Appendix A – Notice of Preparation and Comments

Notice of Preparation for an Environmental Impact Report and Scoping Meeting

To:	**State Clearinghouse, Agencies, and Interested Parties**
Project Title:	**Spring Lake Village East Grove**
Lead Agency:	**City of Santa Rosa** **Planning and Economic Development Department** **100 Santa Rosa Avenue, Room 3** **Santa Rosa, CA 95404**
Contact:	**Patrick Streeter, Senior Planner** **Tel: 707-543-4323** **Fax: 707-543-3269** **E: pstreeter@srcity.org**
Applicant:	**Episcopal Senior Communities**
Scoping Period:	**May 11 to June 9, 2016**
Scoping Meeting:	**6 PM Monday, May 23, 2016, Douglas Whited Elementary School Cafeteria, 4995 Sonoma Highway, Santa Rosa, CA**

The City of Santa Rosa Planning and Economic Development Department has received an application from Episcopal Senior Communities to develop an expansion of the existing Spring Lake Village Continuing Care Retirement Community. The City of Santa Rosa will prepare an Environmental Impact Report (EIR) for the project to satisfy the requirements of the California Environmental Quality Act (CEQA), and will serve as the lead agency for CEQA compliance.

In accordance with the State CEQA Guidelines, the City of Santa Rosa has prepared this Notice of Preparation (NOP) to inform agencies and interested parties that an EIR will be prepared for the project. The purpose of an NOP is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed.

Providing Comments and Public Scoping Meeting

Agencies and interested parties may provide the City with written comments on the scope and content of the EIR for the project. Because of the time limits mandated by State law, comments should be provided within 30 calendar days of receiving this notice. Please send all comments to Patrick Streeter at the address shown above.

A public scoping meeting will be held by the City to further inform agencies and interested parties about the proposed project. Oral comments, as well as written comments, will be received at the public scoping meeting. The meeting time and location are indicated above.

Project Location and Surrounding Uses

The project would be constructed on a 5.83-acre parcel owned by Episcopal Senior Communities in east Santa Rosa (see Figure 1). The project site is bordered to the north by Highway 12 and single-family residences; to the south by single-family residences and Melita Road, Montgomery Drive, and Annadel State Park; to the east by Los Alamos Road and multi-family residences; and to the west by single-family residences and Hope Chapel Church. The project site is located approximately 800 feet east of the existing Spring Lake Village campus, which is located at 5555 Montgomery Drive. The project also includes off-site pedestrian improvements along Montgomery Drive, Melita Road, and Los Alamos Road, and off-site storm drain facilities within and adjacent to Melita Road.

Project Description

The proposed project would include development of 24 independent living units, which at full occupancy would support up to 48 residents. Living units would be provided in a mix of six single-story duplex cottages and a two-story residential building referred to as the Villa (see Figure 2).

The project also would include a single-story community building for residents and their guests, which would provide dining facilities, activity/common rooms, and administrative office space. The project includes an outdoor pool and patio, and outdoor common areas. Residents of the proposed project would have access to community facilities on the existing Spring Lake Village campus, and vice versa. The project site would be further developed with supporting parking areas, paved walking paths, landscaping, drainage features, lighting, fencing, and retaining walls.

Vehicle access to the project site would be provided via a driveway off Los Alamos Road. The portion of Los Alamos Road that is adjacent to the project site would be reconfigured to provide a Class II bicycle lane consistent with the City of Santa Rosa Bicycle and Pedestrian Master Plan. A publicly accessible off-street walking path would be constructed along Los Alamos Road adjacent to the project site.

Off-site pedestrian facility improvements would be constructed to facilitate pedestrian walkability between the project site and the existing Spring Lake Village campus on Montgomery Drive. An approximately 600-foot segment of Montgomery Drive would be reconfigured to provide space for a five-foot wide pedestrian pathway adjacent to the westbound travel lane on the north side of Montgomery Drive. Vehicle travel lanes in the reconfigured stretch of Montgomery Drive would be narrowed and the roadway would be restriped to provide Class II bicycle lanes on both sides of the roadway. New sidewalk, pedestrian pathways, and a crosswalk would also be constructed along a portion of Melita Road near the project.

The project would tie into existing off-site utility infrastructure from connections on adjacent roads. Storm water runoff at the project site would be collected and treated on-site through a series of vegetated swales, storm drains, and rain gardens. Storm drain improvements along Melita Road would also be constructed, including new and replaced storm water conveyance systems draining to Santa Rosa Creek.

Potential Environmental Effects

The EIR will describe the potential direct and indirect environmental effects of the proposed project. The EIR will also evaluate the cumulative impacts of the project when considered in conjunction with other related past, present, and reasonably foreseeable future projects.

Because the Applicant has requested that an EIR be conducted for this project, an Initial Study was not prepared, as allowed by CEQA Guidelines Section 15060(d). The City has determined that the project may result in potential environmental impacts in the following topic areas, which will be evaluated further in the EIR, and feasible and practicable mitigation measures will be recommended to reduce any identified significant impacts.

Aesthetics	Hydrology and Water Quality
Air Quality	Land Use and Planning
Biological Resources	Noise
Cultural Resources	Public Services
Geology and Soils	Recreation
Greenhouse Gas Emissions	Transportation
Hazards and Hazardous Materials	Utilities and Service Systems

Environmental resource areas that are expected to be unaffected or result in less than significant impacts include agriculture and forest resources, mineral resources, and population and housing.

Potential Approvals and Permits Required

Several discretionary actions or approvals from the City will be required, including rezoning, conditional use permit, hillside development permit, preliminary and final design review, encroachment permit, tree removal permit, compliance with storm water requirements, and approvals for water supply and wastewater services.

Permits and approvals may also be required from several other agencies, including the U.S. Army Corps of Engineers, State Water Resources Control Board, California Department of Transportation, North Coast Regional Water Quality Control Board, and the Bay Area Air Quality Management District.

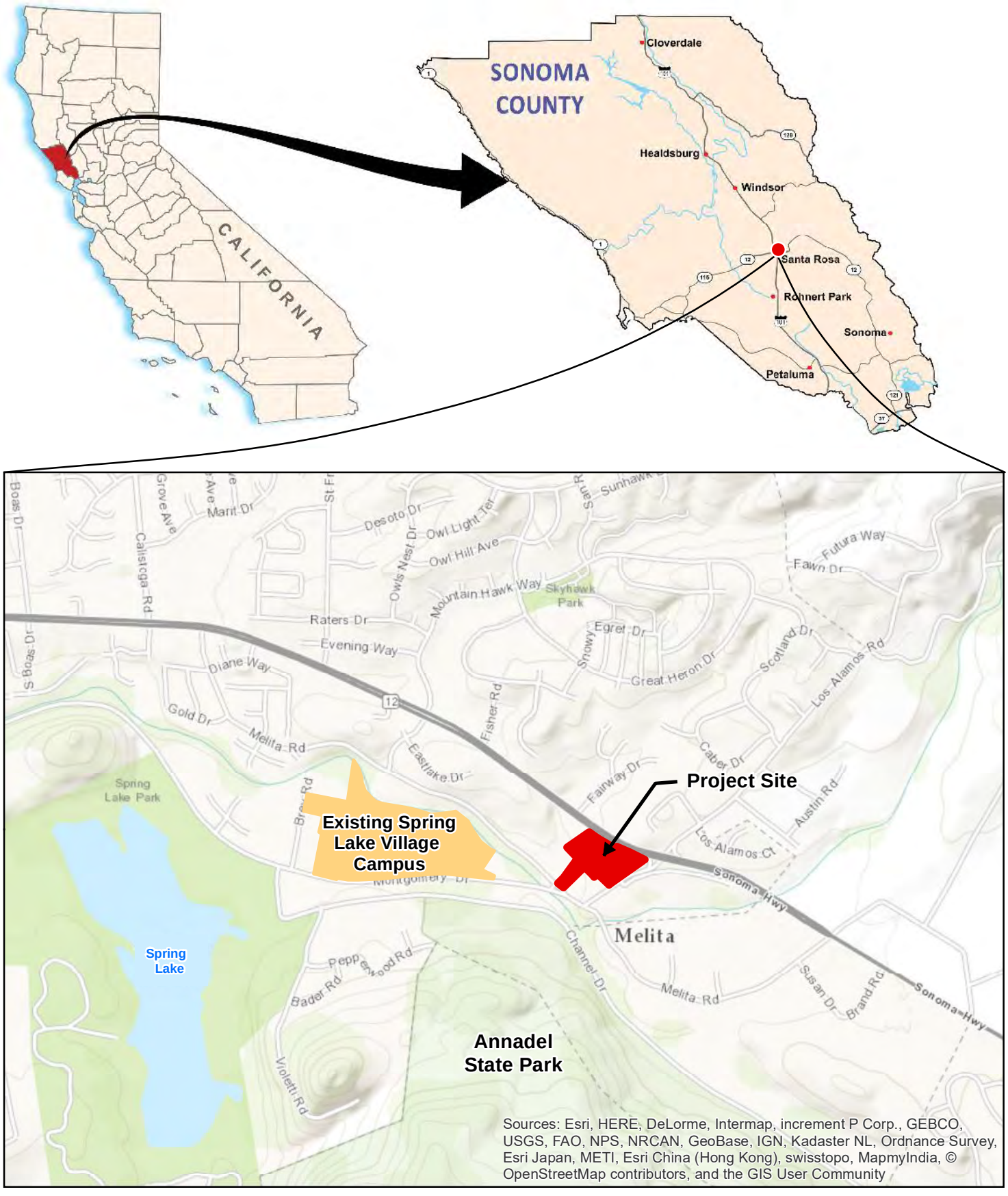
Schedule

The expected schedule for the EIR is as follows:

Scoping period	May 11 to June 9, 2016
Public scoping meeting	May 23, 2016
Draft EIR and public hearing	Fall 2016
Final EIR	Winter 2016/2017
Consideration of EIR certification & project approval	Spring 2017

Signed:_____ Date: May 9, 2016

Patrick Streeter, Senior Planner
Santa Rosa Planning and Economic Development Department



Paper Size 8.5" x 11" (ANSI A)

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

GHD

Spring Lake Village East Grove EIR

Job Number 11109018
Revision
Date 05 Apr 2016

Vicinity Map

Figure 1

2235 Mercury Way Suite 150 Santa Rosa CA 95407 USA T 707 523 1010 F 707 527 8679 E santarosa@ghd.com W www.ghd.com

\\ghdnet\ghd\US\Santa Rosa\Projects\111\11109018 SLV East Grove Expansion EIR\08-GIS\Maps\Figures\Vininicy Map.mxd

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Spring Lake Village East Grove EIR

Job Number 11109018
Revision
Date Apr 2016

GHD

Architectural Site Plan

Figure 2

2235 Mercury Way Suite 150 Santa Rosa California 95407 USA **T** 1 707 523 1010 **F** 1 707 527 8679 **W** www.ghd.com

Memorandum

July 7, 2016

To:	Patrick Streeter, Senior Planner, City of Santa Rosa		
Cc:	Michelle Gervais, Gervais & Associates		
From:	Brian Bacciarini & Kirsten Burrowes, GHD	Tel:	707-523-1010
Subject:	Spring Lake Village East Grove EIR- Scoping Summary Memorandum		

Introduction and Summary

The purpose of this memorandum is to summarize the comments that were received during the public scoping period for the Spring Lake Village East Grove Project Environmental Impact Report (EIR) currently being prepared pursuant to the California Environmental Quality Act (CEQA).

The 30-day EIR scoping period began May 11, 2016 and ended June 9, 2016. Prior to the scoping period, a Notice of Preparation (NOP) was circulated to interested parties, including the State Clearinghouse, Responsible and Trustee Agencies, Native American tribes, and neighboring property owners and occupants. Upon receipt of the NOP, the State Clearinghouse assigned the project with a routing number (State Clearinghouse Number 2016052024) for future correspondences.

A public scoping meeting was held on May 23, 2016, between 6:00 pm and 8:00 pm at Whited Elementary School, 4995 Sonoma Highway, Santa Rosa, California. A total of 15 people signed in to the meeting, 10 of whom spoke on the project. Nine written comments were also received during the 30-day scoping period. Copies of the written comments are enclosed at the end of this memo.

Summary of Comments

The comments provided at the scoping meeting and in written letters addressed a variety of topics. The most common concerns raised were related to noise, traffic, pedestrian safety, parking, and aesthetics. The comments received also addressed air quality, biological resources, land use, low-income housing, and crime.

Table 1 on the following page lists the authors of the written comments received during the scoping period.

GHD Inc.
2235 Mercury Way Suite 150 Santa Rosa CA 95407 USA
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Table 1 Spring Lake Village East Grove EIR - Written Scoping Comments Received

Agency/Organization	Individual, Title	Date Received
Comments from Agencies		
Sonoma County Regional Parks Department	Kenneth Tam, Park Planner II	May 12, 2016
California Department of Transportation (Caltrans)	Patricia Maurice, District Branch Chief	June 9, 2016
Comments from Individuals		
Greg and Suzanne Angeo	Neighbor	May 14, 2016
Al Levinsohn	Neighbor	May 23, 2016
Hank Levine	Neighbor	June 2, 2016
Lorri LaQue (1)	Neighbor	June 2, 2016
Carol Mills	Neighbor	June 7, 2016
Rita Rhine	Neighbor	June 7, 2016
Lorri LaQue (2)	Neighbor	June 13, 2016

The comments received during the scoping period are summarized below by topic.

Project Design / Potential Alternatives

Several comments were made on the project's proposed vehicular access point via Los Alamos Road. Some commenters recommended alternative locations for the access road. One commenter at the scoping meeting asked if vehicular access could occur from Highway 12. A written letter received from Villa Los Alamos residents (Greg and Suzanne Angeo) asked if the vehicular access could occur off Melita Road, suggesting that it would be closer to the existing Spring Lake Village campus. A Melita Road neighbor (Al Levinsohn) asked if the vehicular access could occur off Melita Road if his property were sold to the applicant.

One commenter at the scoping meeting expressed concern about the proposed arrangement of the residential units on the project site, suggesting that the two-story residential Villa building be moved to a different portion of the site to preserve the privacy of adjacent Melita Road neighbors.

One commenter at the scoping meeting also asked if additional off-site improvements could be made along Los Alamos Road, suggesting a crosswalk near the proposed site entrance and a new sidewalk on the east side of the road.

Aesthetics

Scoping Meeting Comments

One commenter at the scoping meeting stated that the visual character within their neighborhood has changed following the previous expansion of the Spring Lake Village campus. The commenter expressed concern that a similar change will occur in the vicinity of the project site.

One commenter expressed concern that outdoor lighting for the project could shine onto the third floor of the Villa Los Alamos residential complex, creating a new source of light or glare. A separate commenter voiced concerns about the potential use of large flood lights during construction that could create a new source of light.

One commenter suggested that a new location for the two-story residential Villa building be considered. The commenter suggested that the building be sited further away from the residential neighbors on Melita Road to preserve privacy.

Written Comments

A letter from a Melita Road neighbor (Al Levinsohn) stated that the project will take away from the privacy and scenic quality that currently exists on Melita Road. The letter expressed concerned with the impact the project could have on the residential feel of the area, and also stated an inability to obtain copies of photos and simulations that were taken from his property a year ago.

An e-mail from a resident at Villa Los Alamos (Carol Mills) stated that the project would result in a new source of light that would shine on the third floor of the 300 building at Villa Los Alamos. The e-mail also asked if the project would include a three story building, expressing an opinion that a three story building would be too tall.

Air Quality

An e-mail received from a Villa Los Alamos resident (Lorri LaQue) mentioned that the project will cut down trees that currently absorb air pollution.

Biological Resources

One commenter at the scoping meeting said they had heard that a mountain lion had been seen on the project site.

Cultural Resources

No comments pertaining to cultural resources were received during the scoping period. However, an e-mail from Lytton Rancheria was received on April 20, 2016 that requested initiation of tribal consultation, asking that cultural resources and tribal cultural resources be evaluated in the EIR, and recommending completion of a Phase I archaeological survey, followed by further consultation.

Land Use/Planning

One commenter at the scoping meeting asked what effects the rezoning of the project site would have on future developments within the City.

