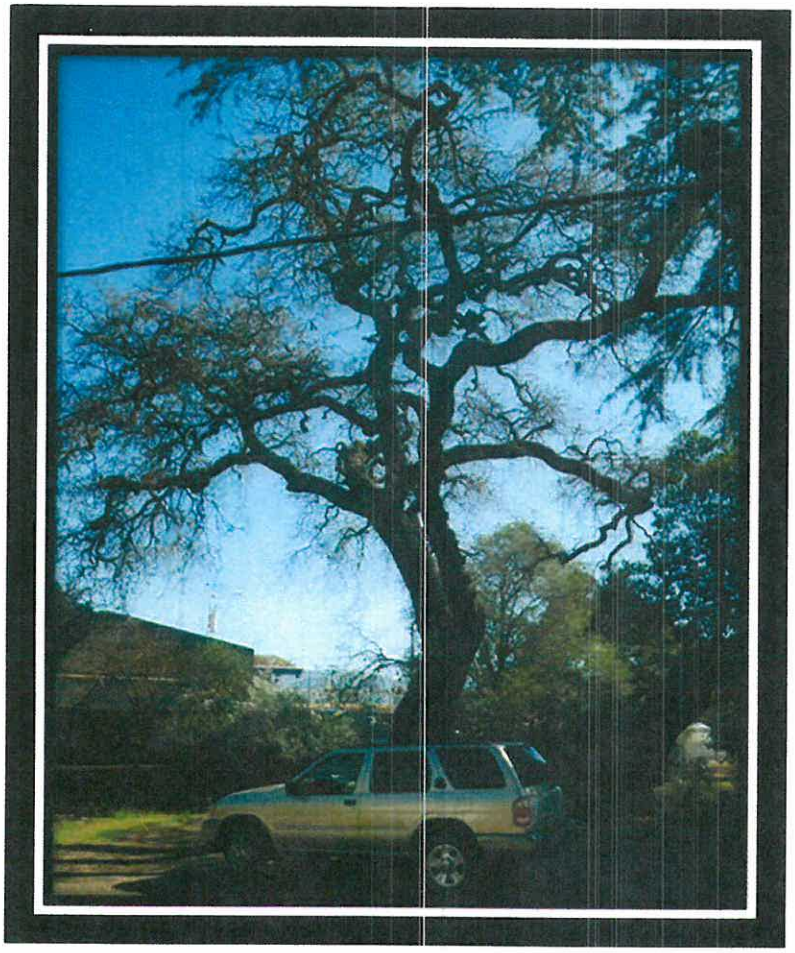
Stars are (5) listed removals. Green circles are significant trees being preserved.

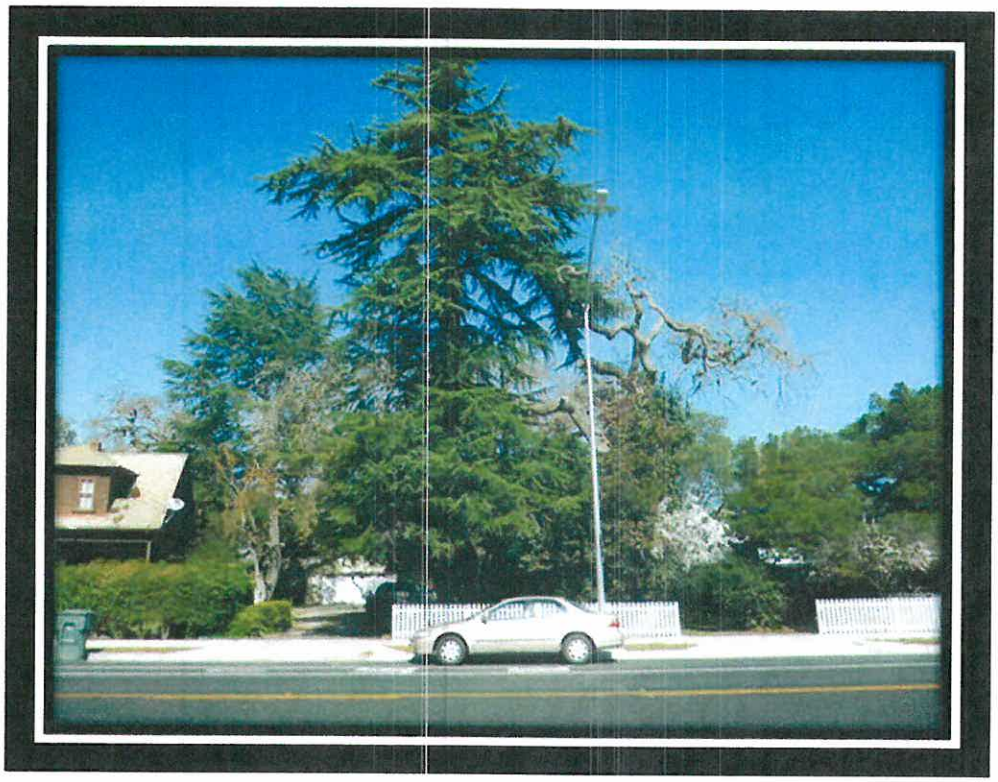
Some documented significant/indigenous trees to remain below:

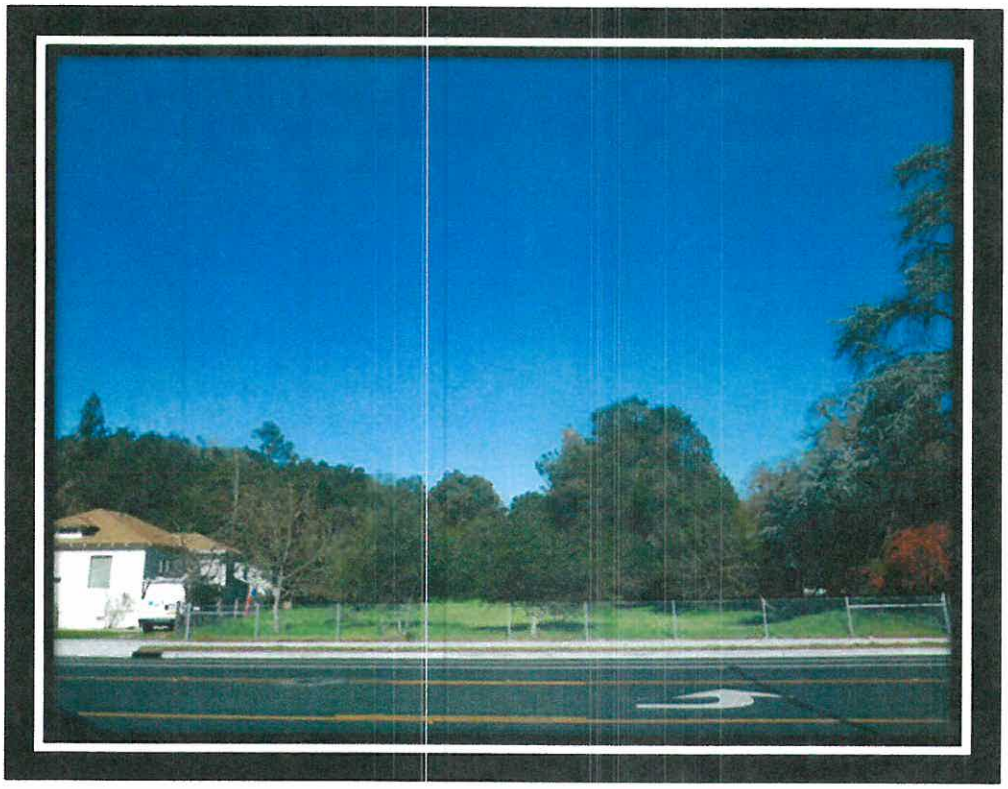


Valley oak at property line at back of property.









Brush and volunteers to be removed.

ATTACHMENT 4

FLOOD STUDY

FOR GERA SUBDIVISION

WEST DUNNE AVENUE

MORGAN HILL, CA

BY

MH ENGINEERING CO.

APRIL 27, 2015

MH engineering Co.

16075 Vineyard Blvd., Morgan Hill, CA 95037
(408) 779-7381/226-3050; Fax (408) 226-5712

Flood Study for "Gera Subdivision"

West Dunne Avenue
Morgan Hill, CA

by
MH Engineering Co.

April 27, 2015 215004

Flood Plain Study
For Gera Subdivision
Located on
West Dunne Avenue

Introduction

This study is prepared for an environmental review regarding the 19 unit residential development proposed by Gera Construction Company, located on a 1.4 acre property, on north side of West Dunne Avenue. This project is within the watershed of West Little Llagas Creek.

Flood Insurance Rate maps (FIRM) show that over 50 percent of the project lies within the AE Flood Zone. See attached Exhibit A. The project Site Plan shows a driveway and parking immediately adjacent to the existing West Little Llagas Creek.

Study

The effects of the proposed development have been evaluated using a converted HEC-2 hydraulic model to the more modern HEC-RAS computer modeling software. The HEC-2 model of the effective BFE was obtained from the Santa Clara Valley Water District (SCVWD) website. The published FEMA "Flood profile" was obtained from the Flood Insurance Study (FIS) for Santa Clara County California dated May 18, 2009 on Panel 163P for West Little Llagas Creek and is attached as Exhibit B.

There was considerable difficulty developing a corrected effective model from the converted HEC-2 file. Also, the effective flood profile does not match the effective FIRM map in same location. The root of the problem is two fold. First, the culvert crossing E. Dunne Avenue as modeled begins just upstream of W. Dunne Avenue but in reality it begins 85 feet north of W. Dunne Avenue. The second issue is that the W. Dunne culvert was modeled as 610 feet long culvert, ending on the southside of Ciolino Street downstream of Dunne Avenue. This leaves a significant gap in available cross sections to model the surface flow between Dunne Avenue and Ciolino Street.

Modeling Approvals

The best fit computer model to match the effective profile from panel 163P was obtained by moving the upstream Dunne avenue culvert inlet to it's actual location 85 feet upstream of the original model location in the HEC-2. Then the culvert was modeled as a lateral structure removing the culvert flows and several additional cross sections were added between Dunne Avenue and Ciolino Street to model the accurate surface flows in this reach. The culvert (diverted) flow was introduced back into the creek at D/S Ciolino Street.

Significant Impact

In order to determine the impact of the proposed development the corrected effective model was used as a basis for project fills in the floodplain. Four scenarios were studied, based on the limits of fill next to the creek. A model was developed for a 25 foot setback from the centerline of the creek, which corresponds with the proposed development. As this seemed to increase the upstream flood elevations over 0.8 feet, models were created with setbacks for fill at 50 feet and at 75 feet which will require some modification of the proposed project. The fourth model is a hybrid of the 75 foot setback which restricts fill to 50' offset at RS 382.2 and 75' at RS 382 to 380. See Exhibit C.

Land Surveyors were used to measure the existing finish floor elevations of potentially impacted structures near the project. All the affected structures are located south of Fifth Street, north of W. Dunne Avenue and west of Monterey Road. The structures include three houses on Fifth Street, CitiBank on the corner of Fifth Street and Monterey Road, Country Realty building and a gas station on the corner of Monterey Road and West Dunne Avenue.

Results

A "Results Summary Table" is made part of this study Exhibit D. The table is a print out of the HEC-RAS modeling with river stations, modeled plans, channel lengths, flow rates and water surface elevations. It also has the Base Flood Elevations (BFE) taken from the Profiles and FIRM maps.

Also added in the right side margin are the surveyed structure finish floor elevations and the existing floor elevation relative differences to the effective BFE (profile elevations) the various modeled plans based on offsets of development from the center of the creek.

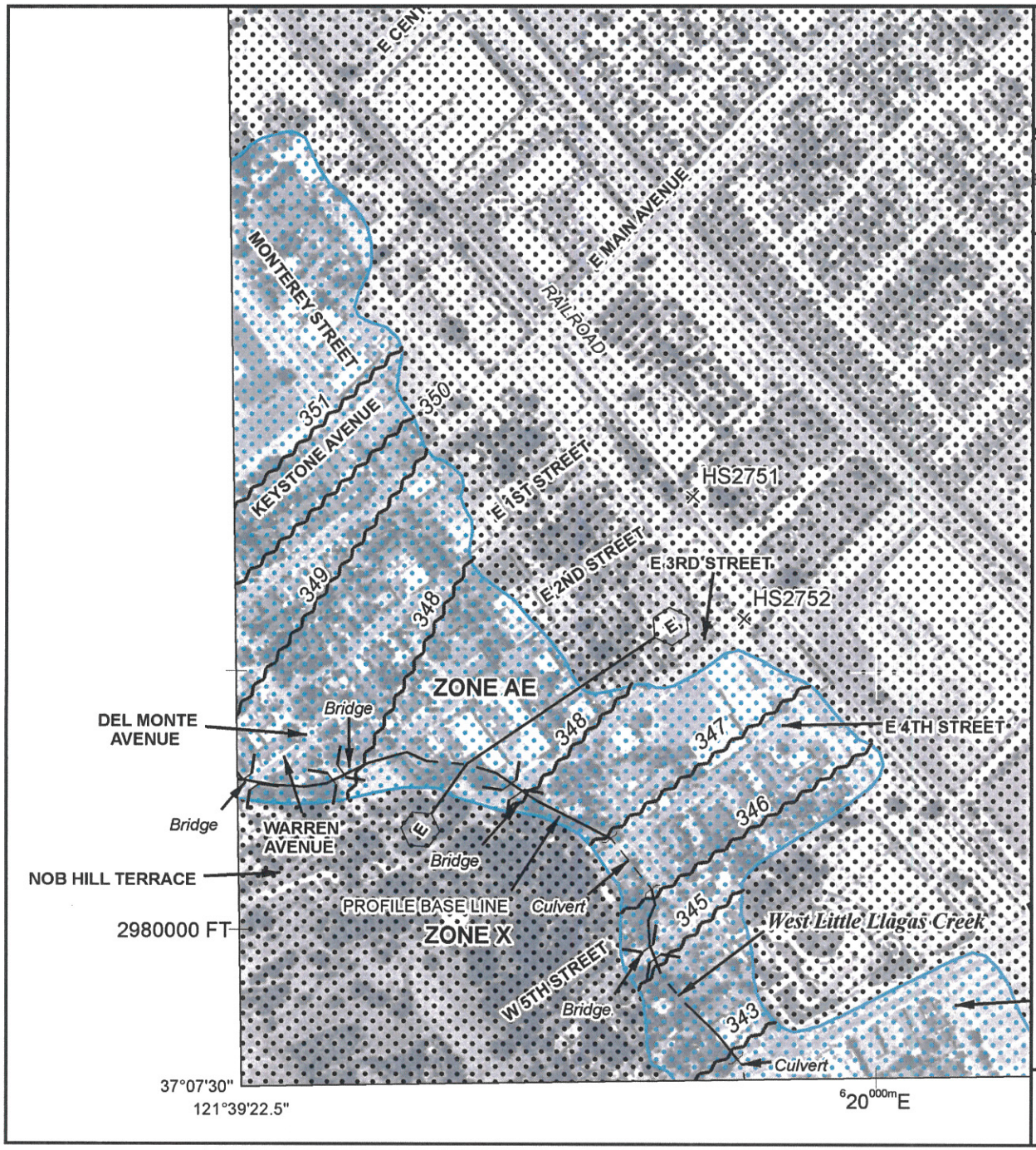
In summary, all the existing adjacent structures have floor elevations higher than the Base Flood Elevations ranging from 0.03 feet (gas station) to 1.82 feet (house). All but one house will

be impacted from the proposed development by increasing the upstream water surface elevation above the existing floor elevations.

The hybrid model (post Gera 50-75) provides development that MH engineering considers "insignificant" impact to upstream flooding, limiting the increase in water surface to +0.16 feet, but still staying below the effective modeled BFE.

Conclusion

The proposed Gera subdivision will require the three eastern most units to be removed from the proposed development inorder to bring the project impact on upstream flooding to an acceptable "insignificant" level. Driveways parking may be allowed in the 50' to 75' setback if developed on existing grade.



MAP SCALE 1" = 500'

50 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0444H

FIRM

FLOOD INSURANCE RATE MAP

SANTA CLARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 444 OF 830

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MORGAN HILL, CITY OF	060346	0444	H
SANTA CLARA COUNTY	060337	0444	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