Noise

Scoping Meeting Comments

Several commenters at the scoping meeting stated that existing traffic noise from Highway 12 and Los Alamos Road is a nuisance to residents at Villa Los Alamos, and expressed concern that the project would make conditions worse. One commenter expressed concern that removing trees on the project site would also result in louder traffic noise in the area by eliminating an existing noise buffer.

One commenter asked about the anticipated construction schedule and expressed concern about the duration of construction and construction noise that would occur.

One commenter asked about the scope and schedule for a noise study to support the EIR.

One commenter suggested that trees be planted around the project site to minimize the project's operational noise and traffic noise from Highway 12.

Written Comments

A Melita Road neighbor (Al Levinsohn) expressed concern that construction and operation of the project will substantially change noise levels and alter the existing residential neighborhood feel of the Melita Road area.

A letter from a resident of Villa Los Alamos (Hank Levine) stated that existing traffic noise in the project area is too loud to comfortably sit outside or to keep windows open, making it difficult to sleep and causing stress. The comment letter requested that a sound wall and redwood trees be installed to reduce traffic noise.

A letter from another resident of Villa Los Alamos (Lorri LaQue) stated that existing traffic noise on Highway 12 and Los Alamos Road is impacting the condominium complex. The letter expressed concern that the project will add more noise during construction, and that following construction, the project will add more noise by resulting in more traffic and emergency vehicles (i.e., firetrucks and ambulances) along Los Alamos Road, and by removing trees at the project site that currently reduce some of the existing traffic noise. The letter requested that the applicant consider placing a sound wall and large trees along Los Alamos Road and Highway 12.

In a separate e-mail, Ms. LaQue stated that she has recorded sound levels of 89-90 dBA [the locations of the noise readings were not mentioned] and that such noise levels exceed safety standards. The e-mail requested confirmation that a noise study is going to be prepared for the EIR that will evaluate the potential impact of traffic noise from Highway 12 and Los Alamos Road. The e-mail mentioned the presence of existing sound walls along portions of Highway 12 in the project area, and stated that the project will remove trees that currently help reduce some of the existing traffic noise from Highway 12.

Transportation/Traffic

Scoping Meeting Comments

Several commenters at the scoping meeting stated that motorists use Los Alamos Road and Melita Road as a cut-through around portions of Highway 12, and that such traffic has created unsafe conditions for bicyclists, pedestrians, and vehicles in the project area. Several commenters expressed concerns that the project would increase traffic on Los Alamos Road, making existing conditions worse.

Two commenters at the scoping meeting expressed concern with the proposed vehicle access off Los Alamos Road directly across from the entrance to Villa Los Alamos, stating that it would increase traffic hazards.

One commenter expressed concern about the safety of a proposed pedestrian crosswalk on Melita Road, stating that a blind corner exists at the convergence of Montgomery Drive and Melita Road.

One commenter stated that traffic along Los Alamos Road is not safe, expressing that they would like to see a sidewalk or a bike lane surrounding the project site that separates pedestrians and bicyclists from vehicular traffic.

One commenter stated that the right-turn from Highway 12 to Los Alamos Road is unsafe and that several roll-over accidents have occurred at the location. The commenter recommended that a traffic warning sign be placed near the intersection indicating the presence of a sharp curve.

One commenter asked if a traffic signal and crosswalk would be installed near the proposed vehicular access point on Los Alamos Road to facilitate pedestrian crossings.

Written Comments

Caltrans

A letter from Caltrans requested that a traffic analysis for impacts on the State highway system be provided if the project generates 1 to 49 peak hour trips assigned to a State highway facility, and the affected highway facility is operating at LOS “E” or “F” conditions [the letter did not indicate the existing level of service for Highway 12 in the project area].

On June 27, 2016, GHD called and e-mailed Mr. Cole Iwamasa at Caltrans District 4, requesting the most recently available level of service designation for State Highway 12 in the project area. A follow-up response has not yet been received.

The Caltrans letter requested that the applicant provide the project site plans and a complete description of the proposed multimodal access improvements. The letter noted that any work or traffic that encroaches onto the State right-of-way would require an encroachment permit from Caltrans. The letter also included a list of standard Travel Demand Management for consideration.

Sonoma County Regional Parks Department

An e-mail from the Sonoma County Regional Parks Department requested that the public be allowed to use portions of the planned interior walking paths on the project site. The intent of the request appears to be to facilitate pedestrian access between Los Alamos Road and Melita Road until public improvements along the entire length of Los Alamos Road are completed. The Regional Parks Department included a map that suggested two potential locations for a pathway segment that could connect the project’s proposed public pathway on Los Alamos road with the project’s proposed interior pathway on the project site. The e-mail stated that a public access easement would need to be recorded for the portion of the public walkway along Los Alamos Road that would traverse onto the applicant’s property.

Other Written Comments

Comment letters from several residents of Villa Los Alamos, including Lorri LaQue, Carol Mills, and Greg and Suzanne Angeo, expressed concerns about potential increases in vehicle traffic along Los Alamos

Road and Montgomery Drive. Ms. Mills stated that it is difficult to exit the Villa Los Alamos complex because of a hill on Los Alamos Road and the speed at which people travel up the hill. Ms. Mills asked if a stoplight or stop sign would be installed, noting that this would take away from the rural feel of the area. Mr. and Mrs. Angeo questioned whether the project may contribute an amount of traffic to the Los Alamos/Melita/Montgomery convergence that would warrant a traffic signal.

A letter from a Villa Los Alamos resident (Carol Mills) asked if carts would be used to transfer residents between the existing Spring Lake Village campus and the project site and questioned whether carts would be street legal.

A letter from a Melita Road neighbor (Al Levinsohn) expressed concern with the safety for pedestrian traffic on roads adjacent to the project site, stating that cut-through traffic speeds down Melita Road without regard for the safety of local pedestrians.

A letter from Villa Los Alamos residents (Greg and Suzanne Angeo) expressed concern that a vehicular entrance to the project site directly across from the existing Villa Los Alamos driveway would create a traffic hazard on Los Alamos Road due to the current amount of traffic on the roadway. The commenters asked if the vehicular entrance to the project site could be moved to Melita Road.

Parking

Scoping Meeting Comments

Several commenters at the scoping meeting expressed concerns that construction crews will park their personal vehicles in the Villa Los Alamos parking spaces adjacent to Los Alamos Road. One commenter suggested that construction workers be required to have a tag on their vehicles to help distinguish whether they are improperly parked on the Villa Los Alamos property. A commenter also suggested that parking for construction worker vehicles could occur on Channel Drive near Annadel State Park with workers being shuttled to the site. The commenter mentioned that a new entrance gate may be established at Annadel State Park in the near future.

Commenters at the scoping meeting also expressed concern that the project would lead to street parking along Los Alamos Road.

Written Comments

A comment letter from a Villa Los Alamos resident (Rita Rhine) expressed concern that future staff for the East Grove may begin parking their personal vehicles along Los Alamos Road. The commenter referred to parking conditions along Montgomery Drive near the main Spring Lake Village campus, expressing concern that similar conditions could occur along Los Alamos Road.

A comment letter from a Villa Los Alamos resident (Carol Mills) expressed concern that construction workers will park in the Villa Los Alamos parking lots and worsen an existing parking shortage.

Population and Housing

One commenter at the scoping meeting asked if the residential units would provide any low-income housing. The commenter also asked why homes adjacent to the existing Spring Lake Village campus were removed during a previous campus expansion.

Other

One commenter at the scoping meeting stated that Villa Los Alamos has hired a security firm in response to an increase in car break-ins, noting that similar break-ins could occur at the project site.

Enclosures

Written Comments Received

From: Ken Tam <Ken.Tam@sonoma-county.org>
Sent: Thursday, May 12, 2016 1:08 PM
To: Streeter, Patrick
Subject: NOP - Spring Lake Village East Grove
Attachments: 12204-C3.0 Prelim Grading Plan KT comments.pdf

Hi Patrick,

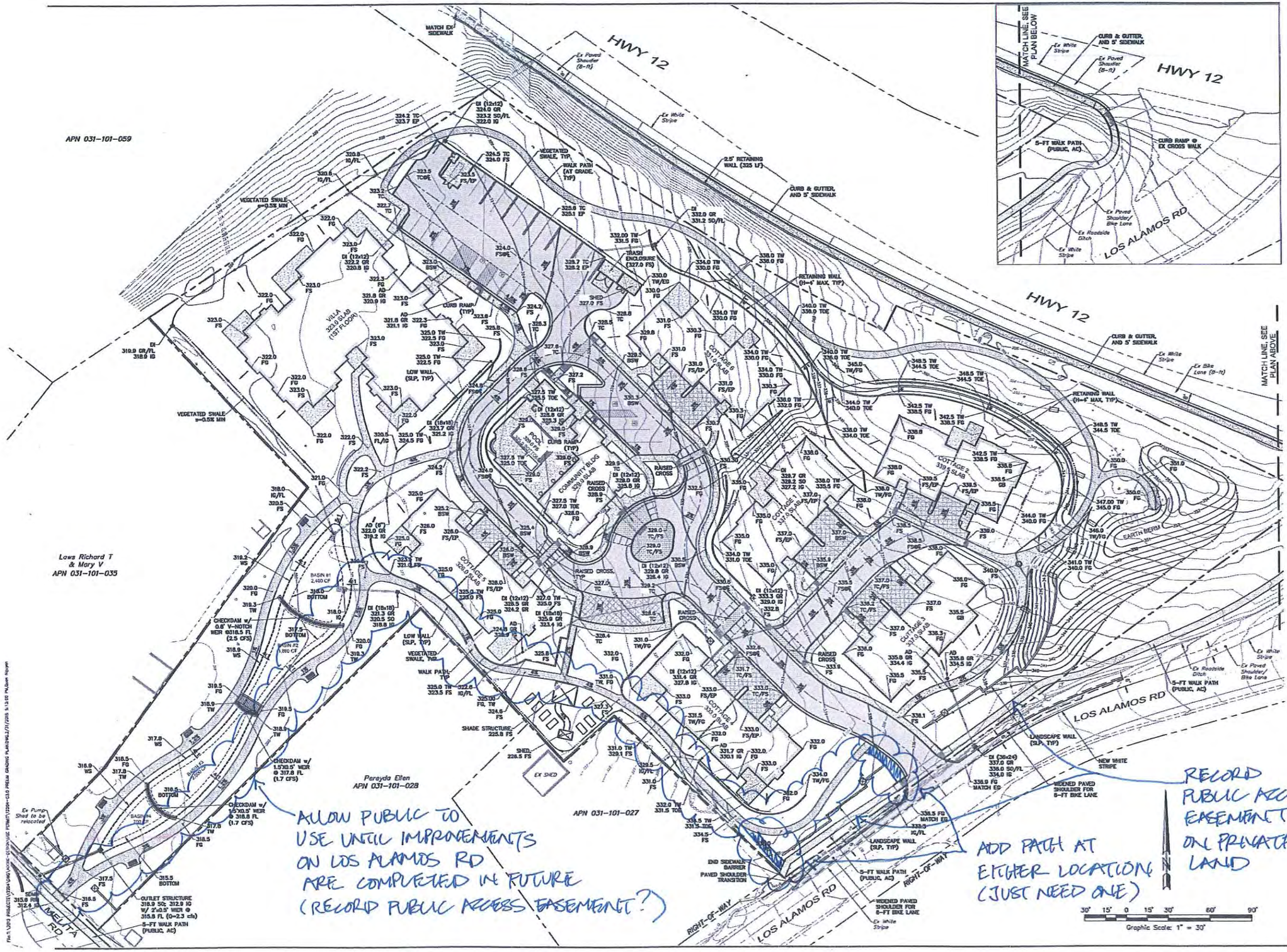
Sonoma County Regional Parks Department has received the NOP for the Spring Lake Village East Grove project. Thanks.

Our comments are noted on the attachment that was previously submitted to Noah Housh and to the applicant's engineer (Adobe Associates, Inc.) in April 2015. Here is a recap of our comments. The proposed pedestrian/bicycle improvements shown on the preliminary grading plan: 5 feet wide sidewalk on Hwy 12 frontage and existing 8 feet bike lane; 5 fee wide walking path and widen shoulder for bike lane on Los Alamos Road will provide connectivity to the planned Sonoma Valley Trail and Spring Lake Park. A section of the proposed 5 feet walking path paralleling Los Alamos Road is located on the applicant's private property. A public access easement will need to be recorded for the entire length of the walking path.

Since there will be a gap (no walkway and bike) along the north side of Los Alamos Road between Montgomery Drive and the applicant's property, we request that the general public be allowed to use the interior paths located within the applicant's property to access Melita Road. This would be a safer route to allow the general public to continue on Montgomery Drive to access Spring Lake Park. A path will need to be added to connect the 5 feet walking path with the interior path. Also, our County Supervisor has also suggested separated pathways for pedestrians and bicyclists to minimize conflict between the two user groups.

Thanks
Ken

Kenneth Tam, Park Planner II
Sonoma County Regional Parks Department
2300 County Center Drive, Suite 120A
Santa Rosa, Ca 95403
707-565-3348 work
707-579-8247 office fax
707-565-3642 planning fax
ken.tam@sonoma-county.org
5-12-2016



NO. DATE ISSUE

REGISTERED PROFESSIONAL ENGINEER DAVID R. BROWN No. 41833 Exp.3/31/2016 Civil STATE OF CALIFORNIA

David R. Brown, RCE 41833
My license expires 3/31/2016 SEAL

KEY PLAN

Perkins Eastman

22 GEARY STREET, SUITE 902 SAN FRANCISCO, CA 94108 T 415.905.7500 F 415.905.7520

1105 LIBERTY AVENUE PITTSBURGH, PA 15222 T 412.456.2560 F 412.456.2566

Owner:
EPISCOPAL SENIOR COMMUNITIES, INC.
2185 N. CALIFORNIA BLVD. SUITE 575
WALNUT CREEK, CA 94596
TEL. (925) 956-7355

Civil / Site:
ADOBE ASSOCIATES
1220 NORTH DUTTON AVENUE
SANTA ROSA, CA 95401
TEL. (707) 541-2300

Landscape:
RESOURCE DESIGN
835 PINER ROAD, SUITE E
SANTA ROSA, CA 95403
TEL. (707) 526-9009

Arborist:
HORTICULTURAL ASSOCIATES
P.O. BOX 1261
GLENN ELLEN, CA 95442
TEL. (707) 935-3911

Design & Development Consultant:
GERVAIS & ASSOCIATES
50 SANTA ROSA AVENUE, SUITE 400
SANTA ROSA, CA 95404
TEL. (707) 575-4736

PROJECT TITLE:

SPRING LAKE VILLAGE EAST GROVE DEVELOPMENT

LOS ALAMOS ROAD
SANTA ROSA, CA 95409

PROJECT No: 53681.00

DRAWING TITLE:

PRELIMINARY GRADING PLAN

SCALE: SCALE: 1" = 30'

C3.0

PRELIMINARY DESIGN DEVELOPMENT SUBMISSION

APRIL 2, 2015

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
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June 9, 2016

SON012626
SON-12-21.23
SCH # 2016052024

Mr. Patrick Streeter
Planning Division
City of Santa Rosa
100 Santa Rosa Avenue, Room 3
Santa Rosa, CA 95402

Spring Lake Village East Grove – Notice of Preparation

Dear Mr. Streeter:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Spring Lake Village East Grove Project. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system, in which we seek to reduce statewide vehicle miles traveled (VMT) and increase non-auto modes of active transportation. Caltrans plans to increase non-auto mode shares by 2020 through tripling bicycle, and doubling pedestrian and transit. Also, these targets support the Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy, which promotes the increase of non-auto mode shares by ten percentage points and a decrease in automobile VMT per capita by ten percent. Our comments are based on the Notice of Preparation (NOP).

Project Understanding

The proposed project would construct an extension to the existing Spring Lake Village Continuing Care Retirement Community, which is located at 5555 Montgomery Drive. The proposed campus extension, approximately 800-feet east from the existing facilities, would be constructed on a 5.83-acre site in the southwestern quadrant of the State Route (SR) 12/Los Alamos Road intersection. The project scope includes the development of a single-story community building, six single-story duplex cottages, and a two-story residential building, which would comprise a total of 24 units and support up to 48 residents.