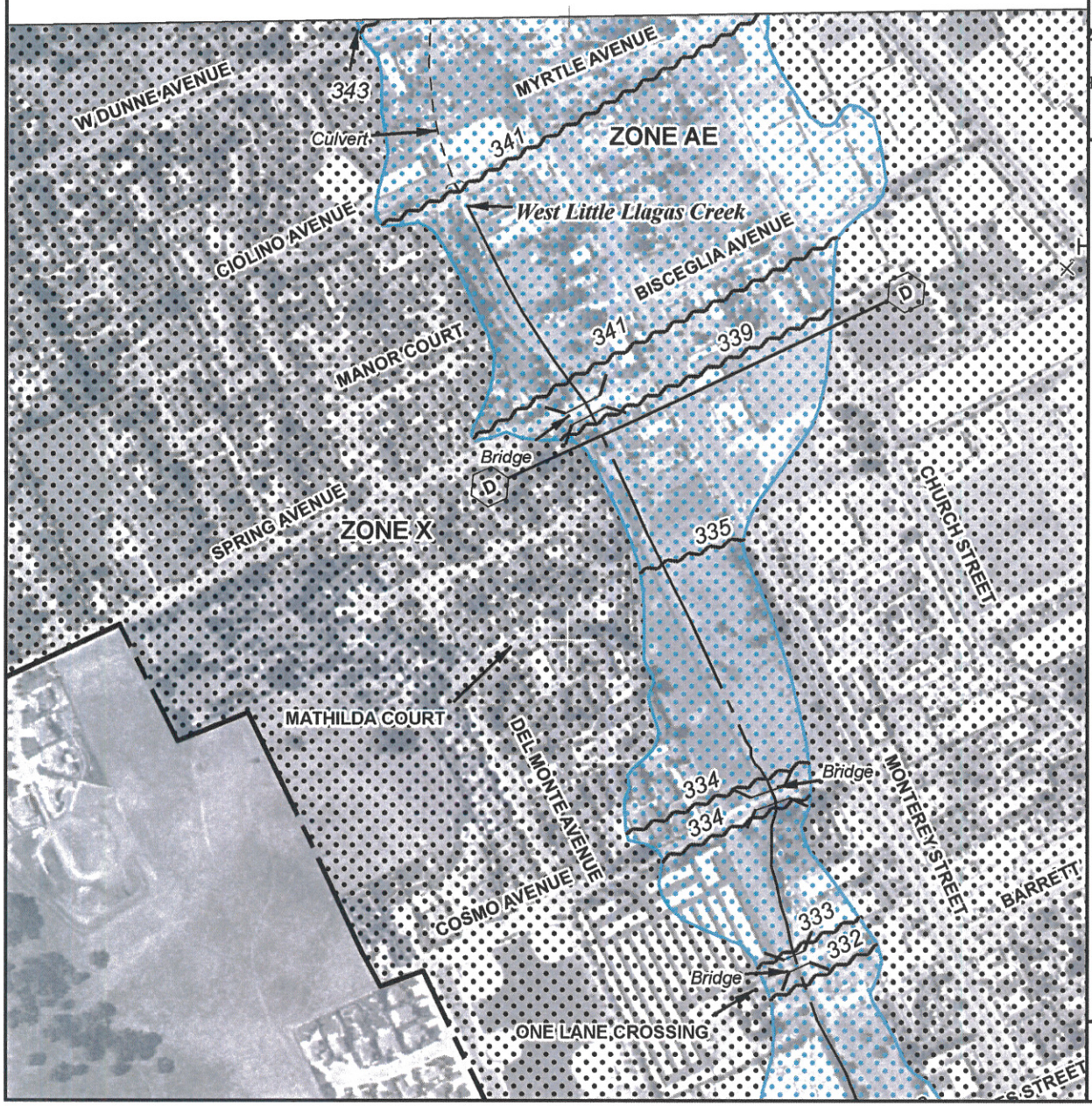
MAP NUMBER
06085C0444H

EFFECTIVE DATE
MAY 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Exhibit A



MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0607H

FIRM

FLOOD INSURANCE RATE MAP

SANTA CLARA COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 607 OF 830

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MORGAN HILL, CITY OF	060346	0607	H
SANTA CLARA COUNTY	060337	0607	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06085C0607H

EFFECTIVE DATE
MAY 18, 2009

Federal Emergency Management Agency

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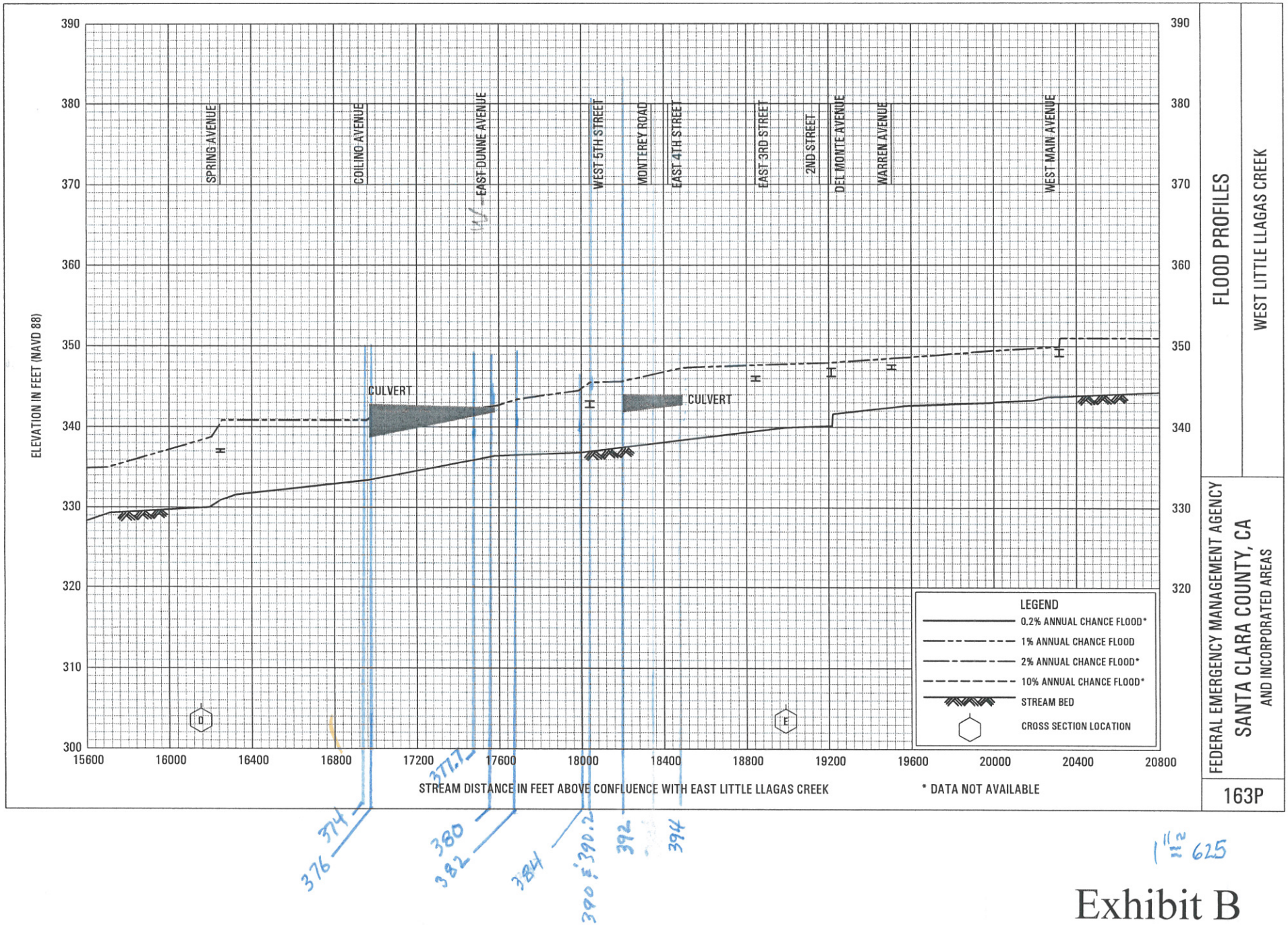


1" = 625

Exhibit B

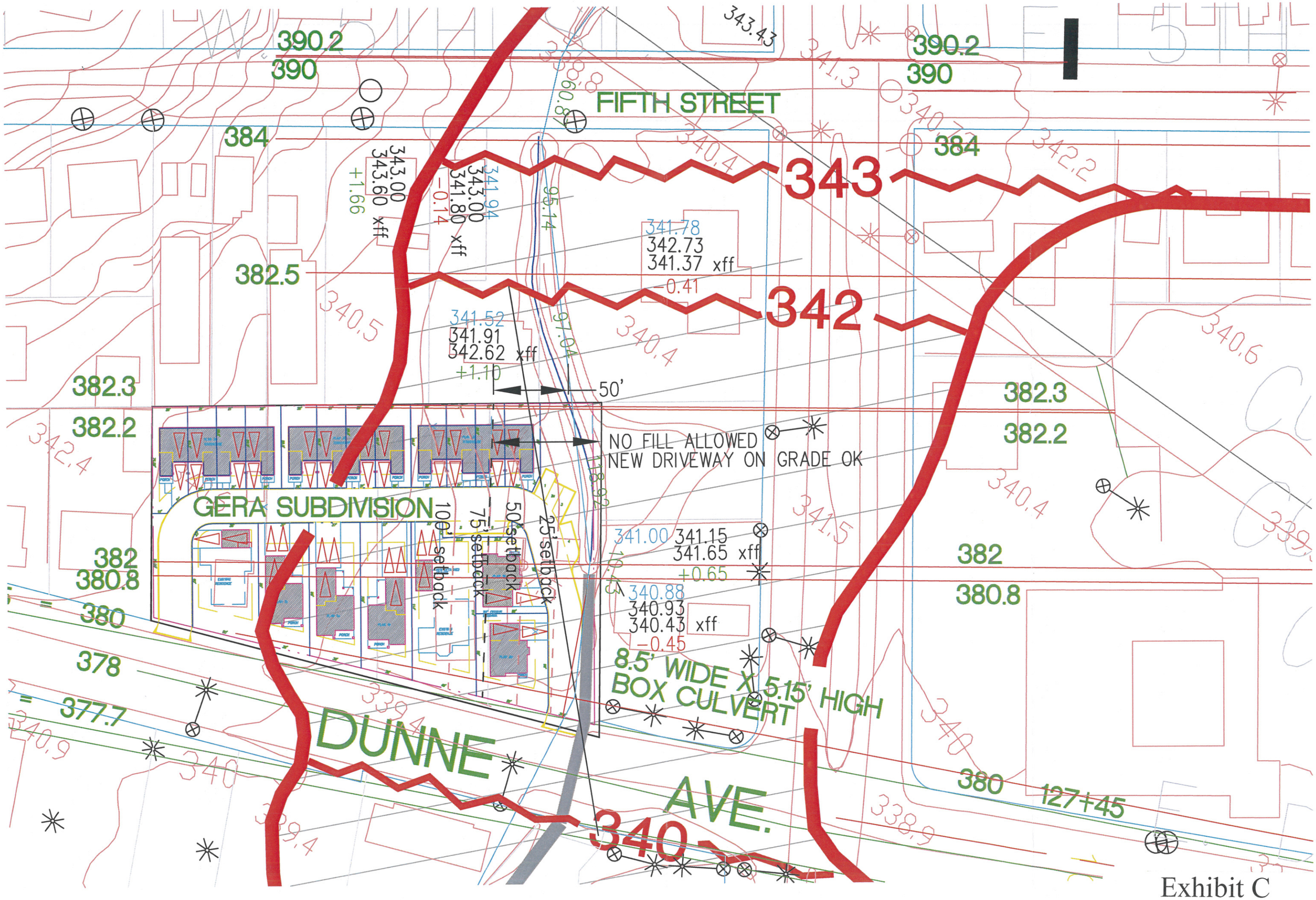

FIFTH STREET
DUNNE AVE.
GERA SUBDIVISION
343
342
340
390.2
390
384
382.5
382.3
382.2
382
380.8
380
378
377.7
127+45
343.00
343.60 xff
+1.66
343.00
341.80 xff
-0.14
341.94
95.14
341.78
342.73
341.37 xff
-0.41
341.52
341.91
342.62 xff
+1.10
97.04
50'
NO FILL ALLOWED
NEW DRIVEWAY ON GRADE OK
118.92
341.00
341.15
341.65 xff
+0.65
340.88
340.93
340.43 xff
-0.45
8.5' WIDE X 5.15' HIGH
BOX CULVERT
10'e' setback
75' setback
50' setback
25' setback