The project also includes improvements to pedestrian and bicycle facilities adjacent to the project site. Multimodal access improvements include Class II bicycle lanes and a walking path on Los Alamos Road, Class II bicycle lanes and a pedestrian pathway on Montgomery Drive; and new sidewalk, pedestrian pathway, and a crosswalk on Melita Road. Vehicular access would be gained along project frontage via a driveway located on Los Alamos Road. SR 12, the parcel's northern boundary, would be accessed approximately 450 feet from the project driveway and would provide

regional access to the site.

Lead Agency

As the lead agency, the City of Santa Rosa (City) is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document.

Traffic Impact Study

Please ensure that the environmental document evaluates the proposed project's impact on the State highway system. The criteria listed below should be used in determining if a traffic analysis is warranted. We recommend using Caltrans' *Guide for the Preparation of Traffic Impact Studies* for determining which scenarios and methodologies to use in the analysis. The guide can be accessed from the following webpage: www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide .pdf. If the proposed project will not generate the amount of trips needed to meet Caltrans' trip generation thresholds, an explanation of how this conclusion was reached must be provided.

- The project would generate 100 peak hour trips assigned to a State Highway System (SHS);
- The project would generate 50 to 100 peak hour trips assigned to a State highway facility, and the affected highway facilities are experiencing a noticeable delay; approaching unstable traffic flow (level of service (LOS) "C" or "D") conditions; or
- The project would generate 1 to 49 peak hour trips assigned to a State highway facility, and the affected highway facilities are experiencing significant delay; unstable or forced traffic flow (LOS "E" or "F") conditions

Multimodal Planning

Please provide the site plans and a complete description of the proposed multimodal access improvements. Caltrans commends the project for ensuring the connection of existing bike lanes, sidewalks, and multi-use trails to facilitate walking and biking to nearby jobs, neighborhood services, and transit. Providing these connections with streets configured for alternative transportation modes will reduce VMT by promoting usage of nearby Sonoma County Transit (SC Transit) Routes 30, 30X, and 34.

Incorporating Travel Demand Management (TDM) in the project will promote smart mobility, thus reducing regional VMT and traffic impacts to the State highway system. Please consider the TDM options below. For information about parking ratios, please see MTC's report, *Reforming Parking Policies to Support Smart Growth*, or visit the MTC parking webpage: http://www.mtc.ca.gov/planning/smart_growth/parking.

- Project design to encourage walking, bicycling, and convenient transit access;
- Car-sharing programs;
- Designated bicycle parking;

- Aggressive trip reduction targets with Lead Agency monitoring and enforcement;
- Reducing headway times of nearby SC Transit Route 30, 30X, and 34; and
- Transit fare incentives for employees and residents such as subsidized transit passes on a continuing basis.

Encroachment Permit

Please be advised that any work or traffic control that encroaches onto the State right-of-way (ROW) requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW must be submitted to the following address: David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website linked below for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits

Should you have any questions regarding this letter or require additional information, please contact Cole Iwamasa at (510) 286-5534 or cole.iwamasa@dot.ca.gov.

Sincerely,

Patti

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

Streeter, Patrick

From: Greg & Suzanne Angeo <angeo7@sbcglobal.net>
Sent: Saturday, May 14, 2016 12:28 PM
To: Streeter, Patrick
Subject: Public Scoping Period Comments - Spring Lake Village East Grove

Follow Up Flag: Follow up
Flag Status: Flagged

Mr Streeter,

We are residents of Villa Los Alamos, the condominium complex on Los Alamos Road, across from the proposed Spring Lake Village East Grove expansion project. We would like to comment on the site plan, which we received in the mail yesterday.

The proposed project driveway is located directly across Los Alamos Road from our complex's driveway. We fear this would create a traffic hazard. Los Alamos Road is a residential street, but it already has too much traffic from drivers using it as a shortcut from Highway 12 to Montgomery Drive. This driveway location would only make the situation worse.

Would it be possible to move the driveway to the location off Melita Road where the proposed project's pedestrian path is currently located on the plan? A driveway off Melita Road would be closer to the existing Spring Lake Village campus, and would provide easy access from Montgomery Drive.

Also, there is a lot of traffic on the Los Alamos Road/Melita Road/Montgomery Drive convergence, so it would seem that the new project would need a traffic signal, but we didn't see any mention of this in the notice that came with the site plan.

Thank you for giving us the opportunity to express our opinions. We hope you will take them into consideration during the review process.

Sincerely,

Suzanne and Greg Angeo
240 Los Alamos Rd
Santa Rosa, CA 95409

Attention: Patrick Streeter

RE: Spring Lake Village East Grove

Mr. Streeter, May 23rd 2016

I am writing to you today to voice my concern with the proposed project behind our property at 5815 Melita rd.

The project will no doubt take away the privacy and natural beauty we enjoy in the backyard of our home on our quiet street Melita Road

This past week, grass mowers were used to clear the tall grass off the lot behind us, the area of the proposed project.. The sound was so intense we actually felt they were coming through the trees into our yard. The thought of the intensity of this construction project behind us causes us great concern. Melita road being such a quiet and peaceful place will no longer be the case. For those of us living around this project (and there are just two families directly affected) this will be a true nightmare.

Over a year ago, project designers and engineers set up story poles in the lot behind us. They then came onto our property and stood on our deck and took pictures of the proposed sightlines. Even after recent requests to view these photos, they still to date, for one reason or another, have not been made available to us for review.

Not only are we concerned about the noise, the change in our serene backyard setting and the impact to our residential feel. We are greatly concerned what will happen / will need to happen to accommodate the great impact of pedestrian traffic going to and from the main campus. As it is now, the traffic speeds down our street without any regard for the safety of our local pedestrians. The area just does not support the pedestrian traffic outlined in the Spring Lake project description.

Mr. Streeter, My wife Raine and I very much appreciate your careful review of this project and the environmental impact it will cause to those of us directly bordering the proposed project. F or the record, we are very much against this project at this time for these said reasons.

Thank you for your time,
Al Levinsohn
5815 Melita Rd
907 351-3784

Spring Lake Village East Grove EIR
Public Scoping Meeting
May 23, 2016

WRITTEN COMMENTS

NAME: Hank Levine

ADDRESS: 245 Las Alamos Rd

E-MAIL ADDRESS: hankslevine@gmail.com

COMMENTS: There are 98 condos in our association at Villa Las Alamos Condominiums I am not alone in my feelings that this area is so loud that the noise [redacted] is at a decibel level deemed unhealthy. Never before have we had to go inside when the many trucks, motorcycles, ambulances, police cars and fire engines come by here. We can hear people yelling at eachother at the light adjacent to our condos. Not only does this make us want to go inside but we also have to close our doors and windows on hot days to keep the noise out. At night this poses a huge problem on hot nights and wakes us up when sleeping. It has become increasingly difficult to sleep thru the night without being awakened. There are many people with health problems I being a diabetic with heart problems for one who feel that the stress and lack of sleep that this is causing poses a great health risk. We are requesting a wall and redwoods to abeive the situation

You may leave your comments with us tonight or mail your comments to Patrick Streeter, Senior Planner, City of Santa Rosa, Planning and Economic Development Department, 100 Santa Rosa Avenue, Room 3, Santa Rosa CA 95404 or by email to: pstreeter@srcity.org. Written scoping comments will be received through June 9, 2016.

Spring Lake Village East Grove EIR
Public Scoping Meeting
May 23, 2016

WRITTEN COMMENTS

NAME: Lorri LaQue

ADDRESS: 248 Los Alamos Rd SR 95409

E-MAIL ADDRESS: lorrilaque@sbcglobal

COMMENTS:

The traffic noise on Hwy 12 at Los Alamos traffic light is "Very loud." All hours of the day the big trucks, motorcycles and numerous cars stop & go at the light. Over the last ten years there are also an increase of firetrucks and ambulances sirens do to the location of Spring Lake Village and Oakmont. This to has added to the increase in the loud traffic noise. The Villa Los Alamos Condos will be sharing the short section of the South end of Los Alamos Rd with the Spring Lake Village East Grove. Your development is going to contribute to more traffic & more noise. The two years of building for the Development will also contribute to the noise increase. Plus you will be takening down many trees on the prosel that act as a noise barrior. We at the Villa Los Alamo Condo's would like to request a cooperation with creating a sound wall & Large trees

You may leave your comments with us tonight or mail your comments to Patrick Streeter, Senior Planner, City of Santa Rosa, Planning and Economic Development Department, 100 Santa Rosa Avenue, Room 3, Santa Rosa CA 95404 or by email to: pstreeter@srcity.org. Written scoping comments will be received through June 9, 2016.

planted along our section of Los Alamos Rd and down Hwy 12. The noise decibel ~~is way beyond the~~ has created an Environmental impact.

Streeter, Patrick

From: Carol Mills <suikou@sonic.net>
Sent: Tuesday, June 07, 2016 10:54 AM
To: Streeter, Patrick
Subject: Comments regarding Spring Lake Village East Grove EIR

Comments regarding Spring Lake Village East Grove EIR

Carol Mills
398 Los Alamos Rd (Villa Los Alamos)
Santa Rosa, Ca 95409
suikou@sonic.net

Comments::

1) I am concerned about additional traffic on Montgomery and especially on Los Alamos. Where will your entrance be? Directly across from Los Alamos Villas? Already we have trouble exiting as it is difficult to see cars coming from Montgomery because of the hill and the speed that they are traveling. Are we going to have a stoplight or a stop sign? We moved here because it is, or at least it feels like, a rural area. A stoplight changes this feeling and I don't want it.

2) VLA has a shortage of parking. Where are the construction workers going to park? Of course they'll be told not to park in VLA but some will, creating a further problem for VLA.

3) There will be bright light shinning in the third floor of the 300 building.

4) Are you going to build three stories behind the church? Too tall.

5) How are you going to transfer people between facilities? I heard by the carts using the sidewalk. You will have to pass over Melita, and I may be wrong, but those carts aren't street legal.

As you see, I have many concerns.

Carol Mills

Streeter, Patrick

From: Rita Rhine <rhinerita@yahoo.com>
Sent: Tuesday, June 07, 2016 2:54 PM
To: Streeter, Patrick
Subject: serious concerns

Hi Patrick, I am a resident home owner at Villa Los Alamos (214) right out in front facing your proposed driveway and new senior community. I am very concerned about the parking of the caregivers and staff who may try and park along Los Alamos Rd.

Look at Montgomery Ave what parking has become there! Lines of cars and folks parking all along the roadway. How are you planning to control the parking on the street? Is it going to look like your main campus? Should I send a picture?

This will be unacceptable along Los Alamos Rd, the traffic is already out of control and then add lots of parked cars it will just make the horrific problems worse!!

My concern is **serious** and I hope you will address the problem before you begin your construction of this new community.
Sincerely Rita Rhine.

Streeter, Patrick

From: Lorri LaQue <lorrilaque@sbcglobal.net>
Sent: Monday, June 13, 2016 9:37 AM
To: Streeter, Patrick
Subject: Spring lake village development on Los Alamos rd

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Steve,
We met last month at Douglas Whited School for the meeting regarding the new Development. Can you share if and when there is going to be a noise abatetment study for the impact of traffic noise on Highway 12 and Los Alamos rd. Not sure If you have noticed, but along Hwy 12 in various locations there are sound walls. One in particular just down the road from us-The residential development on the south side of hwy 12 at the Mountain Hawk traffic light. Spring Lake Dev. Is going to be cutting down trees that absorb air pollution and aid in a sound barrier, will add to the increased traffic and the construction noise over the two years or more that it will take to complete the project.
Please get back with me. I have been researching Caltrain and our fed/state regulations on health and road traffic.
My sound meter has been getting readings as high as 89-90 dBAs. Way beyond the health standards.
Will be good to hear back from you.
Sincerely
Lorri LaQue
248 Los Alamos Rd. In the Villa Los Alamos Condos

Sent from Yahoo Mail for iPhone

Notice of Preparation for an Environmental Impact Report

To:	**State Clearinghouse, Agencies, and Interested Parties**
Project Title:	**Spring Lake Village East Grove Project**
Lead Agency:	**City of Santa Rosa** **Planning and Economic Development Department** **100 Santa Rosa Avenue, Room 3** **Santa Rosa, CA 95404**
Contact:	**Patrick Streeter, Senior Planner** **Tel: 707-543-4323** **Fax: 707-543-3269** **E: pstreeter@srcity.org**
Applicant:	**Episcopal Senior Communities**
Scoping Period:	**August 30 to September 28, 2017**

The City of Santa Rosa Planning and Economic Development Department is preparing an Environmental Impact Report (EIR) for the Spring Lake Village East Grove Project (project). The City issued a previous Notice of Preparation (NOP) for the project on May 11, 2016. On May 23, 2016, a public scoping meeting was held at Douglas Whited Elementary School.

Subsequent to the previous NOP, Episcopal Senior Communities (Applicant) has modified the proposed project. Proposed modifications include the development of two additional properties located adjacent to the project site on Melita Road, and construction of additional independent living units and other amenities.

The Applicant has also developed a project alternative and has requested that the project alternative be evaluated at the same level of detail as the proposed project in the EIR.

In accordance with the State CEQA Guidelines, the City of Santa Rosa has prepared this NOP to inform agencies and interested parties of the modified project, the project alternative, and the City's intent to prepare an EIR. This NOP describes both the modified project and the proposed alternative to allow agencies and interested parties the opportunity to provide meaningful input related to the scope and content of the EIR.

Providing Comments

Agencies and interested parties may provide the City with written comments on the scope and content of the EIR for the project and the project alternative. Because of the time limits mandated by State law, comments should be provided within 30 calendar days of receiving this notice. Please send all comments to Patrick Streeter at the address shown above. A second scoping meeting is not required.

Modified Project Location and Surrounding Uses

The modified project site is shown on Figure 1. The modified project site is comprised of three parcels and is 7.28 acres in size. Surrounding land uses to the north include Highway 12 and single-family residences; to the south are a bed and breakfast inn, single-family residences and Melita Road, Montgomery Drive, and Annadel State Park; to the east are Los Alamos Road and multi-family residences; and to the west are single-family residences, a church, and the existing Spring Lake Village Continuing Care Retirement Community. The project site is located approximately 800 feet east of the existing Spring Lake Village Continuing Care Retirement Community, which is located at 5555 Montgomery Drive. Although not shown on Figure 1, the project also includes off-site pedestrian improvements along Montgomery Drive, Melita Road, and Los Alamos Road, and off-site storm drain facilities within and adjacent to Melita Road.

Description of Modified Project

The originally proposed project has been modified to include the development of two additional properties located on Melita Road adjacent to the project site. The two additional properties include single-family residential dwellings and associated improvements, which would be removed and replaced with four single-story duplex cottages. A site plan for the modified project is included as Figure 2.

The modified project would increase the size of the project site from 5.83 acres to 7.28 acres, would increase the number of single-story duplex cottages from six cottages to ten cottages, and would increase the total number of independent living units from 24 units to 32 units, which would support up to 64 residents at full occupancy.

In addition to the new cottages, the two additional properties would be developed with additional parking areas, paved walking paths, landscaping, drainage features, lighting, and fencing. The modified project would result in new impervious surfaces and changes to the size and location of storm water bioretention areas subject to the City of Santa Rosa Low Impact Development storm water requirements.

The modified project would not change the orientation or density of other site improvements described in the previous NOP. The proposed two-story residential building, referred to as the Villa, would continue to provide 12 of the proposed independent living units. The modified project would not change the previously proposed vehicle access to the project site, which would continue to be provided via a driveway off Los Alamos Road. The provision of a secondary emergency access point, which would be provided along the pedestrian pathway connecting with Melita Road, also remains as originally proposed.

The modified project would not change the proposed off-site pedestrian, bicycle, and storm water improvements described in the previous NOP. However, subsequent to the initial NOP, additional details have been developed on the off-site improvements, which are presented in the following paragraphs.