Exhibit C

RESULT SUMMARY TABLE

GERA DEVELOPMENT - W. DUNNE AVENUE

HEC - RAS River: RIVER-1 Reach: Reach 1 Profile: PF 1

Reach	River Sta	Profile	Plan	Length Chnl	Q Total	Min Ch El	W.S. Elev	BASE FLOOD ELEVATION (BFE)		EXISTING STRUCTURES
				(ft)	(cfs)	(ft)	(ft)	PROFILE (ft)	FIRM (ft)	
Reach-1	394	PF 1	EFFECTIVE	290	900	335.8	343.06	344.2	344.3	
Reach-1	394	PF 1	Corr Effect-div	290	900	335.8	343.07			
Reach-1	394	PF 1	Post Gera-25'	290	900	335.8	343.12			
Reach-1	394	PF 1	Post Gera-50'	290	900	335.8	343.02			
Reach-1	394	PF 1	Post Gera-75'	290	900	335.8	343.04			
Reach-1	394	PF 1	post Gera 50-75	290	900	335.8	343.03			
Reach-1	393			Culvert						
Reach-1	392	PF 1	EFFECTIVE	160	900	335.1	343.06	342.8	343.5	
Reach-1	392	PF 1	Corr Effect-div	160	900	335.1	343.12			
Reach-1	392	PF 1	Post Gera-25'	160	900	335.1	343.17			
Reach-1	392	PF 1	Post Gera-50'	160	900	335.1	343.05			
Reach-1	392	PF 1	Post Gera-75'	160	900	335.1	343.08			
Reach-1	392	PF 1	post Gera 50-75	160	900	335.1	343.07			
Reach-1	390.2	PF 1	EFFECTIVE	1	980	334.5	342.87	342.6	343.2	
Reach-1	390.2	PF 1	Corr Effect-div	1	980	334.5	342.95			
Reach-1	390.2	PF 1	Post Gera-25'	1	980	334.5	343.01			
Reach-1	390.2	PF 1	Post Gera-50'	1	980	334.5	342.86			
Reach-1	390.2	PF 1	Post Gera-75'	1	980	334.5	342.9			
Reach-1	390.2	PF 1	post Gera 50-75	1	980	334.5	342.89			
Reach-1	390	PF 1	EFFECTIVE	59	980	334.5	342.86	342.6	343.2	
Reach-1	390	PF 1	Corr Effect-div	59	980	334.5	342.94			
Reach-1	390	PF 1	Post Gera-25'	59	980	334.5	343			
Reach-1	390	PF 1	Post Gera-50'	59	980	334.5	342.85			
Reach-1	390	PF 1	Post Gera-75'	59	980	334.5	342.89			
Reach-1	390	PF 1	post Gera 50-75	59	980	334.5	342.88			
Reach-1	384	PF 1	EFFECTIVE	305	980	334.3	341.98	341.6	343	(2) Houses
Reach-1	384	PF 1	Corr Effect-div	95	980	334.3	341.73			XFF = 343.60 > BFE
Reach-1	384	PF 1	Post Gera-25'	95	980	334.3	342.67			XFF = 341.80
Reach-1	384	PF 1	Post Gera-50'	95	980	334.3	342.14			XFF> PROFILE +0.20'
Reach-1	384	PF 1	Post Gera-75'	95	980	334.3	341.85			XFF< Post Gera 25' -0.87'
Reach-1	384	PF 1	post Gera 50-75	95	980	334.3	341.89			XFF< Post Gera 50' -0.34'
										XFF< Post Gera 75' -0.05'

Exhibit D

Reach	River Sta	Profile	Plan	Length Chnl	Q Total	Min Ch El	W.S. Elev	BASE FLOOD ELEVATION (BFE)		EXISTING STRUCTURES
				(ft)	(cfs)	(ft)	(ft)	PROFILE (ft)	FIRM (ft)	
Reach-1	382.5	PF 1	Corr Effect-div	97	980	333.38	341.82	341.2	342.1	Citi Bank
Reach-1	382.5	PF 1	Post Gera-25'	97	980	333.38	342.65			XFF = 341.37 > BFE
Reach-1	382.5	PF 1	Post Gera-50'	97	980	333.38	342.17			XFF> PROFILE +0.17'
Reach-1	382.5	PF 1	Post Gera-75'	97	980	333.38	341.93			XFF< Post Gera 25' -1.28'
Reach-1	382.5	PF 1	post Gera 50-75	97	980	333.38	341.96			XFF< Post Gera 50' -0.80'
										XFF< Post Gera 75' -0.56'
Reach-1	382.3	PF 1	Corr Effect-div	119	980	333.88	341.79	340.8	341.6	EX. House
Reach-1	382.3	PF 1	Post Gera-25'	119	980	333.88	342.64			XFF = 342.62 > BFE
Reach-1	382.3	PF 1	Post Gera-50'	119	980	333.88	342.15			XFF > PROFILE +1.82'
Reach-1	382.3	PF 1	Post Gera-75'	119	980	333.88	341.91			XFF < Post Gera 25' -0.02'
Reach-1	382.3	PF 1	post Gera 50-75	119	980	333.88	341.93			XFF > Post Gera 50' +0.47'
										XFF > Post Gera 75' +0.71'
Reach-1	382.2	PF 1	Corr Effect-div	119	980	333.88	341.73	340.8	341.6	
Reach-1	382.2	PF 1	Post Gera-25'	119	980	333.88	342.52			
Reach-1	382.2	PF 1	Post Gera-50'	119	980	333.88	342.03			
Reach-1	382.2	PF 1	Post Gera-75'	119	980	333.88	341.8			
Reach-1	382.2	PF 1	post Gera 50-75	119	980	333.88	341.79			
Reach-1	382	PF 1	EFFECTIVE	95	1094	334.1	340.91	340.4	341	Country Realty
Reach-1	382	PF 1	Corr Effect-div	10	1094	334.1	341.68			XFF = 341.65 > BFE
Reach-1	382	PF 1	Post Gera-25'	10	1094	334.1	342.54			XFF > PROFILE +1.25'
Reach-1	382	PF 1	Post Gera-50'	10	1094	334.1	342			XFF < Post Gera 25' -0.89'
Reach-1	382	PF 1	Post Gera-75'	10	1094	334.1	341.74			XFF < Post Gera 50' -0.35'
Reach-1	382	PF 1	post Gera 50-75	10	1094	334.1	341.74			XFF < Post Gera 75' -0.09'
Reach-1	380.8	PF 1	Corr Effect-div	85	1094	332.35	340.34	340.4	340.9	Gas Station
Reach-1	380.8	PF 1	Post Gera-25'	85	1094	332.35	339.98			XFF = 340.43 > BFE
Reach-1	380.8	PF 1	Post Gera-50'	85	1094	332.35	339.95			XFF > PROFILE +0.03'
Reach-1	380.8	PF 1	Post Gera-75'	85	1094	332.35	340.03			XFF > Post Gera 25' +0.45'
Reach-1	380.8	PF 1	post Gera 50-75	85	1094	332.35	340.03			XFF > Post Gera 50' +0.48'
										XFF > Post Gera 75' +0.40'
Reach-1	380	PF 1	EFFECTIVE	629	1094	333.9	340.67	340.2	340.5	
Reach-1	380	PF 1	Corr Effect-div	57	377.82	338.9	340.5			
Reach-1	380	PF 1	Post Gera-25'	57	357.05	338.9	340.15			
Reach-1	380	PF 1	Post Gera-50'	57	251.21	338.9	340.16			
Reach-1	380	PF 1	Post Gera-75'	57	271.11	338.9	340.24			
Reach-1	380	PF 1	post Gera 50-75	57	271.11	338.9	340.24			