Improvements along Montgomery Drive would include reconfiguration of an approximately 600-foot segment of Montgomery Drive to provide space for a 5-foot wide pedestrian pathway on the west side of Montgomery Drive. Within the 600-foot segment, each of the two existing vehicle travel lanes on Montgomery Drive would be narrowed to 11 feet in width to create space for both the new pedestrian pathway and Class II bike lanes on both sides of the road.

The intersection of Montgomery Drive and Melita Road would be reconfigured and would include a new 5-foot wide sidewalk connecting to a proposed on-site walking path at Melita Road. A raised pedestrian island

with curb ramps would be provided in the center of the crosswalk to promote pedestrian safety and accessibility. A new sidewalk and pedestrian pathway would be constructed on the south side of Melita Road connecting to Montgomery Drive.

The project includes a publicly accessible off-street pedestrian path along the Los Alamos Road frontage. The pathway would extend from an existing crosswalk at Highway 12 to the southeast limits of the project site. The proposed project would also widen and re-stripe a section of Los Alamos Road to provide a 5-foot wide Class II bicycle lane adjacent to the project site as envisioned in the City of Santa Rosa Bicycle and Pedestrian Master Plan.

The project would tie into existing off-site utilities. Storm water runoff at the project site would be collected and treated on-site through a series of vegetated swales, storm drains, and rain gardens. Storm drain improvements along Melita Road would also be constructed, including new and replaced storm water conveyance systems draining towards Santa Rosa Creek.

Description of Project Alternative

The Applicant has developed a project alternative and has requested that the alternative be evaluated at the same level of detail as the proposed project in the EIR. A site plan for the project alternative is included as Figure 3.

The project alternative would be located on the same site as the modified project and would include the same total number of independent living units, namely 32 units supporting up to 64 residents at full occupancy. The project alternative differs from the modified project with regard to building orientations, massing, and parking. It also would avoid impacts to an on-site seasonal wetland. The project alternative would include the same vehicle access and off-site pedestrian, bicycle, and storm water improvements as the modified project, described above.

Residential Units Comparison

Below is a comparison of the residential buildings and independent living units proposed as part of the original project, the modified project, and the project alternative.

Residential Units Comparison

	Original Project	Modified Project	Project Alternative
Cottages	6	10	9
Cottage Units	12	20	18
Villa	2 story 28 feet 3 inches tall	2 story 28 feet 3 inches tall	2 story with partial 3 story 36 feet 6 inches tall
Villa Units	12	12	14
Total Units	24	32	32
Total Bedrooms	48	64	64

Potential Environmental Effects

The EIR to be prepared will describe the potential direct and indirect environmental effects of the proposed project and the project alternative. The EIR will also evaluate the cumulative impacts of the project when considered in conjunction with other related past, present, and reasonably foreseeable future projects.

Because the Applicant has requested that an EIR be conducted for this project, an Initial Study was not prepared, as allowed by CEQA Guidelines Section 15060(d). The City has determined that the project may result in potential environmental impacts in the following topic areas, which will be evaluated further in the EIR, and feasible mitigation measures will be recommended to reduce any identified significant impacts.

Aesthetics	Hydrology and Water Quality
Air Quality	Land Use, Population, and Housing
Biological Resources	Noise
Cultural Resources / Tribal Cultural Resources	Public Services
Geology and Soils	Recreation
Greenhouse Gas Emissions	Transportation
Hazards and Hazardous Materials	Utilities and Service Systems

Environmental resource areas that are expected to be unaffected or result in less-than-significant impacts include agriculture and forest resources and mineral resources.

Potential Approvals and Permits Required

Several discretionary actions or approvals from the City will be required for the project, including rezoning, a conditional use permit, hillside development permit, preliminary and final design review, grading and building permits, encroachment permit, tree removal permit, compliance with storm water requirements, and approvals for water supply and wastewater services.

Permits and approvals may also be required from several other agencies, including the U.S. Army Corps of Engineers, State Water Resources Control Board, California Department of Transportation, North Coast Regional Water Quality Control Board, and the Bay Area Air Quality Management District, and other agencies for normal operation of a community care facility.

Schedule

The expected schedule for the EIR is as follows:

2nd Scoping period	August 30 to September 28, 2017
Draft EIR and public hearing	January/February 2018
Final EIR	Summer 2018
Consideration of EIR certification & project approval	Summer 2018

Signed:_____ Date: August 28, 2017

Patrick Streeter, Senior Planner
Santa Rosa Planning and Economic Development Department

0 200 400
Feet
Approximate Scale

N

LEGEND
Original Site Boundary
Expanded Site Boundary

GHD

Spring Lake Village East Grove EIR

Job Number 11109018
Revision
Date Aug 2017

Figure 1

2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679 W www.ghd.com

Spring Lake Village East Grove EIR

Job Number 11109018
Revision
Date Aug 2017

Figure 2

2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679 W www.ghd.com

Spring Lake Village East Grove EIR

Job Number 11109018
Revision
Date Aug 2017

Project Alternative Site Plan

Figure 3

2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679 W www.ghd.com

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

September 26, 2017

SCH# 2016052024
04-SON-2017-00188
GTS ID 7682

Mr. Patrick Streeter
City of Santa Rosa
Planning and Economic Development Department
100 Santa Rosa Avenue, Room 3
Santa Rosa, CA 95404

Spring Lake Village East Grove – Notice of Preparation (NOP)

Dear Mr. Streeter:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced project. In tandem with the Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy (SCS), Caltrans mission signals a modernization of our approach to evaluating and mitigating impacts to the State Transportation Network (STN). Caltrans' *Strategic Management Plan 2015-2020* aims to reduce Vehicle Miles Travelled (VMT) by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the NOP.

Project Understanding

The proposed project would construct an extension to the existing Spring Lake Village Continuing Care Retirement Community, which is located at 5555 Montgomery Drive. The proposed campus extension, approximately 800-feet east from the existing facilities, would be constructed on a 7.28-acre site in the southwestern quadrant of the State Route (SR) 12/Los Alamos Road intersection. The project scope includes the development of a two-story villa with 12 units and ten cottages with 20 units, which would comprise a total of 32 units that supports up to 64 residents. In addition, the applicant proposes to remove and replace four single-family residential dwellings.

The project also includes development of additional parking area, improvements to pedestrian and bicycle facilities adjacent to the project site, landscaping, drainage features, lighting, and fencing. Multimodal access improvements include Class II bicycle lanes and a walking path on Los Alamos Road, Class II bicycle lanes and a pedestrian pathway on Montgomery Drive; and new sidewalk, pedestrian pathway, and a crosswalk on Melita Road. Vehicular access would be gained along project frontage via a driveway located on Los Alamos Road. SR 12, the parcel's northern boundary, would be accessed approximately 450 feet from the project driveway and would provide regional access to the site.

Project Description
Please clarify the number of proposed additional parking spaces.

Lead Agency
As the lead agency, the City of Santa Rosa (City) is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the draft environmental document.

Cultural Resources
The project area is extremely sensitive for cultural resources and there are multiple resources recorded within the vicinity. As a part of the environmental review for this project, we recommend that the City of Santa Rosa conduct a cultural resource technical study that at a minimum includes a records search at the Northwest Information Center of the California Historical Resources Information System (CHRIS), as well as a field survey of the project area by a qualified archaeologist and qualified architectural historian.

Additionally, per California Environmental Quality Act (CEQA) and Assembly Bill (AB) 52, we recommend that the City of Santa Rosa conduct Native American consultation with tribes, groups, and individuals who are interested in the project area and may have knowledge of Tribal Cultural Resources or other sacred sites.

If an encroachment permit is needed for work within Caltrans right-of-way, we may require that cultural resource technical studies be prepared in compliance with CEQA, Public Resources Code (PRC) 5024, and the Caltrans Standard Environmental Reference (SER) Chapter 2 (http://www.dot.ca.gov/ser/vol2/vol2.htm).

Should ground-disturbing activities take place within Caltrans right-of-way and there is an inadvertent archaeological or burial discovery, in compliance with CEQA, PRC 5024.5, and the SER, all construction within 60 feet of the find shall cease and the Caltrans District 4 Office of Cultural Resource Studies (OCRS) shall be immediately contacted at (510) 622-1673.

Operations Analysis
We are concerned with the projected increase in generated trips, which has the potential to create significant speed differentials and increase the number of conflicts on SR 12. Please submit a Traffic Impact Study analyzing project-related trip generation, distribution, and storage capacity within STN. The analysis of state facilities is necessary to determine the scope and significance of issues that may arise from the project's potential conflicts. The California Environmental Quality Act does not exempt these types of operational concerns from evaluation.

We welcome the proposed pedestrian path along Los Alamos Road that will connect to SR 12. The eastbound right-turn movement at SR 12/Los Alamos Road intersection is currently uncontrolled. To enhance pedestrian safety and meet accessibility standards, please upgrade the pedestrian crossing by installing ADA curb ramps, vehicular and pedestrian signal phases. In addition, sidewalk to connect the existing bus stops near the intersection of SR 12 and Los Alamos Road should be installed.

Vehicle Trip Reduction

With the enactment of Senate Bill (SB) 743, Caltrans is focusing on transportation infrastructure that supports smart growth and efficient development. Recently approved guidance for incorporating SB 743 (*Local Development-Intergovernmental Review Program Interim Guidance, November 2016*) intends to ensure that development projects align with State policies through the use of efficient development patterns, innovative travel demand reduction strategies, and necessary multimodal roadway improvements.

In Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, this project falls under **Place 4 Suburban Communities – Neighborhoods**, which includes areas with a low level of integration of housing with jobs, retail service, poorly connected street networks, low levels of transit service, a large amount of surface parking, and inadequate walkability, residential subdivisions and complexes including housing, public facilities and low-serving commercial uses typically separated by corridors. Though OPR's guidelines regarding SB 743 are currently a technical advisory, these changes will go into effect once the rulemaking process is complete and VMT analysis for similar projects may be required.

Given the intensification of use and the opportunities to reduce VMT, we encourage the City to establish a Transportation Management Association (TMA) in partnership with other developments in the area to pursue aggressive trip reduction targets with Lead Agency monitoring and enforcement. In addition, the Transportation Demand Management (TDM) elements described below should be included in the program to promote smart mobility and reduce regional VMT and traffic impacts to the STN:

- Project design to encourage walking, bicycling, and convenient transit access;
- Ten percent vehicle parking reduction;
- Transit fare incentives for residents on an ongoing basis;
- Transit and trip planning resources such as a commute information kiosk;
- Enhanced bus stops including bus shelters;
- Electrical vehicle (EV) charging stations and designated parking spaces for EVs and clean fuel vehicles;
- Secured bicycle storage facilities;
- Fix-it bicycle repair station(s); and
- Decrease headway times and improve way-finding on Sonoma County Transit bus routes to provide a better connection between the project, nearby Southside Transit Center, Down Town

Santa Rosa Sonoma-Marin Area Rail Transit (SMART) Station, and regional destinations.

Transportation Demand Management (TDM) programs should be documented with annual monitoring reports by an onsite TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets. Also, reducing the parking supply can encourage active forms of transportation, reduce regional VMT, and lessen future transportation impacts on SR 12 and other State facilities. These smart growth approaches are consistent with the MTC's Regional Transportation Plan and SCS goals and would meet Caltrans Strategic Management Plan sustainability goals.

For additional TDM options, please refer to Chapter 8 of Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference*, regarding TDM at the local planning level. The reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.
For information about parking ratios, please see MTC's report, Reforming Parking Policies to Support Smart Growth, or visit the MTC parking webpage: http://www.mtc.ca.gov/planning/smart_growth/parking.

Multimodal Planning
The project should be conditioned to ensure connections to proposed bike lanes and multi-use trails to facilitate walking and biking to the project site, local destinations, and transit nodes. Potential improvements include accessible walking and bicycling paths to connect to the existing Class II bike lanes on Montgomery Drive, the proposed Class II bike lanes on State Route (SR) 12 (Sonoma Highway) and Los Alamos Road, multi-use trail at nearby proposed Central Sonoma Valley Trail, the Eastside Transit Center, Downtown Santa Rosa SMART Station, as shown in the *2010 City of Santa Rosa Bicycle and Pedestrian Master Plan*. Providing these connections with streets configured for alternative transportation modes will reduce VMT and promote usage of nearby Santa Rosa City bus routes 30, 30X, and 34.

Traffic Impact Fees
Please identify project-generated travel demand and estimate the costs of public transportation improvements necessitated by the proposed project; viable funding sources such as development and/or transportation impact fees should also be identified. We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT.

Transportation Permit
Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to

destination must be submitted to: Caltrans Transportation Permits Office, 1823 14th Street, Sacramento, CA 95811-7119. See the following website for more information: http://www.dot.ca.gov/hq/traffops/permits.

Encroachment Permit

The applicant will be required to apply for and obtain an encroachment permit for any work within Caltrans ROW prior to construction. As part of the encroachment permit process, the applicant must provide appropriate CEQA environmental approval, where applicable, for potential environmental impacts within the ROW. The City of Santa Rosa/applicant can schedule an encroachment pre-application meeting with Arun Guduguntla at arun.guduguntla@dot.ca.gov. The applicant is responsible for quantifying the environmental impacts of the improvements within Caltrans ROW (project-level analysis) and completing appropriate avoidance, minimization and mitigation measures. Any improvements/mitigation measure affecting the operations of SR 12 requires Caltrans review and approval.

To apply for an encroachment permit, please complete an encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW, and submit to the following address: David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website linked below for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits.

Should you have any questions regarding this letter, please contact Stephen Conteh at (510) 286-5534 or stephen.conteh@dot.ca.gov.

Sincerely,

Patti

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

Appendix B – Air Quality Assessment

SPRING LAKE VILLAGE EXPANSION PROJECT

AIR QUALITY ASSESSMENT

Santa Rosa, California

August 7, 2017
Revised February 9, 2018
Revised February 5, 2020

Prepared for:

Michelle Gervais
Gervais & Associates,
1275 Fourth Street, #257,
Santa Rosa, CA 93940

Prepared by:

James Reyff and Bill Popenuck

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Ave
Cotati, CA 94931
(707) 794-0400

I&R Project#: 16-110

Introduction

The purpose of this report is to address air quality and toxic air contaminant (TAC) impacts associated with the proposed expansion of the existing campus Spring Lake Village's continuing care retirement community in Santa Rosa, California. Air quality impacts could occur due to temporary construction emissions and as a result of direct and indirect emissions from new residences. The primary issue addressed in this air quality study is localized community risk impacts from emissions of project construction equipment. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The proposed expansion would be located at Melita Road, approximately 0.15 miles east of the existing campus. The project would construct 32 independent living dwelling units, consisting of a combination of cottages and villas with both garage and surface parking lot spaces, as well as buildings for the club house, mechanical equipment, and storage. The project would also consist of a community center, on-site parking facilities and a resident garden. Additionally, the project would include an emergency backup generator up to 200 kilowatts in size which would be located near the community building. The generator is assumed to only be operated for testing and maintenance purposes. The Modified Original design scheme was evaluated. In addition, there are alternatives that were also evaluated in this report. However, both would result in similar air quality impacts since they construct the same number of residences and would involve similar construction activity.

Setting

The project is located in Santa Rosa, which is in the part of Sonoma County within the San Francisco Bay Area Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[3] The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: June 9, 2015.
[3] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest sensitive receptors include single family residences adjacent to the eastern boundary and southern boundary of the project site. Other receptors are located further away (see *Figure 1*).

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1.

Table 1. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	>10 per one million		
Chronic or Acute Hazard Index	>1.0		
Incremental annual average $PM_{2.5}$	>0.3 µg/m^3		
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	>100 per one million		
Chronic Hazard Index	>10.0		
Annual Average $PM_{2.5}$	>0.8 µg/m^3		
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, and $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.			

Impacts and Project Measures

Impact: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less-than-significant with construction period control measures.***

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These

thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Due to the project size, construction- and operational-period emissions would be less-than-significant. In the 2017 update to the CEQA Air Quality Guidelines, BAAQMD identifies screening criteria for the sizes of land use projects that could result in significant air pollutant emissions. For operational impacts, the screening project size is identified at 657 dwelling units. For construction impacts, the screening size is identified as 240 dwelling units. Congregate care projects of smaller size would be expected to have less-than-significant impacts. Since the project proposes to develop up to 32 dwelling units, it is concluded that emissions would be below the BAAQMD significance thresholds.

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are employed to reduce these emissions. *Mitigation Measure 1 would implement BAAQMD-required best management practices*.

Mitigation Measure 1: **Include basic measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

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

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

3. 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.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

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

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 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.

7. 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.

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

Impact: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less-than-significant.***

As discussed above, the project would have emissions less than the BAAQMD screening size for evaluating impacts related to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. The highest measured level over any 8-hour averaging period during the last 3 years in the Bay Area is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[4]

Impact: Expose sensitive receptors to substantial pollutant concentrations? ***Less-than-significant.***

Project impacts related to increased community risk can occur either by the project producing emissions of TACs or by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs. The BAAQMD recommends using a 1,000-foot

[4] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections with more than 44,000 vehicles per hour.

screening radius around a project site for purposes of addressing community health risk from sources of TACs . The project includes two sources of TAC emissions: (1) construction activity and (2) infrequent operation of an emergency generator powered by a diesel engine. The project would introduce new sensitive receptors to the area in the form of future residences. There are thresholds that address both the impact of single and cumulative TAC sources upon projects that include new sensitive receptors (see Table 1). Construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$.[5] The closest sensitive receptors are single family residences to the east. Additional residences are located to the east, west, and north of the project site (see *Figure 1*). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to predict annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The proposed project land uses were input into CalEEMod, which included 32 dwelling units entered as "Apartment-Low Rise," with 75,697 total square footage (includes clubhouse and amenities), 40 spaces entered as "Enclosed Parking Structure", and 32 spaces entered as "Parking Lot" on a 7.31-acre site. A project specific construction schedule and equipment information provided by the applicant was entered into the model. There would be minor off-site improvements that were not included in the construction emissions modeling. This off-site activity would have limited use of diesel construction equipment. As a result, these emissions would be negligible compared to the computed on-site emissions.

On-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site for predicting cancer risk levels near the project site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site.

[5] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.0422 tons (84 pounds). Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.0032 tons (7 pounds) for the overall construction period. *Attachment 2* includes the CalEEMod input and output values for construction emissions.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at existing sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[6] The AERMOD modeling utilized four area sources to represent the on-site construction emissions, two for DPM exhaust emissions and two for fugitive $PM_{2.5}$ dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes and buoyancy of the exhaust plume. For modeling fugitive $PM_{2.5}$ emissions, a near ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from vehicle travel around the project site were included in the modeled area sources. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction activity would occur.

Since terrain surrounding the project site is complex, the model incorporated terrain elevation based on USGS DEM data (7.5-minute format). Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.8 feet) above ground elevation were used to represent the breathing heights of residents on first and second floor levels of nearby residences, apartments, and townhomes.

The modeling used a five-year data set (2009-2013) of hourly meteorological data from the Sonoma County Airport prepared for use with the AERMOD model by the CARB. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2021-2022 period were calculated using the model.

DPM and fugitive $PM_{2.5}$ concentrations were computed by the model at nearby residential locations. The maximum-modeled DPM and $PM_{2.5}$ concentration and cancer risk were found to occur at the first-floor level of a residence northwest of the project site. *Figure 1* shows the construction area modeled, and locations of nearby residential receptors, and the maximally exposed individual (MEI).

Predicted Cancer Risk and Hazards

Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using the BAAQMD-recommended risk assessment methods described in *Attachment 1*. Due to the short duration of project construction activities anticipated (about one and a half years), infant exposures were assumed in calculating cancer risks for residential

[6] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

exposures. Because an infant (0 to 2 years of age) has a breathing rate that is greater than the breathing rate for the 3rd trimester the contribution to total cancer risk from an infant exposure is greater than if the initial exposure assumed for the 3rd trimester is assumed. It was conservatively assumed that an infant exposure to construction emissions would occur over the entire construction period.

Results of this assessment are included in Table 2, which show the maximum increased residential cancer risks would be 7.2 chances in one million, assuming infant exposure and less for child or adult exposures. The location of the receptor with the maximum increased cancer risk is shown in Figure 1. The maximum modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.04 $\mu g/m^3$ and was found to occur at the same location where maximum cancer risk would occur. The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.04 $\mu g/m^3$. The maximum computed HI based on this DPM concentration is less than 0.01, which is lower than the BAAQMD significance criterion of a HI greater than 1.0. The detailed health risk calculations can be found in *Attachment 3.*

Table 2. Combined Construction Source Cancer Risks, $PM_{2.5}$ Concentrations, and Hazard Index at Location of Maximum Impact

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Acute or Chronic Hazard Index
Project Sources			
Unmitigated Project Construction (Years 0-2)	7.2 (infant)	0.04	<0.01
Emergency Generator (years 3 through 30)	0.2	<0.01	<0.01
Combined Construction & Generator	7.4	0.04	0.01
BAAQMD Single Source Threshold	>10.0	>0.3	>1.0
Cumulative Sources			
Highway 12, Link 611 (6ft elevation) at 50 feet north (*Highway Screening Analysis Tool*)	15.3	0.14	<0.02
Cumulative (project plus nearby sources)	22.7	0.18	<0.03
BAAQMD Cumulative Source Threshold	*100.0*	*0.80*	*10.0*
Significant?	***No***	***No***	***No***

Figure 1. Project Construction Site, Locations of Off-Site Sensitive Receptors and Maximum Impact

Project Emergency Generator Testing and Maintenance

The project would generate some traffic, but not at a level to be a concern for community risk impacts. The only potential source of air pollutants and TACs identified with build-out of the project is from the emergency generator that would be powered by a diesel engine. This generator would only operate for testing and maintenance purposes and to generate electricity in the event of an outage. There would be a maximum limit of 50 hours per year of non-emergency operation under normal conditions allowed by BAAQMD. During testing periods, the engine would typically be run for less than one hour per day. The engine would be required to meet CARB and U.S. EPA emission standards. These diesel engines consume commercially available California low-sulfur diesel fuel.

This diesel engine would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the BAAQMD, since it will be equipped with an engine larger than 50 hp. As part of the BAAQMD permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (TBACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by BAAQMD. Depending on results, BAAQMD would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

Emissions from the testing and maintenance of the proposed generator engine were calculated for a 200-kilowatt or 268-horsepower diesel engine. Assuming 50 hours of operation for testing and maintenance purposes, exhaust $PM_{2.5}$ emissions would be 3.28 pounds annually.[7]

The community risk impacts associated with the routine testing and maintenance of the emergency standby generator were computed for off-site sensitive receptors also using the same prediction methodology used to compute on-site impacts was utilized, which involved use of the AERMOD dispersion model. The closest off-site sensitive receptor to the project site would be greater than 200 feet away. The modeling assumed that there would be infants present at off-site receptors, so age-sensitivity factors and new Office of Environmental Health Hazard Assessment (OEHHA) guidance, described in *Attachment 1*, were applied. The detailed health risk calculations can be found in *Attachment 3.* Results of this assessment are also shown in Table 2 with the modeled generator location shown in Figure 1.

Cumulative Risks

Cumulative risks were also computed. A review of the BAAQMD Google Earth screening analysis tools only identified Highway 12 near the project MEI for construction and generator operation. The construction MEI is located about just north of Highway 12, Link 611. The *Highway Risk Screening Analysis Tool* was used to identify screening levels risk impacts and screening cancer risk levels were adjusted using a factor of 1.3744 to account for new OEHHA guidance. These values were added to the predicted maximum construction and generator impacts and are also reported in Table 2. There may be some other minor construction projects in the vicinity of the project, but their contribution is considered to be small given the setback distances and lack of large diesel equipment use. For example, minor modifications are planned along Los Alamos Road (i.e., landscaping and pedestrian path construction) and along Montgomery (i.e. roadway stripping). These activities would not involve much use of diesel equipment, and therefore, would have negligible impacts to construction health risk. Cancer risk, assuming infant exposure, annual $PM_{2.5}$ concentrations and non-cancer hazards would not exceed the significance thresholds for combined source exposures.

[7] Emission factors from U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors , Fifth Edition, Section 3.4, Table 3.4-1. PM_{10} and $PM_{2.5}$ assumed to meet CARB ATCM standards diesel IC engines > 50HP of 0.15 g/bhp-hr.

Project Sensitive Receptor Community Risk Exposure

The project would introduce new sensitive receptors to the site, in the form of adults. Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site. These sources include freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of BAAQMD's *Highway Screening Analysis* Tool indicated that the impact of Highway 12 traffic on the project site receptors would be less-than-significant. Hence, refined modeling was not needed. BAAQMD provides a *Highway Screening Analysis* Google Earth Map tool to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cancer risk, hazard and $PM_{2.5}$ impacts at various distances from the highway are estimated for different segments of the highways. The tool uses the average annual daily traffic (AADT) counts, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from Highway 12 Link 611 (6ft elevation), which is about 85 feet north of the project's closest residential dwellings, was used to identify community risk impacts.

There are no other busy roadways near the site. Review of BAAQMD's stationary source screening tool did not reveal any permitted stationary sources of TAC that could have a significant impact on the project site or nearby sensitive receptors. The project would include the emergency generator that would be a source of TACs, as described above. The effect of this source was evaluated for on-site residences. The results of this analysis are reported in Table 3.

Table 3. TAC Sources Affecting Project Sensitive Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Acute or Chronic Hazard Index
Highway 12, Link 611 (6-ft elevation) at 75 feet from edge of highway	<4.3	0.05	0.02
Project Emergency Generator	0.1 (adult exposure)	<0.01	<0.01
BAAQMD Single Source Threshold	>10.0	>0.3	>1.0
Cumulative Total	4.4	0.05	0.02
BAAQMD Cumulative Source Threshold	*100.0*	*0.80*	*10.0*
Significant?	***No***	***No***	***No***

Conclusion for Community Risk Impacts

Cancer risk and annual $PM_{2.5}$ concentrations caused by project construction activities would not exceed the single-source significance threshold at the residence with the maximum impact, or MEI. The impacts from routine testing and maintenance of the standby emergency generator with diesel engine would not exceed the single-source significance threshold at the residence with the maximum impact, assumed to be 200 feet or further away (sensitive receptor exposure). The combination of construction activities with exposure to Highway 12 traffic and generator emissions would have cumulative risk, hazards, and annual $PM_{2.5}$ concentrations below the

significance thresholds. This impact is predicted at the receptor that has the greatest impact from the project. Therefore, the impact from construction would be considered less-than-significant.

Project Alternatives

The project design team has developed alternative plans in an effort to avoid suspected cultural resources at the southern portion of the project site. Under these scenarios, the amount of development and construction activity would be similar to the project design evaluated in this report. However, the footprint of construction activity would change, and it is assumed that residences at 5815 and 5803 Melita Drive would remain as sensitive receptors that could be affected by the project. Therefore, air quality impacts from construction and generator operation (i.e., routine testing and maintenance) were evaluated with these scenarios. Maximum impacts would be the same as for the proposed project (based on the *Modified Original Scheme*).

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[8] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[9] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[10] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[8] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[9] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[10] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^{6}$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Output Worksheet, and Health Risk Calculations

Construction Schedule

Project Name:	SPRING LAKE VILLAGE EAST GROVE - MODIFIED ORIGINAL SCHEME						
	See attached Equipment Type TAB for type, horsepower and load factor						
	Project Size	**32**	**Dwelling Units**	**7.31**	**total project acres disturbed**		**For Onsite Improvements ONLY**
		71,162	**s.f. residential**	not including porches			**18 Month Schedule**
		0	**s.f. retail**	none			
		0	**s.f. office/commercial**	none			
		4,535	**s.f. other, specify:**	main club house, shower building, generator bldg, landscape shed, garden shed			
		5,200	**s.f. parking garage**	**40**	**spaces**	40 garage spaces in 20 cottages -130 sf per space	
		7,500	**s.f. parking lot**	**32**	**spaces**	32 spaces for the villa building per C2.0 dated 7/21/16	
	Construction Hours	**8**	**am to**	**5**	**pm**	Monday - Friday	

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
								Overall Import/Export Volumes
	DEMOLITION/CLEARING	**Start Date:**	**May 2019**	**Total phase:**	**10**			Note that Construction start date adjusted to Jan 1. 2021
		End Date:	**May 2019**					**Demolition:**
1	Excavators	162	.38	7	10	7	70	House/Fnd - 712 cubic yards
1	Tractors/Loaders/Backhoes	97	.37	7	10	7	70	Deck - 27 cubic yards
1	Other Construction Equipment	171	.42	7	10	7	70	Out Buildings (2) - 280 cubic yards
								Carport - 9 cubic yards
	TREE REMOVAL	**Start Date:**	**May 2019**	**Total phase:**	**10**			Sheds (3) - 110 cubic yards
		End Date:	**May 2019**					Pool/Tile - 45 cubic yards
1	Brush Chipper	90	0.8	7	10	7	70	Pool/Deck - 30 cubic yards
1	Cranes	226	0.29	4	10	4	40	AC Pavement - 60 cubic yards
1	Excavators	162	0.38	4	10	4	40	Gravel Drive - 150 cubic yards
1	Other Construction Equipment	171	0.42	7	10	7	70	Vegetation - Included above
	SITE PREPARATION	**Start Date:**	**May 2019**	**Total phase:**	**5**			
		End Date:	**May 2019**					
1	Graders	174	0.41	7	5	7	35	
1	Scrapers	361	0.48	7	5	7	35	
1	Tractors/Loaders/Backhoes	97	0.37	7	5	7	35	
	GRADING/EXCAVATION	**Start Date:**	**May 2019**	**Total phase:**	**15**			
		End Date:	**June 2019**					**Soil Hauling Volume**
1	Graders	174	0.41	7	15	7	105	Cut Volume = **9,800** cubic yards
1	Scrapers	361	0.48	7	15	7	105	Fill Volume = **9,800** cubic yards
1	Tractors/Loaders/Backhoes	97	0.37	7	15	7	105	Soil Hauling Volume = 0 cubic yards
1	Water Truck	400	0.4	4	15	4	60	
1	Other Construction Equipment	171	0.42	7	15	7	105	
1	Rollers	80	0.38	7	15	7	105	

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
	TRENCHING/UTILITIES	**Start Date:**	**June 2019**	**Total phase:**	**15**			
		End Date:	**June 2019**					
1	Trenchers	80	0.5	7	15	7	105	Site Concrete: 85 Round Trips
1	Tractors/Loaders/Backhoes	97	0.37	7	15	7	105	Building Concrete: 103 Round Trips
1	Excavators	162	0.38	7	15	7	105	
1	Plate Compactors	8	0.43	7	15	7	105	
1	Other Construction Equipment	171	0.42	7	15	7	105	
	BUILDING - EXTERIOR/	**Start Date:**	**July 2019**	**Total phase:**	**215**			
	CONCRETE/FRAMING/TRIM	**End Date:**	**May 2020**					
1	Forklifts	89	0.2	6	100	2.7906977	600	**Cranes:** If required, assume diesel
1	Cranes	226	0.29	4	25	0.4651163	100	**Forklifts:** If required, assume gasoline
1	Air Compressors	78	0.8	4	100	1.8604651	400	**Generator Sets:** If required, assume diesel
1	Other Construction Equipment	171	0.42	4	100	1.8604651	400	* Will utilize Temporary Line Power
1	Tractors/Loaders/Backhoes	97	0.37	4	75	1.3953488	300	**Aerial Lift:** If required, assume electric
1	Welders	46	0.45	6	30	0.8372093	180	
	BUILDING - INT/FINISHES	**Start Date:**	**May 2020**	**Total phase:**	**180**			
		End Date:	**October 2020**					
1	Air Compressors	78	0.48	6	20	0.6666667	120	
1	Other Construction Equipment	171	0.42	4	90	2	360	
	AC PAVING	**Start Date:**	**May 2020**	**Total phase:**	**20**			
		End Date:	**June 2020**					
1	Pavers	125	0.42	7	10	3.5	70	
1	Paving Equipment	130	0.36	7	10	3.5	70	**Aggregate Base: 2,000 CY Asphalt: 37,630 SF**
1	Rollers	8	0.38	7	10	3.5	70	
1	Other Construction Equipment	171	0.42	7	10	3.5	70	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horepower or load factor, as appropriate