Reach	River Sta	Profile	Plan	Length Chnl	Q Total	Min Ch El	W.S. Elev	BASE FLOOD ELEVATION (BFE)		EXISTING STRUCTURES
				(ft)	(cfs)	(ft)	(ft)	PROFILE (ft)	FIRM (ft)	
Reach-1	378			Culvert						
Reach-1	378	PF 1	Corr Effect-div	34	377.82	338.4	340	339.7	340.2	
Reach-1	378	PF 1	Post Gera-25'	34	357.05	338.4	339.96			
Reach-1	378	PF 1	Post Gera-50'	34	251.21	338.4	339.77			
Reach-1	378	PF 1	Post Gera-75'	34	271.11	338.4	339.8			
Reach-1	378	PF 1	post Gera 50-75	34	271.11	338.4	339.8			
Reach-1	377.7	PF 1	Corr Effect-div	10	377.82	338.4	339.95	339.7	340	
Reach-1	377.7	PF 1	Post Gera-25'	10	357.05	338.4	339.94			
Reach-1	377.7	PF 1	Post Gera-50'	10	251.21	338.4	339.86			
Reach-1	377.7	PF 1	Post Gera-75'	10	271.11	338.4	339.88			
Reach-1	377.7	PF 1	post Gera 50-75	10	271.11	338.4	339.88			
Reach-1	377.6	PF 1	Corr Effect-div	195	377.82	338.4	339.95	339.7	340	
Reach-1	377.6	PF 1	Post Gera-25'	195	357.05	338.4	339.93			
Reach-1	377.6	PF 1	Post Gera-50'	195	251.21	338.4	339.86			
Reach-1	377.6	PF 1	Post Gera-75'	195	271.11	338.4	339.87			
Reach-1	377.6	PF 1	post Gera 50-75	195	271.11	338.4	339.87			
Reach-1	377.5	PF 1	Corr Effect-div	25	377.82	338	339.95	339.7	340	
Reach-1	377.5	PF 1	Post Gera-25'	25	357.05	338	339.94			
Reach-1	377.5	PF 1	Post Gera-50'	25	251.21	338	339.86			
Reach-1	377.5	PF 1	Post Gera-75'	25	271.11	338	339.88			
Reach-1	377.5	PF 1	post Gera 50-75	25	271.11	338	339.88			
Reach-1	377.4	PF 1	Corr Effect-div	183	377.82	338	339.95	339.7	340	
Reach-1	377.4	PF 1	Post Gera-25'	183	357.05	338	339.94			
Reach-1	377.4	PF 1	Post Gera-50'	183	251.21	338	339.86			
Reach-1	377.4	PF 1	Post Gera-75'	183	271.11	338	339.88			
Reach-1	377.4	PF 1	post Gera 50-75	183	271.11	338	339.88			
Reach-1	377.3	PF 1	Corr Effect-div	25	377.82	338	339.71	339.8	340	
Reach-1	377.3	PF 1	Post Gera-25'	25	357.05	338	339.72			
Reach-1	377.3	PF 1	Post Gera-50'	25	251.21	338	339.76			
Reach-1	377.3	PF 1	Post Gera-75'	25	271.11	338	339.76			
Reach-1	377.3	PF 1	post Gera 50-75	25	271.11	338	339.76			
Reach-1	377.2	PF 1	Corr Effect-div	38	377.82	338	339.8	339.8	340	
Reach-1	377.2	PF 1	Post Gera-25'	38	357.05	338	339.8			
Reach-1	377.2	PF 1	Post Gera-50'	38	251.21	338	339.8			
Reach-1	377.2	PF 1	Post Gera-75'	38	271.11	338	339.8			
Reach-1	377.2	PF 1	post Gera 50-75	38	271.11	338	339.8			

Reach	River Sta	Profile	Plan	Length Chnl	Q Total	Min Ch El	W.S. Elev	BASE FLOOD ELEVATION (BFE)		EXISTING STRUCTURES
				(ft)	(cfs)	(ft)	(ft)	PROFILE (ft)	FIRM (ft)	
Reach-1	377.1	PF 1	Corr Effect-div	62	377.82	338	339.8	339.8	340	
Reach-1	377.1	PF 1	Post Gera-25'	62	357.05	338	339.8			
Reach-1	377.1	PF 1	Post Gera-50'	62	251.21	338	339.8			
Reach-1	377.1	PF 1	Post Gera-75'	62	271.11	338	339.8			
Reach-1	377.1	PF 1	post Gera 50-75	62	271.11	338	339.8			
Reach-1	376	PF 1	EFFECTIVE	24.8	1094	330.8	339.79	338.3	339.7	
Reach-1	376	PF 1	Corr Effect-div	24.8	377.82	330.8	339.8			
Reach-1	376	PF 1	Post Gera-25'	24.8	357.05	330.8	339.8			
Reach-1	376	PF 1	Post Gera-50'	24.8	251.21	330.8	339.8			
Reach-1	376	PF 1	Post Gera-75'	24.8	271.11	330.8	339.8			
Reach-1	376	PF 1	post Gera 50-75	24.8	271.11	330.8	339.8			

ATTACHMENT 5

NOISE ASSESSMENT STUDY

FOR THE

PLANNED "OAK CREEK"

SINGLE-FAMILY SUBDIVISION

WEST DUNNE AVENUE

MORGAN HILL

BY

EDWARD L. PACK ASSOCIATES, INC.

MARCH 23, 2015

EDWARD L. PACK ASSOCIATES. INC.

1975 HAMILTON AVENUE
SUITE 26
SAN JOSE, CA 95125

Acoustical Consultants

TEL: 408-371-1195
FAX: 408-371-1196
www.packassociates.com

March 23, 2015
Project No. 47-014

Mr. Fritz Geier
Geier & Geier Consulting, Inc.
P.O. Box 5054
Berkeley, CA 94705

Subject: Noise Assessment Study for the Planned "Oak Creek" Single-Family Subdivision, West Dunne Avenue, Morgan Hill

Dear Mr. Geier:

This report presents the results of a noise assessment study for the planned "Oak Creek" single-family subdivision along West Dunne Avenue in Morgan Hill, as shown on the Site Development Plan, Ref. (a). The noise exposures at the site were evaluated against the standards of the City of Morgan Hill General Plan Noise Element, Ref. (b). An analysis of the on-site noise the measurements indicates that the noise environment is created primarily by traffic sources on West Dunne Avenue with a minor influence from Monterey Road traffic. Noise from the adjacent Truman KwikServ serve station is sometimes audible at the site, but the overall noise environment is not significantly impacted. The results of the analysis reveal that the exterior noise exposures at homes along West Dunne Avenue will exceed the limits of the City of Morgan Hill Noise Element standards. Mitigation measures will be required. The interior noise exposures will be within the limits of the standards. Noise mitigation measures for the interior living spaces will not be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively. Subsequent sections contain site, traffic and project descriptions, analyses and evaluations. Appendices A, B and C, attached, contain the list of references, descriptions of the standards, definitions of the terminology, descriptions of the instrumentation used for the field survey, and the on-site noise measurement data and calculation tables.

I. Summary of the Findings

A. Noise Standards and Criteria

City of Morgan Hill Noise Element

The noise exposures presented herein were evaluated against the standards of the City of Morgan Hill Noise Element, which utilizes the Day-Night Level (DNL) 24-hour descriptor to define acceptable noise exposures for various land uses. The standards specify a limit of 60 decibels (dB) DNL at single-family exterior living areas.

A limit of 45 dB DNL is specified for interior living spaces. In addition, the Noise Element specifies that when the exterior noise exposure is greater than 60 dB DNL, the *maximum instantaneous* noise levels shall not exceed 50 dBA in bedrooms and 55 dBA in other living spaces. The exterior noise exposures at the planned building facades along West Dunne Avenue are higher than 60 dB DNL under existing and future conditions. Thus, the interior maximum noise limits are applicable.

A. Exterior Noise Exposures

The noise exposures shown below are without the application of mitigation measures and represent the noise environment for project conditions.

- The existing exterior noise exposure at the most impacted planned building setback along West Dunne Avenue, 53 ft. from the centerline of the road, is 61 dB DNL. Under future traffic conditions, the noise exposure is expected to increase to 62 dB DNL. As the exterior noise exposures exceed 60 dB DNL, the interior maximum noise limits are applicable to the homes along West Dunne Avenue.

- The existing noise exposure in the most impacted rear yard is 61 dB DNL. Under future traffic conditions, the noise exposure is expected to increase to 62 dB DNL. Only the lot at the southeasterly corner of the site has a portion of the rear yard that is exposed to noise is excess of 60 dB DNL. Thus, the noise exposures will be up to 2 dB in excess of the 60 dB DNL limit of the City of Morgan Hill Noise Element standards.

- All other exterior living areas of the remaining homes of the project have noise exposures in compliance with the 60 dB DNL standard.

- The existing exterior noise exposures at the most impacted planned building setback and exterior living areas from Monterey Road and Truman KwikServ, 54 ft. from the easterly property line, are 55 dB DNL at the first floor elevations and 58 dB DNL at the upper floor elevations. Under future conditions, the noise exposures are expected to increase to 56 dB DNL at the first floor elevations and up to 59 dB DNL at the second floor elevations. Thus, the noise exposures are within the 60 dB DNL limit of the City of Morgan Hill Noise Element standards. As the exterior noise exposure is no higher than 60 dB DNL, the interior maximum noise limits are not applicable.

The future 60 dB DNL noise contour will be 72 ft. from the centerline of West Dunne Avenue.

- The existing maximum noise levels at the most impacted homes along West Dune Avenue range from 58.3 to 70.8 dBA.

The exterior noise exposures exceed the limits of the standards at the lot at the southeasterly corner of the site and mitigation measures will be required. The recommended measures are described in Section II of this report.

B. <u>Interior Noise Exposures and Noise Levels</u>

- The interior noise exposures in the most impacted living spaces closest to West Dunne Avenue are 36 and 37 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards.

- The interior noise exposures at the most impacted living spaces closest to Monterey Road and Truman KwikServ are 30 and 31 dB DNL at the first floor elevations under existing and future traffic conditions, respectively. At the upper floor elevations, the noise exposures will be up to 33 and 34 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards.

- The interior maximum noise levels in the most impacted living spaces along West Dunne Avenue will range from 33.3 to 45.8 dBA. Thus, the interior maximum noise levels will be within the 50 dBA limit for bedrooms and the 55 dBA limit for other living spaces. As the maximum noise levels are produced by a singular noise source, increases in future traffic volume do not affect the maximum noise levels.