July 28, 2017

Spring Lake Village East Grove - Modified Scheme

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	40.00	Space	0.00	5,200.00	0
Parking Lot	32.00	Space	0.00	7,500.00	0
Apartments Low Rise	32.00	Dwelling Unit	7.31	75,697.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate

Land Use - added club house and other buildings to residential square footages = 75,697sf

Construction Phase - Based on provided construction equipment with start 2021

Off-road Equipment - Based on construction worksheet

Off-road Equipment - Based on construciton worksheet

Off-road Equipment - Based on construction worksheet

Off-road Equipment - Based on construciton worksheet

Off-road Equipment - Based on construciton worksheet. Water trucks modeled as on-road trucks

Off-road Equipment - Based on construciton worksheet

Off-road Equipment - Based on construction worksheet

Off-road Equipment - Based on construction worksheet

Trips and VMT - Added demo trips, cement = 1,960, asphalt/baserock = 539 All trips at 1 mile to reflect on and near site travel

Grading - moving material on-site

Demolition - Computed in trips/vmt assuming 1423 cy of material removal at 15cy/load*2 trips = 190 trips

Vehicle Trips - TIA trip rates

Water And Wastewater - WTP treatment only

Construction Off-road Equipment Mitigation - BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	230.00	215.00
tblConstructionPhase	NumDays	20.00	180.00
tblGrading	MaterialExported	0.00	9,800.00
tblGrading	MaterialImported	0.00	9,800.00
tblLandUse	LandUseSquareFeet	16,000.00	5,200.00
tblLandUse	LandUseSquareFeet	12,800.00	7,500.00
tblLandUse	LandUseSquareFeet	32,000.00	75,697.00
tblLandUse	LotAcreage	0.36	0.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	2.00	7.31
tblOffRoadEquipment	HorsePower	81.00	90.00
tblOffRoadEquipment	LoadFactor	0.73	0.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.70
tblOffRoadEquipment	UsageHours	7.00	0.50
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	2.80
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	3.50
tblOffRoadEquipment	UsageHours	8.00	3.50
tblOffRoadEquipment	UsageHours	8.00	3.50
tblOffRoadEquipment	UsageHours	7.00	1.40
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.90
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00

tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	190.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,960.00
tblTripsAndVMT	HaulingTripNumber	0.00	539.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	15.00
tblVehicleTrips	ST_TR	7.16	2.50
tblVehicleTrips	SU_TR	6.07	2.50
tblVehicleTrips	WD_TR	6.59	2.50
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0784	0.9399	0.6697	1.3400e-003	0.0200	0.0347	0.0547	3.0400e-003	0.0323	0.0354	0.0000	119.7443	119.7443	0.0293	0.0000	120.4761
2022	0.5515	0.1675	0.1677	2.8000e-004	7.0000e-004	7.4800e-003	8.1800e-003	1.9000e-004	6.9500e-003	7.1400e-003	0.0000	25.1873	25.1873	6.8000e-003	0.0000	25.3573
Maximum	**0.5515**	**0.9399**	**0.6697**	**1.3400e-003**	**0.0200**	**0.0347**	**0.0547**	**3.0400e-003**	**0.0323**	**0.0354**	**0.0000**	**119.7443**	**119.7443**	**0.0293**	**0.0000**	**120.4761**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0784	0.9399	0.6697	1.3400e-003	0.0118	0.0347	0.0465	1.7400e-003	0.0323	0.0341	0.0000	119.7442	119.7442	0.0293	0.0000	120.4760

2022	0.5515	0.1675	0.1677	2.8000e-004	7.0000e-004	7.4800e-003	8.1800e-003	1.9000e-004	6.9500e-003	7.1400e-003	0.0000	25.1873	25.1873	6.8000e-003	0.0000	25.3572
Maximum	**0.5515**	**0.9399**	**0.6697**	**1.3400e-003**	**0.0118**	**0.0347**	**0.0465**	**1.7400e-003**	**0.0323**	**0.0341**	**0.0000**	**119.7442**	**119.7442**	**0.0293**	**0.0000**	**120.4760**

	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	**0.00**	**0.00**	**0.00**	**0.00**	**39.88**	**0.00**	**13.13**	**40.25**	**0.00**	**3.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2021**	**3-31-2021**	0.5796	0.5796
2	**4-1-2021**	**6-30-2021**	0.1448	0.1448
3	**7-1-2021**	**9-30-2021**	0.1464	0.1464
4	**10-1-2021**	**12-31-2021**	0.1342	0.1342
5	**1-1-2022**	**3-31-2022**	0.3022	0.3022
6	**4-1-2022**	**6-30-2022**	0.2340	0.2340
7	**7-1-2022**	**9-30-2022**	0.1825	0.1825
		Highest	0.5796	0.5796

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	0.4311	4.4400e-003	0.3400	2.1000e-004		0.0159	0.0159		0.0159	0.0159	1.4589	0.9886	2.4475	2.7200e-003	1.0000e-004	2.5441
Energy	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	40.0752	40.0752	2.6000e-003	7.9000e-004	40.3750
Mobile	0.0221	0.1070	0.2447	8.2000e-004	0.0685	7.2000e-004	0.0693	0.0184	6.7000e-004	0.0191	0.0000	75.2801	75.2801	3.0300e-003	0.0000	75.3559
Waste						0.0000	0.0000		0.0000	0.0000	2.9880	0.0000	2.9880	0.1766	0.0000	7.4027
Water						0.0000	0.0000		0.0000	0.0000	0.7377	2.0892	2.8268	2.7500e-003	1.6500e-003	3.3864

Total	**0.4550**	**0.1265**	**0.5911**	**1.1300e-003**	**0.0685**	**0.0178**	**0.0863**	**0.0184**	**0.0177**	**0.0362**	**5.1846**	**118.4331**	**123.6177**	**0.1877**	**2.5400e-003**	**129.0641**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4311	4.4400e-003	0.3400	2.1000e-004		0.0159	0.0159		0.0159	0.0159	1.4589	0.9886	2.4475	2.7200e-003	1.0000e-004	2.5441
Energy	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	40.0752	40.0752	2.6000e-003	7.9000e-004	40.3750
Mobile	0.0221	0.1070	0.2447	8.2000e-004	0.0685	7.2000e-004	0.0693	0.0184	6.7000e-004	0.0191	0.0000	75.2801	75.2801	3.0300e-003	0.0000	75.3559
Waste						0.0000	0.0000		0.0000	0.0000	2.9880	0.0000	2.9880	0.1766	0.0000	7.4027
Water						0.0000	0.0000		0.0000	0.0000	0.7377	2.0892	2.8268	2.7500e-003	1.6500e-003	3.3864
Total	**0.4550**	**0.1265**	**0.5911**	**1.1300e-003**	**0.0685**	**0.0178**	**0.0863**	**0.0184**	**0.0177**	**0.0362**	**5.1846**	**118.4331**	**123.6177**	**0.1877**	**2.5400e-003**	**129.0641**

	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	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2021	1/14/2021	5	10	
2	Tree Removal	Site Preparation	1/1/2021	1/14/2021	5	10	
3	Site Preperation	Site Preparation	1/15/2021	1/21/2021	5	5	
4	Grading	Grading	1/15/2021	2/4/2021	5	15	
5	Trenching/utilities	Trenching	2/1/2021	2/19/2021	5	15	

6	Building Construction	Building Construction	3/1/2021	12/24/2021	5	215	
7	AC Paving	Paving	1/1/2022	1/28/2022	5	20	
8	Building Interior	Architectural Coating	1/1/2022	9/9/2022	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 19.69

Acres of Paving: 0

Residential Indoor: 153,286; Residential Outdoor: 51,095; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	1	7.00	158	0.38
Demolition	Other Construction Equipment	1	7.00	172	0.42
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preperation	Graders	1	7.00	187	0.41
Site Preperation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preperation	Scrapers	1	7.00	367	0.48
Site Preperation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preperation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	1	7.00	187	0.41
Grading	Off-Highway Trucks	0	4.00	402	0.38
Grading	Other Construction Equipment	1	7.00	172	0.42
Grading	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	1	7.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Air Compressors	1	1.90	78	0.48

Building Construction	Cranes	1	0.50	231	0.29
Building Construction	Forklifts	1	2.80	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Other Construction Equipment	1	1.90	172	0.42
Building Construction	Tractors/Loaders/Backhoes	1	1.40	97	0.37
Building Construction	Welders	1	0.90	46	0.45
AC Paving	Other Construction Equipment	1	3.50	172	0.42
AC Paving	Pavers	1	3.50	130	0.42
AC Paving	Paving Equipment	1	3.50	132	0.36
AC Paving	Rollers	1	3.50	80	0.38
Building Interior	Air Compressors	1	0.70	78	0.48
Building Interior	Other Construction Equipment	1	2.00	172	0.42
Tree Removal	Concrete/Industrial Saws	1	7.00	90	0.80
Tree Removal	Cranes	1	4.00	231	0.29
Tree Removal	Excavators	1	4.00	158	0.38
Tree Removal	Other Construction Equipment	1	7.00	172	0.42
Tree Removal	Rubber Tired Dozers	0	8.00	247	0.40
Tree Removal	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching/utilities	Excavators	1	7.00	158	0.38
Trenching/utilities	Other Construction Equipment	1	7.00	172	0.42
Trenching/utilities	Plate Compactors	1	7.00	8	0.43
Trenching/utilities	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trenching/utilities	Trenchers	1	7.00	78	0.50

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	3	8.00	0.00	190.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preperation	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	5	15.00	0.00	2,450.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

Building Construction	6	28.00	6.00	1,960.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
AC Paving	4	10.00	0.00	539.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Interior	2	6.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Tree Removal	4	10.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching/utilities	5	13.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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	3.6600e-003	0.0369	0.0419	6.0000e-005		1.9500e-003	1.9500e-003		1.7900e-003	1.7900e-003	0.0000	5.5550	5.5550	1.8000e-003	0.0000	5.5999
Total	**3.6600e-003**	**0.0369**	**0.0419**	**6.0000e-005**		**1.9500e-003**	**1.9500e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**5.5550**	**5.5550**	**1.8000e-003**	**0.0000**	**5.5999**

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	1.8000e-004	9.3300e-003	1.4400e-003	1.0000e-005	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	1.0747	1.0747	1.7000e-004	0.0000	1.0788
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	3.0000e-005	3.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0332	0.0332	0.0000	0.0000	0.0333
Total	**2.4000e-004**	**9.3600e-003**	**1.7900e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.1079**	**1.1079**	**1.7000e-004**	**0.0000**	**1.1120**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6600e-003	0.0369	0.0419	6.0000e-005		1.9500e-003	1.9500e-003		1.7900e-003	1.7900e-003	0.0000	5.5550	5.5550	1.8000e-003	0.0000	5.5999
Total	**3.6600e-003**	**0.0369**	**0.0419**	**6.0000e-005**		**1.9500e-003**	**1.9500e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**5.5550**	**5.5550**	**1.8000e-003**	**0.0000**	**5.5999**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	9.3300e-003	1.4400e-003	1.0000e-005	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	1.0747	1.0747	1.7000e-004	0.0000	1.0788
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	3.0000e-005	3.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0332	0.0332	0.0000	0.0000	0.0333

Total	**2.4000e-004**	**9.3600e-003**	**1.7900e-003**	**1.0000e-005**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**1.1079**	**1.1079**	**1.7000e-004**	**0.0000**	**1.1120**

3.3 Tree Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4900e-003	0.0529	0.0505	9.0000e-005		2.6800e-003	2.6800e-003		2.5400e-003	2.5400e-003	0.0000	7.6414	7.6414	1.7100e-003	0.0000	7.6841
Total	**5.4900e-003**	**0.0529**	**0.0505**	**9.0000e-005**	**0.0000**	**2.6800e-003**	**2.6800e-003**	**0.0000**	**2.5400e-003**	**2.5400e-003**	**0.0000**	**7.6414**	**7.6414**	**1.7100e-003**	**0.0000**	**7.6841**

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	7.0000e-005	3.0000e-005	4.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0415	0.0415	0.0000	0.0000	0.0416
Total	**7.0000e-005**	**3.0000e-005**	**4.4000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0415**	**0.0415**	**0.0000**	**0.0000**	**0.0416**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4900e-003	0.0529	0.0505	9.0000e-005		2.6800e-003	2.6800e-003		2.5400e-003	2.5400e-003	0.0000	7.6413	7.6413	1.7100e-003	0.0000	7.6841
Total	**5.4900e-003**	**0.0529**	**0.0505**	**9.0000e-005**	**0.0000**	**2.6800e-003**	**2.6800e-003**	**0.0000**	**2.5400e-003**	**2.5400e-003**	**0.0000**	**7.6413**	**7.6413**	**1.7100e-003**	**0.0000**	**7.6841**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	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	7.0000e-005	3.0000e-005	4.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0415	0.0415	0.0000	0.0000	0.0416
Total	**7.0000e-005**	**3.0000e-005**	**4.4000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0415**	**0.0415**	**0.0000**	**0.0000**	**0.0416**

3.4 Site Preperation - 2021

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					3.4800e-003	0.0000	3.4800e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0405	0.0241	5.0000e-005		1.5700e-003	1.5700e-003		1.4400e-003	1.4400e-003	0.0000	4.7836	4.7836	1.5500e-003	0.0000	4.8222
Total	**3.4300e-003**	**0.0405**	**0.0241**	**5.0000e-005**	**3.4800e-003**	**1.5700e-003**	**5.0500e-003**	**3.8000e-004**	**1.4400e-003**	**1.8200e-003**	**0.0000**	**4.7836**	**4.7836**	**1.5500e-003**	**0.0000**	**4.8222**

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	1.0000e-005	1.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0166	0.0166	0.0000	0.0000	0.0166
Total	**3.0000e-005**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0166**	**0.0166**	**0.0000**	**0.0000**	**0.0166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0405	0.0241	5.0000e-005		1.5700e-003	1.5700e-003		1.4400e-003	1.4400e-003	0.0000	4.7835	4.7835	1.5500e-003	0.0000	4.8222
Total	**3.4300e-003**	**0.0405**	**0.0241**	**5.0000e-005**	**1.5700e-003**	**1.5700e-003**	**3.1400e-003**	**8.0000e-005**	**1.4400e-003**	**1.5200e-003**	**0.0000**	**4.7835**	**4.7835**	**1.5500e-003**	**0.0000**	**4.8222**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	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	1.0000e-005	1.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0166	0.0166	0.0000	0.0000	0.0166
Total	**3.0000e-005**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0166**	**0.0166**	**0.0000**	**0.0000**	**0.0166**

3.5 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0116	0.0000	0.0116	1.3000e-003	0.0000	1.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1629	0.1114	2.2000e-004		6.9700e-003	6.9700e-003		6.4200e-003	6.4200e-003	0.0000	19.4266	19.4266	6.2800e-003	0.0000	19.5837
Total	**0.0143**	**0.1629**	**0.1114**	**2.2000e-004**	**0.0116**	**6.9700e-003**	**0.0185**	**1.3000e-003**	**6.4200e-003**	**7.7200e-003**	**0.0000**	**19.4266**	**19.4266**	**6.2800e-003**	**0.0000**	**19.5837**