The interior noise exposures and noise levels will be within the limits of 45 dB DNL and 50/55 dBA maximum limits of the standards of the City of Morgan Hill Noise Element. Noise mitigation measures for the project interiors will not be required.

C. Construction Noise Impacts

Short-term construction impacts may be created during construction of the development. Construction equipment generates noise levels in the range of 75 to 95 dBA at a 30 ft. distance from the source. Because of the close proximity of the site to the nearest residences, there is potential for construction noise to impact the residences. Noise from construction equipment dissipates at the rate of 6 dB per doubling of the distance from the source to the receiver. At receptor locations approximately 20 ft. from the site, construction noise will be in the range of 79 to 99 dBA, which would result in noticeable to loud noise conditions. Since construction is carried out in several reasonably discrete phases, each has its own mix of equipment and consequently, its own noise characteristics. Generally, the site preparation requires the use of heavy equipment such as bulldozers, loaders, scrapers, and diesel trucks. Upon completion of the project, the area's sound levels will reduce essentially to the predicted traffic noise exposures analyzed in this study.

Over the course of a construction day, the noise exposure is expected to be up to 70 dB DNL at the existing residences adjacent to the north and west. Construction noise is likely to be audible in some of the offices adjacent to the east.

As construction noise is predicted to be significant to nearby residences, general mitigation measures are recommended to minimize the potential for annoyance. The recommended measures are described in Section II.

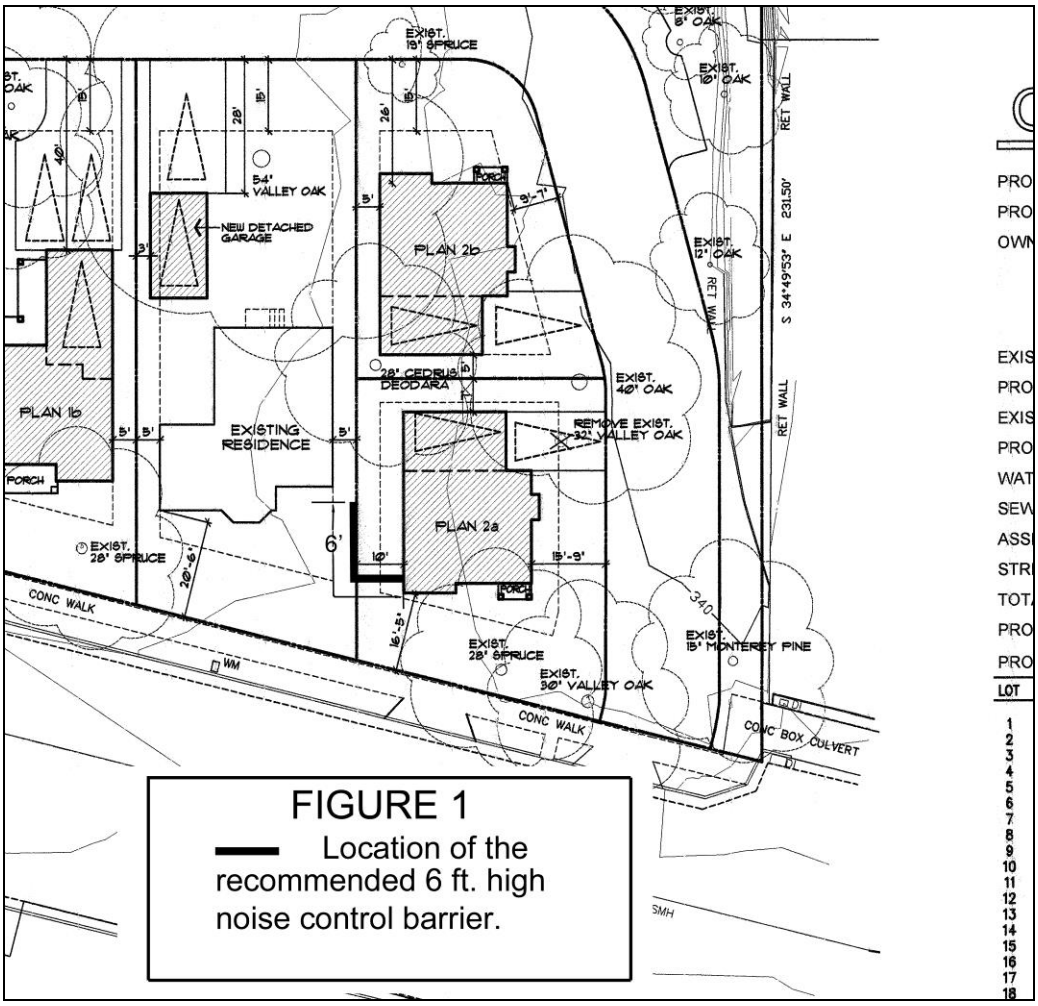
II. Recommendations

To achieve compliance with the 60 dB DNL limit of the City of Morgan Hill Noise Element standards for the noise impacted rear yard along West Dunne Avenue, the following noise control barrier will be required.

- Construct a 6 ft. high acoustically-effective barrier at the rear yard of the lot at the southeasterly corner of the site to shield the area of the rear yard that is within 72 ft. of the centerline of West Dunne Avenue. The barrier height is in reference to the nearest building pad elevation. Note that the precise location of the rear yard for this lot is not shown on the plans. Therefore, the recommended barrier location is somewhat arbitrary.

Please see Figure 1 for the location of the recommended noise control barrier.

To achieve an acoustically-effective barrier it must be constructed air-tight, i.e., without cracks, gaps or other openings, and must provide for long term durability. Barriers can be constructed of masonry, wood, concrete, stucco, earth berm or a combination thereof and must have a minimum surface weight of 2.5 lbs./sq. ft. If wood fencing is used, homogeneous sheet materials are preferable to conventional wood fencing as the latter has a tendency to warp and form openings with age. However, high quality air-tight tongue-and-groove, board and batten or shiplap construction can be used. All connections with posts, pilasters or building shells must be sealed air-tight. No openings are permitted between the upper barrier components and the ground. Gates may be incorporated into the barriers, however, they must be of the same weight material as the main barrier and must seal tight when closed. The gap at the bottom of the gate shall be less than 1”.



A. <u>Construction Noise Mitigation</u>

Mitigation of the construction phase noise at the site can be accomplished by using quiet or "new technology" equipment. The greatest potential for noise abatement of current equipment should be the quieting of exhaust noises by use of improved mufflers. It is recommended that all internal combustion engines used at the project site be equipped with a type of muffler recommended by the vehicle manufacturer. In addition, all equipment should be in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive-train and other components. Construction noise can also be mitigated by the following:

- Scheduling noisy operations for the daytime hours of 7:00 AM to 8:00 PM Monday through Friday and from 9:00 AM to 6:00 PM Saturday, for compliance with the City of Morgan Hill Zoning Ordinance.

- All diesel powered equipment should be located more than 200 ft. from any residence if the equipment is to operate for more than several hours per day.

- Dirt berms and stockpiling materials can also help reduce noise to sensitive receptor locations.

As noise reduction benefit can also be achieved by appropriate selection of equipment utilized for various operations, subject to equipment availability and cost considerations, the following recommendations for minimizing impacts on the surrounding area are offered:

Earth Removal: Use scrapers as much as possible for earth removal, rather than the noisier loaders and hauling trucks.

Backfilling: Use a backhoe for backfilling, as it is less costly and quieter than either dozers or loaders.

Ground Preparation: Use a motor grader rather than a bulldozer for final grading.

Building Construction: Powers saws should be shielded or enclosed where practical to decrease noise emissions. Nail guns should be used where possible as they are less noisy than manual hammering.

Construction Phasing: Construct buildings or other significant structures at the site perimeter to help shield existing sensitive receptors from noise generated on the site.

III. Site, Traffic and Project Descriptions

The planned project site is a relatively flat parcel located along West Dunne Avenue between Monterey Road and Del Monte Avenue in Morgan Hill. The site currently contains two single-family homes and a barn and is approximately at-grade with West Dunne Avenue. The site is approximately 1-3 ft. below the grade of Monterey Road and the service bays of the Truman KwikServ. Surrounding land uses include single-family residential adjacent to the west and north, the Truman KwikServ station and a commercial/office building adjacent to the east. A two-story apartment building and retail uses are across West Dunne Avenue to the south.

The on-site noise environment is controlled primarily by traffic sources on West Dunne Avenue and Monterey Road. West Dunne Avenue carries an existing Average Daily Traffic (ADT) volume of 8,710 vehicles. Monterey Road carries an ADT of 17,780 vehicles, Ref. (c).

The Truman KwikServ station is a gas station with full service auto repair in three service bays that open to the south of the facility. The auto repair is open from 8:30 AM to 5:30 AM Monday through Saturday and is closed Sunday. The gas station cashier is open daily from 6:00 AM to 10:00 PM, Ref. (d).

The planned project includes the retention of the two existing homes on the site and construction of 17 single-family homes. Five of the new homes are detached and 12 homes are attached townhouses in three buildings. Ingress and egress to the project will be by way of a project loop street off of West Dunne Avenue. The Site Development Plan is shown on Figure 2 on page 10.