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	2.3000e-003	0.1203	0.0186	1.4000e-004	1.0400e-003	1.4000e-004	1.1800e-003	2.9000e-004	1.3000e-004	4.2000e-004	0.0000	13.8573	13.8573	2.1400e-003	0.0000	13.9108
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	1.7000e-004	7.0000e-005	9.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0934	0.0934	1.0000e-005	0.0000	0.0935
Total	**2.4700e-003**	**0.1204**	**0.0195**	**1.4000e-004**	**1.1200e-003**	**1.4000e-004**	**1.2600e-003**	**3.1000e-004**	**1.3000e-004**	**4.4000e-004**	**0.0000**	**13.9507**	**13.9507**	**2.1500e-003**	**0.0000**	**14.0043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.2000e-003	0.0000	5.2000e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1629	0.1114	2.2000e-004		6.9700e-003	6.9700e-003		6.4200e-003	6.4200e-003	0.0000	19.4266	19.4266	6.2800e-003	0.0000	19.5836
Total	**0.0143**	**0.1629**	**0.1114**	**2.2000e-004**	**5.2000e-003**	**6.9700e-003**	**0.0122**	**2.9000e-004**	**6.4200e-003**	**6.7100e-003**	**0.0000**	**19.4266**	**19.4266**	**6.2800e-003**	**0.0000**	**19.5836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-003	0.1203	0.0186	1.4000e-004	1.0400e-003	1.4000e-004	1.1800e-003	2.9000e-004	1.3000e-004	4.2000e-004	0.0000	13.8573	13.8573	2.1400e-003	0.0000	13.9108
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	1.7000e-004	7.0000e-005	9.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0934	0.0934	1.0000e-005	0.0000	0.0935

Total	**2.4700e-003**	**0.1204**	**0.0195**	**1.4000e-004**	**1.1200e-003**	**1.4000e-004**	**1.2600e-003**	**3.1000e-004**	**1.3000e-004**	**4.4000e-004**	**0.0000**	**13.9507**	**13.9507**	**2.1500e-003**	**0.0000**	**14.0043**

3.6 Trenching/utilities - 2021

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	8.2600e-003	0.0800	0.0814	1.2000e-004		4.6600e-003	4.6600e-003		4.2900e-003	4.2900e-003	0.0000	10.4841	10.4841	3.3500e-003	0.0000	10.5677
Total	**8.2600e-003**	**0.0800**	**0.0814**	**1.2000e-004**		**4.6600e-003**	**4.6600e-003**		**4.2900e-003**	**4.2900e-003**	**0.0000**	**10.4841**	**10.4841**	**3.3500e-003**	**0.0000**	**10.5677**

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	1.4000e-004	6.0000e-005	8.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0811
Total	**1.4000e-004**	**6.0000e-005**	**8.5000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0809**	**0.0809**	**0.0000**	**0.0000**	**0.0811**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2600e-003	0.0800	0.0814	1.2000e-004		4.6600e-003	4.6600e-003		4.2900e-003	4.2900e-003	0.0000	10.4840	10.4840	3.3500e-003	0.0000	10.5677
Total	**8.2600e-003**	**0.0800**	**0.0814**	**1.2000e-004**		**4.6600e-003**	**4.6600e-003**		**4.2900e-003**	**4.2900e-003**	**0.0000**	**10.4840**	**10.4840**	**3.3500e-003**	**0.0000**	**10.5677**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	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	1.4000e-004	6.0000e-005	8.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0809	0.0809	0.0000	0.0000	0.0811
Total	**1.4000e-004**	**6.0000e-005**	**8.5000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0809**	**0.0809**	**0.0000**	**0.0000**	**0.0811**

3.7 Building Construction - 2021

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	0.0330	0.2947	0.2860	4.4000e-004		0.0165	0.0165		0.0155	0.0155	0.0000	38.4244	38.4244	9.7700e-003	0.0000	38.6687
Total	**0.0330**	**0.2947**	**0.2860**	**4.4000e-004**		**0.0165**	**0.0165**		**0.0155**	**0.0155**	**0.0000**	**38.4244**	**38.4244**	**9.7700e-003**	**0.0000**	**38.6687**

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	1.8400e-003	0.0963	0.0148	1.1000e-004	8.3000e-004	1.1000e-004	9.4000e-004	2.3000e-004	1.1000e-004	3.4000e-004	0.0000	11.0858	11.0858	1.7100e-003	0.0000	11.1286
Vendor	1.0300e-003	0.0439	0.0105	5.0000e-005	5.9000e-004	5.0000e-005	6.3000e-004	1.7000e-004	4.0000e-005	2.2000e-004	0.0000	4.6476	4.6476	6.4000e-004	0.0000	4.6635
Worker	4.4800e-003	1.9900e-003	0.0263	3.0000e-005	2.2100e-003	4.0000e-005	2.2500e-003	5.9000e-004	3.0000e-005	6.3000e-004	0.0000	2.4985	2.4985	1.5000e-004	0.0000	2.5022
Total	**7.3500e-003**	**0.1422**	**0.0516**	**1.9000e-004**	**3.6300e-003**	**2.0000e-004**	**3.8200e-003**	**9.9000e-004**	**1.8000e-004**	**1.1900e-003**	**0.0000**	**18.2319**	**18.2319**	**2.5000e-003**	**0.0000**	**18.2943**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0330	0.2947	0.2860	4.4000e-004		0.0165	0.0165		0.0155	0.0155	0.0000	38.4243	38.4243	9.7700e-003	0.0000	38.6686
Total	**0.0330**	**0.2947**	**0.2860**	**4.4000e-004**		**0.0165**	**0.0165**		**0.0155**	**0.0155**	**0.0000**	**38.4243**	**38.4243**	**9.7700e-003**	**0.0000**	**38.6686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8400e-003	0.0963	0.0148	1.1000e-004	8.3000e-004	1.1000e-004	9.4000e-004	2.3000e-004	1.1000e-004	3.4000e-004	0.0000	11.0858	11.0858	1.7100e-003	0.0000	11.1286
Vendor	1.0300e-003	0.0439	0.0105	5.0000e-005	5.9000e-004	5.0000e-005	6.3000e-004	1.7000e-004	4.0000e-005	2.2000e-004	0.0000	4.6476	4.6476	6.4000e-004	0.0000	4.6635
Worker	4.4800e-003	1.9900e-003	0.0263	3.0000e-005	2.2100e-003	4.0000e-005	2.2500e-003	5.9000e-004	3.0000e-005	6.3000e-004	0.0000	2.4985	2.4985	1.5000e-004	0.0000	2.5022
Total	**7.3500e-003**	**0.1422**	**0.0516**	**1.9000e-004**	**3.6300e-003**	**2.0000e-004**	**3.8200e-003**	**9.9000e-004**	**1.8000e-004**	**1.1900e-003**	**0.0000**	**18.2319**	**18.2319**	**2.5000e-003**	**0.0000**	**18.2943**

3.8 AC Paving - 2022

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	4.0600e-003	0.0410	0.0495	8.0000e-005		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	6.7558	6.7558	2.1800e-003	0.0000	6.8104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.0600e-003**	**0.0410**	**0.0495**	**8.0000e-005**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**6.7558**	**6.7558**	**2.1800e-003**	**0.0000**	**6.8104**

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	4.7000e-004	0.0255	3.7400e-003	3.0000e-005	2.3000e-004	3.0000e-005	2.6000e-004	6.0000e-005	3.0000e-005	9.0000e-005	0.0000	3.0254	3.0254	4.6000e-004	0.0000	3.0369
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	1.4000e-004	6.0000e-005	7.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0801	0.0801	0.0000	0.0000	0.0802
Total	**6.1000e-004**	**0.0256**	**4.5200e-003**	**3.0000e-005**	**3.0000e-004**	**3.0000e-005**	**3.3000e-004**	**8.0000e-005**	**3.0000e-005**	**1.1000e-004**	**0.0000**	**3.1055**	**3.1055**	**4.6000e-004**	**0.0000**	**3.1171**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.0600e-003	0.0410	0.0495	8.0000e-005		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	6.7558	6.7558	2.1800e-003	0.0000	6.8104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.0600e-003**	**0.0410**	**0.0495**	**8.0000e-005**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**6.7558**	**6.7558**	**2.1800e-003**	**0.0000**	**6.8104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0255	3.7400e-003	3.0000e-005	2.3000e-004	3.0000e-005	2.6000e-004	6.0000e-005	3.0000e-005	9.0000e-005	0.0000	3.0254	3.0254	4.6000e-004	0.0000	3.0369
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	1.4000e-004	6.0000e-005	7.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0801	0.0801	0.0000	0.0000	0.0802

Total	**6.1000e-004**	**0.0256**	**4.5200e-003**	**3.0000e-005**	**3.0000e-004**	**3.0000e-005**	**3.3000e-004**	**8.0000e-005**	**3.0000e-005**	**1.1000e-004**	**0.0000**	**3.1055**	**3.1055**	**4.6000e-004**	**0.0000**	**3.1171**

3.9 Building Interior - 2022

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	0.5355					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.1006	0.1095	1.7000e-004		5.3400e-003	5.3400e-003		4.9800e-003	4.9800e-003	0.0000	14.8939	14.8939	4.1200e-003	0.0000	14.9970
Total	**0.5461**	**0.1006**	**0.1095**	**1.7000e-004**		**5.3400e-003**	**5.3400e-003**		**4.9800e-003**	**4.9800e-003**	**0.0000**	**14.8939**	**14.8939**	**4.1200e-003**	**0.0000**	**14.9970**

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	7.4000e-004	3.2000e-004	4.2200e-003	0.0000	4.0000e-004	1.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.1000e-004	0.0000	0.4323	0.4323	2.0000e-005	0.0000	0.4328
Total	**7.4000e-004**	**3.2000e-004**	**4.2200e-003**	**0.0000**	**4.0000e-004**	**1.0000e-005**	**4.0000e-004**	**1.1000e-004**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**0.4323**	**0.4323**	**2.0000e-005**	**0.0000**	**0.4328**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5355					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.1006	0.1095	1.7000e-004		5.3400e-003	5.3400e-003		4.9800e-003	4.9800e-003	0.0000	14.8938	14.8938	4.1200e-003	0.0000	14.9969
Total	**0.5461**	**0.1006**	**0.1095**	**1.7000e-004**		**5.3400e-003**	**5.3400e-003**		**4.9800e-003**	**4.9800e-003**	**0.0000**	**14.8938**	**14.8938**	**4.1200e-003**	**0.0000**	**14.9969**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	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	7.4000e-004	3.2000e-004	4.2200e-003	0.0000	4.0000e-004	1.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.1000e-004	0.0000	0.4323	0.4323	2.0000e-005	0.0000	0.4328
Total	**7.4000e-004**	**3.2000e-004**	**4.2200e-003**	**0.0000**	**4.0000e-004**	**1.0000e-005**	**4.0000e-004**	**1.1000e-004**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**0.4323**	**0.4323**	**2.0000e-005**	**0.0000**	**0.4328**

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	0.0221	0.1070	0.2447	8.2000e-004	0.0685	7.2000e-004	0.0693	0.0184	6.7000e-004	0.0191	0.0000	75.2801	75.2801	3.0300e-003	0.0000	75.3559
Unmitigated	0.0221	0.1070	0.2447	8.2000e-004	0.0685	7.2000e-004	0.0693	0.0184	6.7000e-004	0.0191	0.0000	75.2801	75.2801	3.0300e-003	0.0000	75.3559

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	80.00	80.00	80.00	184,769	184,769
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	80.00	80.00	80.00	184,769	184,769

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.594113	0.036394	0.166849	0.102253	0.024126	0.006070	0.030484	0.028024	0.003137	0.001706	0.004997	0.000880	0.000967
Enclosed Parking with Elevator	0.594113	0.036394	0.166849	0.102253	0.024126	0.006070	0.030484	0.028024	0.003137	0.001706	0.004997	0.000880	0.000967
Parking Lot	0.594113	0.036394	0.166849	0.102253	0.024126	0.006070	0.030484	0.028024	0.003137	0.001706	0.004997	0.000880	0.000967

5.0 Energy Detail

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.6592	22.6592	2.2700e-003	4.7000e-004	22.8556
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.6592	22.6592	2.2700e-003	4.7000e-004	22.8556
NaturalGas Mitigated	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4160	17.4160	3.3000e-004	3.2000e-004	17.5195
NaturalGas Unmitigated	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4160	17.4160	3.3000e-004	3.2000e-004	17.5195

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					
Apartments Low Rise	326363	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4160	17.4160	3.3000e-004	3.2000e-004	17.5195
Enclosed Parking with Elevator	0	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
Parking Lot	0	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
Total		**1.7600e-003**	**0.0150**	**6.4000e-003**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4160**	**17.4160**	**3.3000e-004**	**3.2000e-004**	**17.5195**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	326363	1.7600e-003	0.0150	6.4000e-003	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4160	17.4160	3.3000e-004	3.2000e-004	17.5195
Enclosed Parking with Elevator	0	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
Parking Lot	0	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
Total		**1.7600e-003**	**0.0150**	**6.4000e-003**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4160**	**17.4160**	**3.3000e-004**	**3.2000e-004**	**17.5195**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	139162	18.3056	1.8300e-003	3.8000e-004	18.4642
Enclosed Parking with Elevator	30472	4.0083	4.0000e-004	8.0000e-005	4.0431
Parking Lot	2625	0.3453	3.0000e-005	1.0000e-005	0.3483
Total		**22.6592**	**2.2600e-003**	**4.7000e-004**	**22.8556**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	139162	18.3056	1.8300e-003	3.8000e-004	18.4642
Enclosed Parking with Elevator	30472	4.0083	4.0000e-004	8.0000e-005	4.0431
Parking Lot	2625	0.3453	3.0000e-005	1.0000e-005	0.3483
Total		**22.6592**	**2.2600e-003**	**4.7000e-004**	**22.8556**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4311	4.4400e-003	0.3400	2.1000e-004		0.0159	0.0159		0.0159	0.0159	1.4589	0.9886	2.4475	2.7200e-003	1.0000e-004	2.5441
Unmitigated	0.4311	4.4400e-003	0.3400	2.1000e-004		0.0159	0.0159		0.0159	0.0159	1.4589	0.9886	2.4475	2.7200e-003	1.0000e-004	2.5441

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	0.0536					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0738	1.7000e-003	0.1017	2.0000e-004		0.0145	0.0145		0.0145	0.0145	1.4589	0.5992	2.0581	2.3400e-003	1.0000e-004	2.1452
Landscaping	7.2200e-003	2.7500e-003	0.2383	1.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	0.3894	0.3894	3.8000e-004	0.0000	0.3988
Total	**0.4311**	**4.4500e-003**	**0.3400**	**2.1000e-004**		**0.0159**	**0.0159**		**0.0159**	**0.0159**	**1.4589**	**0.9886**	**2.4475**	**2.7200e-003**	**1.0000e-004**	**2.5441**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0536					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0738	1.7000e-003	0.1017	2.0000e-004		0.0145	0.0145		0.0145	0.0145	1.4589	0.5992	2.0581	2.3400e-003	1.0000e-004	2.1452
Landscaping	7.2200e-003	2.7500e-003	0.2383	1.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	0.3894	0.3894	3.8000e-004	0.0000	0.3988
Total	**0.4311**	**4.4500e-003**	**0.3400**	**2.1000e-004**		**0.0159**	**0.0159**		**0.0159**	**0.0159**	**1.4589**	**0.9886**	**2.4475**	**2.7200e-003**	**1.0000e-004**	**2.5441**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.8268	2.7500e-003	1.6500e-003	3.3864
Unmitigated	2.8268	2.7500e-003	1.6500e-003	3.3864

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.08493 / 1.31441	2.8268	2.7500e-003	1.6500e-003	3.3864
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8268**	**2.7500e-003**	**1.6500e-003**	**3.3864**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.08493 / 1.31441	2.8268	2.7500e-003	1.6500e-003	3.3864
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8268**	**2.7500e-003**	**1.6500e-003**	**3.3864**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.9880	0.1766	0.0000	7.4027
Unmitigated	2.9880	0.1766	0.0000	7.4027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	14.72	2.9880	0.1766	0.0000	7.4027
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Total		**2.9880**	**0.1766**	**0.0000**	**7.4027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	14.72	2.9880	0.1766	0.0000	7.4027
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.9880**	**0.1766**	**0.0000**	**7.4027**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: Construction Modeling and Health Risk Calculations

Spring Lake Village, Santa Rosa, CA

DPM Emissions and Modeling Emission Rates - Without Mitigation

Construction Year	Construction Area	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2021	Area 1	0.0257	DPM_A1	51.3	0.01562	1.97E-03	21,936	8.97E-08
	Area 2	0.0090	DPM_A2	18.1	0.00551	6.94E-04	7,735	8.97E-08
		0.0347		69.4	0.02113	2.66E-03	29,671	
2022	Area 1	0.0055	DPM_A1	11.1	0.00337	4.24E-04	21,936	1.93E-08
	Area 2	0.0019	DPM_A2	3.9	0.00119	1.50E-04	7,735	1.93E-08
		0.00748		15.0	0.00455	5.74E-04	29,671	
Total		***0.0422***		***84.4***	***0.0257***	***0.0032***		