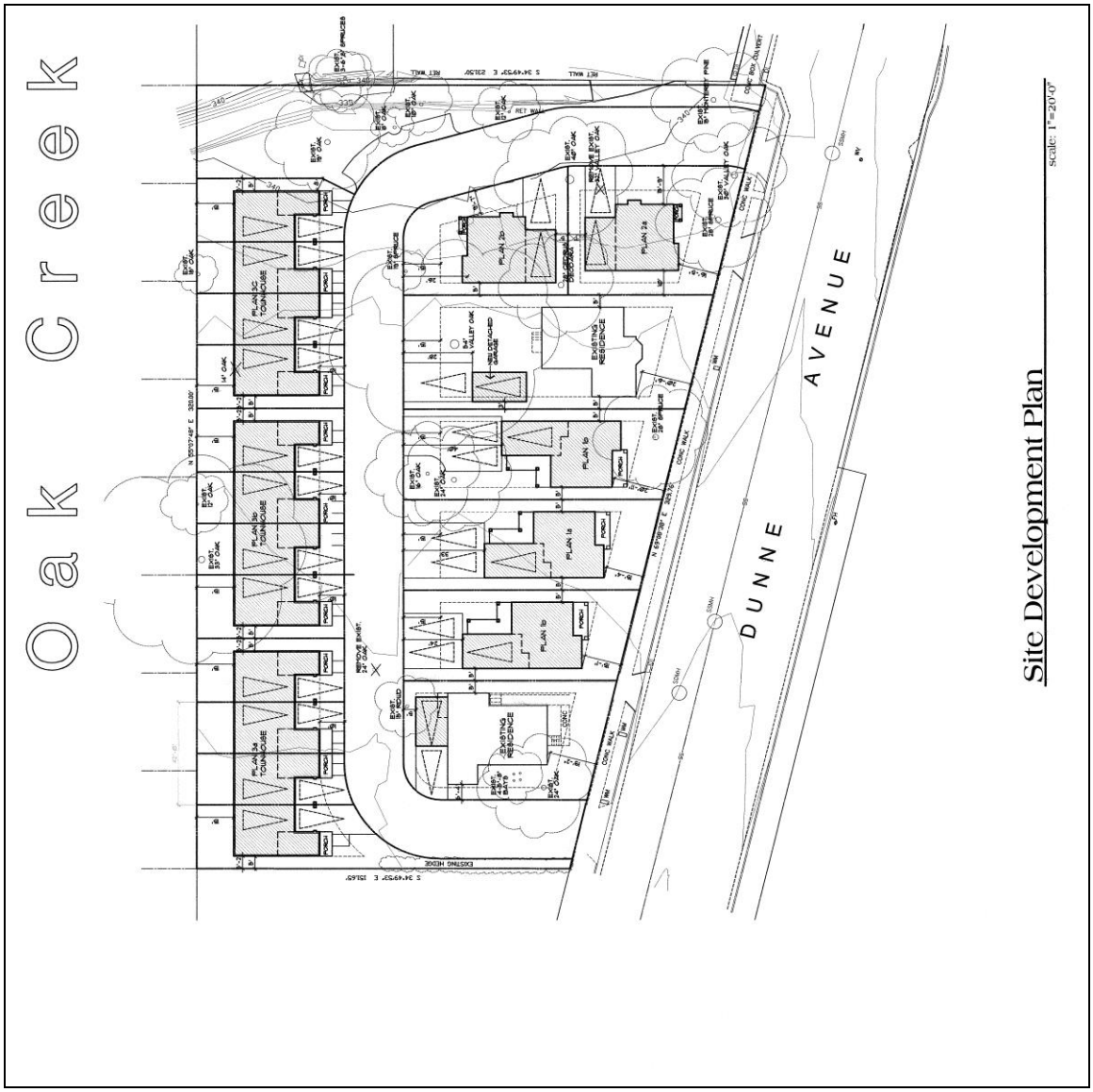


FIGURE 2 – Site Development Plan

IV. Analysis of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment at the site, continuous recordings of the sound levels were made at two locations. Location 1 was 53 ft. from the centerline of West Dunne Avenue corresponding to the planned minimum building setback from the roadway. Location 2 was 54 ft. from the east property line near the end of the Truman KwikServ corresponding to the planned minimum setback of homes closest to Truman KwikServ and Monterey Road. The measurements were made on February 25-26, 2015. The noise measurements were made using Larson-Davis LDL 812 Precision Integrating Sound Level Meters. The meters yield, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors included the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also measured were the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurement locations are shown on Figure 3 on page 10.

The measurements were made for a total period of 24 hours at each location and included recordings of the noise levels during representative hours of the daytime and nighttime periods of the DNL index. The results of the measurements are shown in data tables in Appendix C.

As shown in the tables, the L_{eq}'s at measurement Location 1, 53 ft. from the centerline of West Dunne Avenue, ranged from 56.5 to 63.4 dBA during the daytime and from 45.4 to 58.6 dBA at night.

At measurement Location 2, 54 ft. from the easterly property line and 215 ft. from the centerline of Monterey Road, the L_{eq}'s ranged from 50.3 to 55.5 dBA during the daytime and from 41.2 to 53.1 dBA at night.

The maximum noise levels at measurement Location 1 ranged from 58.3 to 70.8 dBA.

FIGURE 3 – Noise Measurement Locations

Traffic, stationary equipment and loading dock noise dissipate at the rate of 3 to 6 dB for each doubling of the distance from the source to the receiver. Therefore, other locations on the site at greater distances from the roadways or Truman KwikServ will have lower noise levels.

B. Future Noise Levels

The future (2030) traffic volume data for West Dunne Avenue were reported in the City of Morgan Hill Circulation Element. Traffic volumes for the section of West Dunne Avenue along the site were not provided in the Circulation Element. Therefore, reference was made to the section of West Dunne Avenue from Peak Avenue to Viewcrest Lane. The traffic volumes on this leg of West Dunne Avenue are shown to increase from the existing (2009) ADT of 6,580 to 8,600 ADT. This increase in traffic volume is 31%. A 31% increase in traffic volume yields a 1 decibel increase in the traffic noise levels. Applying this increase to the reported traffic volume on West Dune Avenue along the site of 8,710 ADT, the future traffic volume is expected to be 11,384 vehicles ADT. The traffic volume on Monterey Road is reported to increase from the existing 17,780 vehicles ADT to 25,100 vehicles ADT. This increase in traffic volume yields a 1 decibel increase in the Monterey Road traffic noise levels.

V. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

The DNL's for the survey location was calculated by decibel averaging of the L_{eq}'s as they apply to the daily time periods of the DNL index. The DNL is a 24-hour noise descriptor that uses the measured L_{eq} values to calculate a 24-hour time-weighted average noise exposure. The formula used to calculate the DNL is described in Appendix B. Adjustments were applied to the measured noise levels to account for the various setback distances from the measurement location using methods established by the Highway Research Board, Ref. (e).

The results of the calculations reveal that the noise exposure at measurement Location 1 corresponding to the planned minimum setback of the homes along the roadway, 53 ft. from the centerline of West Dunne Avenue, was calculated to be 61 dB DNL. Under future traffic conditions, the noise exposure is expected to increase to 62 dB DNL.

The noise exposures in the rear yard of the planned lot at the southeasterly corner of the site will be up to 2 dB in excess of the City of Morgan Hill Noise Element standards as the rear yard may be at or near the building setback along the westerly side of the lot. The rear yards of the remaining homes along West Dunne will be on the north sides of the homes and will be outside of the future 60 dB DNL noise contour.

At measurement Location 2, 54 ft. from the easterly property line closest to the Truman KwikServ facility and 215 ft. from the centerline of Monterey Road, the existing noise exposure was calculated to be 55 dB DNL. Under future traffic conditions, the noise exposure is expected to increase to up to 56 dB DNL. Thus, the noise exposures in the rear yards of the homes most impacted by the Truman KwikServ facility and Monterey Road are within the 60 dB DNL limit of the City of Morgan Hill Noise Element standards.

Because of the topographic difference between the rear of the site and Monterey Road, the measurement location was partially shielded from traffic. At the upper floors of the project along the easterly side and northeasterly corner, the noise exposures are 3 dB higher that at the ground floor. The upper floor noise exposures are 58 and 59 dB DNL under existing and future traffic conditions, respectively.

The exterior noise exposures at the rear yard of the home at the southeasterly corner of the site are up to 2 dB in excess of the 60 dB DNL limit of the City of Morgan Hill Noise Element standard. Noise mitigation measures for this rear yard will be required. The recommended measures are described in Section II of this report.

C. Interior Noise Exposures

To determine the interior noise exposures in project living spaces, a 25 dB reduction was applied to the exterior noise exposures at the building setbacks to represent the attenuation provided by a typical building shell under a closed window condition. The closed window condition is used in this study as full-time ventilation will be provided that will allow the residents to keep their windows closed for noise control at all times without further specification. This condition also assumes the installation of standard dual-pane thermal insulating windows.

The interior noise exposures in the living spaces closest to West Dunne Avenue will be 36 and 37 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards.

The interior noise exposures in the ground floor living spaces closest to Truman KwikServ and Monterey Road will be 30 and 31 dB DNL under existing and future traffic conditions, respectively. The interior noise exposures in the upper floors of homes closest to these noise sources will be 33 and 34 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be within the 45 dB DNL limit of the City of Morgan Hill Noise Element standards.

The interior maximum noise levels in the most impacted living spaces closest to West Dunne Avenue and that are within the 60 dB DNL noise contour will range from 33.3 to 45.8 dBA. Thus, the maximum interior noise levels will be within the 50 dBA limit for bedrooms and with the 55 dBA limit for other living spaces.

As shown by the above evaluations, the interior noise exposures and noise levels will be within the limits of the standards. Noise mitigation measures for the interior living spaces will not be required.

The above report presents a noise assessment study for the planned "Oak Creek" single-family development along West Dunne Avenue in Morgan Hill. The study findings for present conditions are based on field measurements and other data and are correct to the best of our knowledge. Future noise exposures were based on information provided by the City of Morgan Hill. Significant deviations in the future traffic volumes, nearby commercial activity or changes in motor vehicle technology, speed limits, noise regulations, or other future changes beyond our control may produce long-range noise results different from our estimates.

If you need any additional information or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

Attachment: Appendices A, B and C

APPENDIX A

References:

(a) Conceptual Grading Plan, 35-59 West Dunne Avenue, by Giuliani & Kull, Inc., May 16, 2013

(b) City of Morgan Hill General Plan, Health and Safety Element, "Noise", July 2001

(c) City of Morgan Hill General Plan Circulation Element Network and Policy Revisions Traffic Impact Analysis, by Fehr & Peers Transportation Consultants, May 2009

(d) Information on the Truman KwikServ Operations Provided by Truman KwikServ by Telephone with Edward L. Pack Associates, Inc., March 23, 2015

(e) Highway Research Board, "Highway Noise - A Design Guide for Highway Engineers", Report 117, 1971

APPENDIX B

Noise Standards, Terminology and Instrumentation

1. Noise Standards

A. City of Morgan Hill Noise Element Standards

The Public Health and Safety (Noise) Element of the City of Morgan Hill General Plan, adopted July, 2001, contains land use compatibility standards for various land uses. a section on noise.

The maximum exterior noise level of 60 dBA L_{dn} shall be applied in residential areas where outdoor use is a major consideration (e.g.,backyards in single family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing an L_{dn} of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an L_{dn} of 65 dBA maybe permitted.

Indoor noise levels should not exceed an L_{dn} of 45 dBA in new residential housing units.

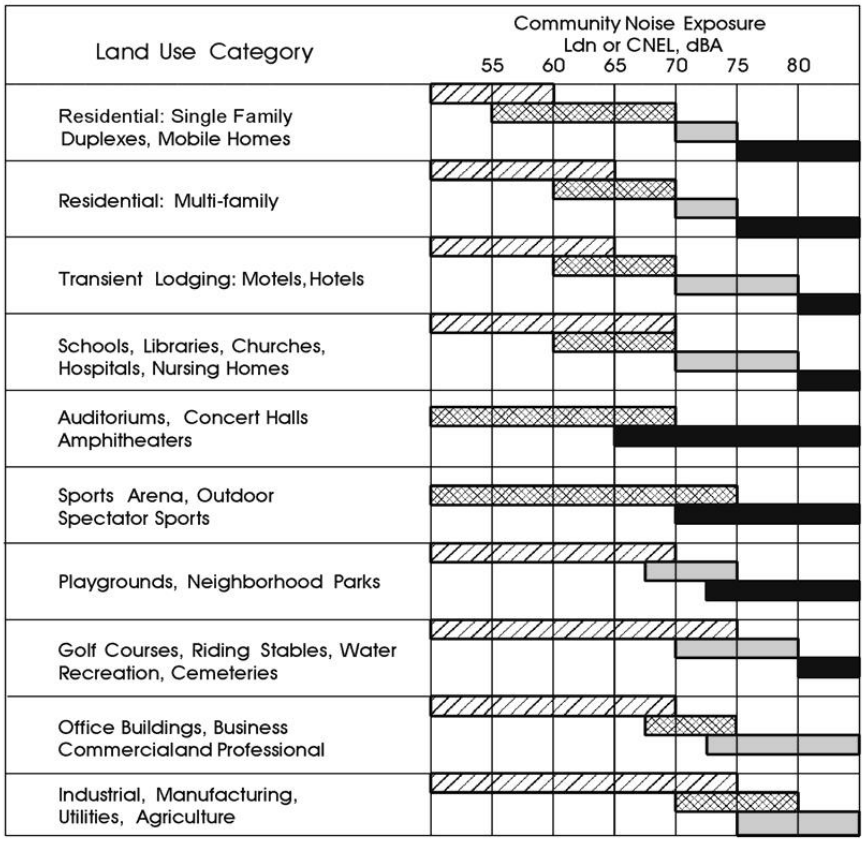
• *Noise levels in new residential development exposed to an exterior L_{dn}*

60 dBA or greater should be limited to a maximum instantaneous noise level(e.g., trucks on busy streets, train warning whistles) in bedrooms of 50dBA. Maximum instantaneous noise levels in all other habitable rooms should not exceed 55 dBA.

The maximum outdoor noise level for new residences near the railroad shall be 70 dBA L_{dn}, recognizing that train noise is characterized by relatively few loud events.

The Noise Element references the Land Use Compatibility chart from the State of California Guidelines for the Preparation of a Noise Element. The "Normally Acceptable" standards for the land use categories are as follows:

Table 9. Acceptable Noise Levels



INTERPRETATION

NORMALLY ACCEPTABLE

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

CONDITIONALLY ACCEPTABLE

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

NORMALLY UNACCEPTABLE

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

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

Source: Office of Planning and Research, State of California General Plan Guidelines, Appendix A: Guidelines for the Preparation and Content of the Noise Element of the General Plan, 1990.

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Sound Level Meters. Some of the statistical levels used to describe community noise are defined as follows:

L_1 - A noise level exceeded for 1% of the time.

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing the "mean" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)

L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)

24 indicates the 24-hour period

& denotes decibel addition.

C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the sound analyzer listed below. The instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters were provided by microphones extended to a height of 5 ft. above the ground. The "A" weighting network and the "Fast" response setting of the meters were used in conformance with the applicable standards. The Larson-Davis meters were factory modified to conform to the Type 1 performance standards of ANSI S1.4. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer

4. Building Shell Controls

The following additional precautionary measures are required to assure the greatest potential for exterior-to-interior noise attenuation by the recommended mitigation measures. These measures apply at those units where closed windows are required.

- Unshielded entry doors having a direct or side orientation toward the primary noise source must be 1-5/8" or 1-3/4" thick, insulated metal or solid-core wood construction with effective weather seals around the full perimeter.

- If any penetrations in the building shell are required for vents, piping, conduit, etc., sound leakage around these penetrations can be controlled by sealing all cracks and clearance spaces with a non-hardening caulking compound.

- Ventilation devices shall not compromise the acoustical integrity of the building shell.

APPENDIX C

On-Site Noise Measurement Data and Calculation Tables

DNL CALCULATIONS

CLIENT: GEIER & GEIER
FILE: 47-014
PROJECT: W.DUNNE SUBDIVISION
DATE: 2/25-26/2015
SOURCE: W. DUNNE AVE., MONTEREY RD., TRUMAN KWIK SERV

LOCATION 1 W. Dunne Ave.
Dist. To Source 53 ft.

TIME		10^Leq/10		
7:00 AM	61.2	1318256.7		
8:00 AM	60.2	1047128.5		
9:00 AM	59.0	794328.2		
10:00 AM	58.1	645654.2		
11:00 AM	59.1	812830.5		
12:00 PM	59.0	794328.2		
1:00 PM	59.8	954992.6		
2:00 PM	59.4	870963.6		
3:00 PM	63.4	2187761.6		
4:00 PM	61.0	1258925.4		
5:00 PM	60.2	1047128.5		
6:00 PM	59.8	954992.6		
7:00 PM	60.2	1047128.5		
8:00 PM	57.0	501187.2		
9:00 PM	56.5	446683.6	SUM=	14682290
10:00 PM	53.4	218776.2	Ld=	71.7
11:00 PM	50.2	104712.9		
12:00 AM	48.7	74131.0		
1:00 AM	46.5	44668.4		
2:00 AM	50.1	102329.3		
3:00 AM	45.4	34673.7		
4:00 AM	50.4	109647.8		
5:00 AM	54.3	269153.5		
6:00 AM	58.6	724436.0	SUM=	1682529
			Ln=	62.3

Daytime Level= 71.7
Nighttime Level= 72.3
DNL= 61
24-Hour Leq= 58.3

LOCATION 2 Monterey Rd, Truman Kwik Serv
Dist. To Source 215 ft.

TIME	Leq	10^Leq/10		
7:00 AM	53.2	208929.6		
8:00 AM	54.0	251188.6		
9:00 AM	52.0	158489.3		
10:00 AM	52.2	165958.7		
11:00 AM	53.3	213796.2		
12:00 PM	52.3	169824.4		
1:00 PM	51.8	151356.1		
2:00 PM	53.0	199526.2		
3:00 PM	55.5	354813.4		
4:00 PM	54.2	263026.8		
5:00 PM	53.9	245470.9		
6:00 PM	52.9	194984.5		
7:00 PM	53.0	199526.2		
8:00 PM	50.3	107151.9		
9:00 PM	51.3	134896.3	SUM=	3018939
10:00 PM	46.4	43651.6	Ld=	64.8
11:00 PM	43.4	21877.6		
12:00 AM	42.8	19054.6		
1:00 AM	42.1	16218.1		
2:00 AM	42.5	17782.8		
3:00 AM	41.2	13182.6		
4:00 AM	45.2	33113.1		
5:00 AM	48.3	67608.3		
6:00 AM	53.1	204173.8	SUM=	436662
			Ln=	56.4

Daytime Level= 64.8
Nighttime Level= 66.4
DNL= 55
24-Hour Leq= 51.6