Operation Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Emissions for Modeling - Without Mitigation

Construction Year	Construction Area	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2021	Area 1	FUG_A1	0.0022	4.5	0.00137	1.72E-04	21,936	7.86E-09
	Area 2	FUG_A2	0.0008	1.6	0.00048	6.08E-05	7,735	7.86E-09
			0.00304	6.1	1.85E-03	2.33E-04	29,671	
2022	Area 1	FUG_A1	0.00014	0.3	0.00009	1.08E-05	21,936	4.91E-10
	Area 2	FUG_A2	0.00005	0.1	0.00003	3.80E-06	7,735	4.91E-10
			0.00019	0.4	1.16E-04	1.46E-05	29,671	
Total			***0.00323***	***6.5***	***0.0020***	***0.0002***		

Operation Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

Spring Lake Village, Santa Rosa, CA
Maximum DPM Cancer Risk Calculations From Construction - Unmitigated
Partial Cultural Resources Avoidance Alternative
Impacts at Off-Site Receptors-1.5 meter

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum	
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult		
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-					
1	1	0 - 1	2021	0.0362	10	5.94	2021	0.0362	1	0.10	0.0053	0.040
2	1	1 - 2	2022	0.0078	10	1.28	2022	0.0078	1	0.02	0.0003	0.008
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**7.2**				**0.1**		

* Third trimester of pregnancy

Project Emergency Generator Modeling Information and Health Risk Calculations

Maximum Impacts at Future On-Site Residential Receptors

Spring Lake Village, Santa Rosa, CA - AERMOD Modeling Parameters
200 Kilowatt Emergency Generator

DPM Emission Rates			
	Annual Operation	DPM Emissions	
		Daily	Annual*
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	-	0.0090	3.28

* Calculated by CalEEMmod for 200 kW generator, 50 hours per year operation

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Receptor Spacing	25 foot (7.62 meters) grid spacing in project residential area	
Receptor Height	1.5 meters	
Meteorological Data	2009-2013 CARB Sonoma County Airport data	
Point Source Stack Parameters		
Generator engine size (hp)	268	
Stack Height (ft)	9	
Stack Diameter** (ft)	0.60	
Stack Exit Velocity** (ft/sec)	149	
Exhaust Temperature** (F)	872	
Annual Emission Rate (lb/year)	3.28	CalEEMod
Hourly Emission Rate (lb/hr)	3.74E-04	calculated

** BAAQMD default generator parameters

Spring Lake Village, Santa Rosa, CA - DPM Cancer Risks at
On-Site Residential Receptors - 1.5 meter Receptor Heights
200 Kilowatt Emergency Generator
30-Year Adult Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 +
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

MEI Cancer Risk: 200 Kilowatt Emergency Generator
On-Site Residential Receptors - 1.5 meter Receptor Heights

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0	-0.25 - 0*	10	0.00058	0.00
0	0 - 2	10	0.00058	0.00
0	2 - 16	3	0.00058	0.00
30	16+_	1	0.00058	0.05
Total Increased Cancer Risk				**0.05**

* Third trimester of pregnancy

Health Risk Impacts at Construction MEI Location (28-Year Exposure)

Spring Lake Village, Santa Rosa, CA - DPM Cancer Risks at
Construction MEI Receptor - 1.5 meter Receptor Height
200 Kilowatt Emergency Generator
28-Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant/Child			Adult
Age --> / Parameter	3rd Trimester	0 - 2	2 - 16	16 +
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

MEI Cancer Risk: 200 Kilowatt Emergency Generator
Construction MEI Receptor - 1.5 meter Receptor Height

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0	-0.25 - 0*	10	0.00058	0.00
0	0 - 2	10	0.00058	0.00
14	2 - 16	3	0.00058	0.21
14	16+_	1	0.00058	0.02
Total Increased Cancer Risk				**0.23**

* Third trimester of pregnancy

Appendix C – Biological Resources Assessment

BIOLOGICAL RESOURCES ASSESSMENT
SPRING LAKE VILLAGE EAST
MELITA AND LOS ALAMOS ROAD
SANTA ROSA, SONOMA COUNTY, CALIFORNIA
APNS 031-101-026, -034 and -035

Prepared for:

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REVISED JUNE 2020

1.0 INTRODUCTION

This report presents the results of a biological resources assessment conducted for approximately 7 acres on the proposed Spring Lake Village East property located in Santa Rosa, Sonoma County, California. The study area is located in eastern Santa Rosa east of Spring Lake and occurs within the northeast quadrant of the Santa Rosa U.S.G.S. 7.5-minute topographic map (Figure 1).

In addition, new improvements for the project were proposed in the summer of 2016 and include the following[1]:

- **Proposed pedestrian path to Hope Chapel parking lot:** The entire area between the western Spring Lake Village East site boundary and the existing Hope Chapel parking lot along approximately the northern third of the site boundary was surveyed.

- **Proposed pedestrian path along Los Alamos Road:** The survey area extends south from the junction of Highway 12 and Los Alamos Road to the south boundary of the Spring Lake Village East site, and extends west from the western edge of the pavement on Los Alamos Road to approximately 30 feet west of the roadside ditch. This entire area was previously surveyed in 2014 during the original survey of the main Spring Lake Village East site.

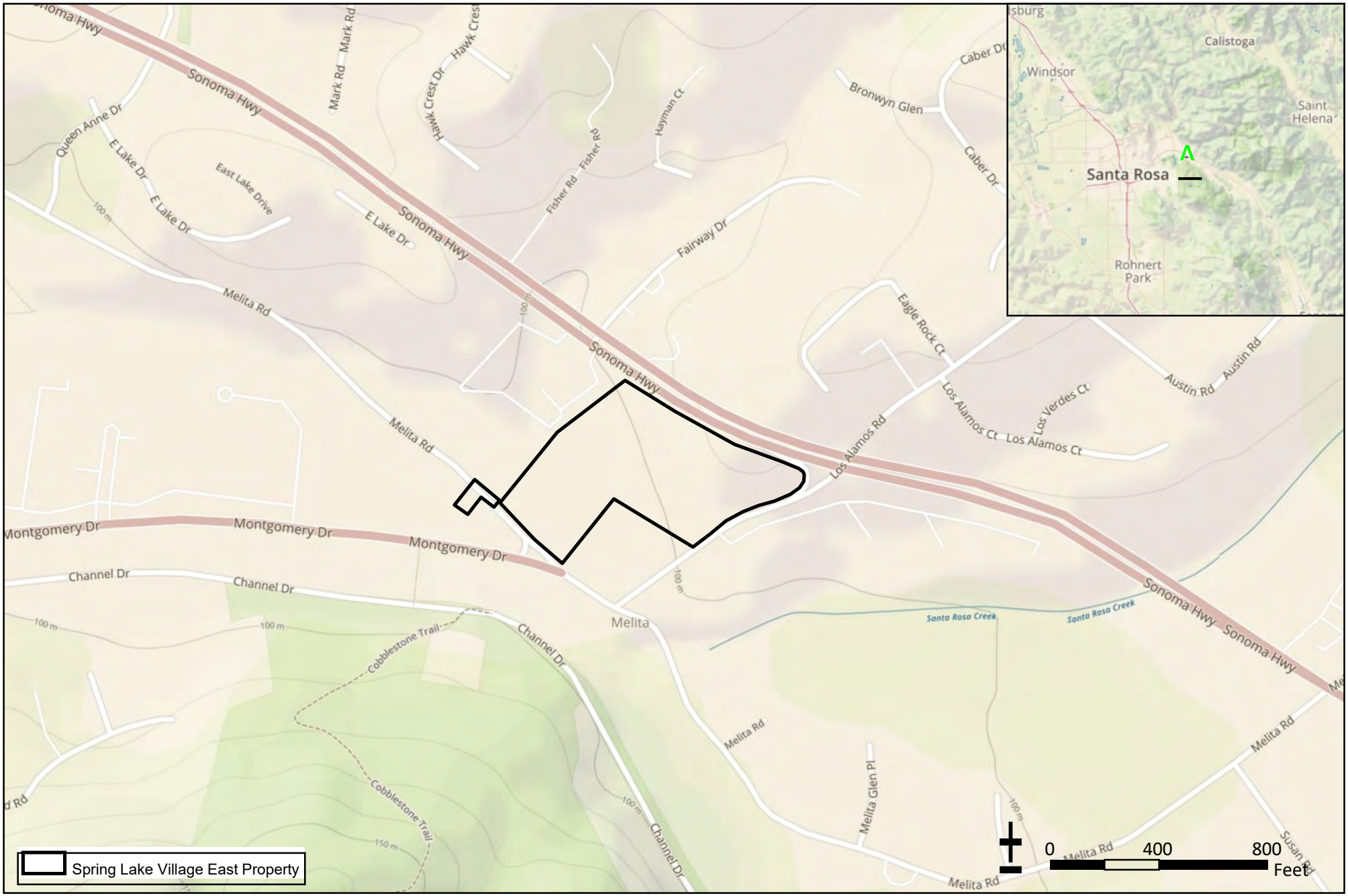
- **Proposed new sidewalk along Montgomery Drive:** The area surveyed extends west along the north side of Montgomery Drive from the Melita Road intersection west approximately 600 feet to the end of an existing sidewalk just west of an existing paved driveway, and extending approximately 30 feet north of the edge of the pavement on Montgomery Drive.

The above referenced areas were evaluated on August 29, 2016 and results of that evaluation are included in this report.

Finally, an additional 1.5 acres at 5803 and 5815 Melita Road were evaluated on April 20, 2017 and May 10, 2017. The area surveyed consisted of parcels APN 031-101-034 and APN 031-101-035, as shown on a map titled, "Spring Lake Village - East Grove Aerial Map" produced by Adobe Associates, Inc. and dated January 13, 2017. An updated evaluation of the site and its potential to support special-status species and sensitive habitats was conducted in February 2020. On May 28, 2020 protocol-level rare plant surveys were conducted on the property. No rare plants were observed.

The purpose of the assessment is to identify special-status plant and wildlife species and sensitive habitats (including wetlands) that have the potential to occur on or in the vicinity of the study area to determine if the proposed development would affect these

[1] See "Spring Lake Village East Grove Development, Overall Site Plan



Californian Environmental Services, Inc.
4127 Bay Street, Ste. B
Fremont, CA 94538

Figure 1: Vicinity Map Spring Lake Village East Property

resources. Based on information and data collected for the analysis, appropriate mitigation measures designed to minimize and/or avoid potential biological resource impacts resulting from potential development are provided.

Based on our analysis, the development parcels were determined to provide potential habitat for nesting birds, and special-status bats[2]. On the smaller parcel proposed for stormwater improvements, Santa Rosa Creek located to the west of the site provides potential habitat for steelhead trout, Pacific Pond turtle and foothill yellow-legged frog, and potential dispersal habitat for California red-legged frog. Since the preliminary draft of this report in 2014, the California giant salamander and red-bellied newt have been listed as California Species of Special Concern. The California giant salamander is known to creeks and riparian zones and known to Santa Rosa Creek and therefore is considered in this analysis. Red- bellied newt may also inhabit riparian zones and forests and therefore was also evaluated.

One seasonal wetland was identified on the northern portion of the larger site and two other waters that drain to Santa Rosa Creek were identified on the southern portion of the smaller site south of Melita Station. A stormwater ditch along the frontage of Los Alamos Road was identified and evaluated as part of the off-site improvements on August 29, 2016. No additional potential wetlands were evaluated on the remainder of the site during the May 2017 assessment. During a site evaluation conducted by Lucy Macmillan on February 24,2020 no additional potential wetlands were observed on the project site.

2.0 SITE DESCRIPTION

The study area includes four parcels. The largest of the parcels covers approximately 5 acres west of Highway 12 and north of Los Alamos Road in Santa Rosa and is currently undeveloped. Historically, this parcel was used in part as a walnut orchard and several of the older trees remain, in addition to other native and non-native trees and shrubs. A seasonal wetland occurs in a low depression on the north side of the property south of the berm associated with the construction of Highway 12. Two parcels immediately adjacent to the 5-acre parcel APN 031-101-034 and APN 031-101-03 were acquired to

[2] In the preliminary draft of this report (Macmillan and Buck, 2014), we considered the site may provide potential habitat for American badger. However, no burrows were observed over the course of several field visits conducted between April 2014 and June 2017 and on February 24, 2020. In addition, there are no recorded occurrences of badger within a 5-mile radius of the project site (see Figure 3). Therefore, we think the potential for badgers to occupy the site is very low.

be included in the development in 2016. These areas cover 1.5 acres and include a single-family residence and associated outbuildings. The parcel proposed for stormwater improvements is located on the south side of Melita Road west of Melita Station. A small portion of this area will be improved for installation of an upgraded storm drain on the south side of Melita Road but this will not impact wetland or ripairan habitat. Two other waters were identified on this parcel.

A summary of the method and results of our wetland and biological resource assessments follows.

3.0 WETLANDS ASSESSMENT

3.1 Corps of Engineers Jurisdictional Criteria Review

Unless exempt from regulation, all proposed discharges of dredged or fill material into waters of the United States require U.S. Army Corps of Engineers (Corps) authorization under Section 404 of the Clean Water Act (33 U.S.C. 1344) and Clean Water Act Section 401 authorization from the Regional Water Quality Control Board (RWQCB). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including ephemeral and intermittent streams), and farmed wetlands.

Unless exempt from regulation, all proposed discharges of dredged or fill material into waters of the United States require U.S. Army Corps of Engineers (Corps) authorization under Section 404 of the Clean Water Act (33 U.S.C. 1344) and Clean Water Act Section 401 authorization from the Regional Water Quality Control Board (RWQCB).

The Corps identifies wetlands using a "multi-parameter approach" which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. The *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West*, which was released in early 2007 and revised in 2008 (version 2.0), is utilized when conducting jurisdictional wetland determinations in areas identified within the boundaries of the Arid West (U.S. Army Corps of Engineers, 2008). The project site falls within the Arid West region and so wetlands identified on the site were delineated using that guidance.

3.1.1 Potential Wetlands

Section 328.3 of the Federal Code of Regulations defines wetlands as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

EPA, 40 CFR 230.3 and CE, 33 CFR 328.3 (b)

intermittent streams), wetlands (excluding isolated wetlands for the Corps), and farmed wetlands.

The three parameters used to delineate wetlands are the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

"....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Vegetation

Plant species identified are assigned a wetland status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL	Always found in wetlands	>99% frequency
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetland or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
UPL/NL	Upland/Not listed (upland)	<1%

The Corps Manual and Supplements require that a three-step process be conducted to determine if hydrophytic vegetation is present. The first step is the Dominance Test (Indicator 1); the second is the Prevalence Index (Indicator 2); the third is Morphological Adaptations (Indicator 3). The Dominance Test requires the delineator to apply the "50/20 rule". The dominant species are chosen independently from each stratum of the community. In general, dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are defined as the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails the 50/20 rule and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1, but hydric soils and wetland hydrology are both present, the delineator must apply the Indicator 2, Prevalence Index. The Indicator 3, Morphological Adaptations, is rarely used in this region.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation or oxidized root channels, or secondary indicators such as the FAC-neutral test or the presence of a shallow aquitard. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Federal Register July 13, 1994, U.S. Department of Agriculture, NRCS

Soils formed over long periods under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. The supplement provides a list of the hydric soil indicators that are known to occur in region. Soil samples were collected and described according to the methods provided in the supplements. Soil chroma and values were determined using a Munsell soil color chart (Kollmorgen 1975). If any of the soil samples met one or more of the hydric soil indicators described in the supplement hydric soils were determined to be present.

3.1.2 Waters of the U.S. (Other Waters)

"Other waters" or "Waters of the United States" (WUS) other than wetlands are also potentially subject to Corps jurisdiction. WUS subject to Corps jurisdiction include ponds, lakes, rivers, streams (including ephemeral and intermittent streams), and all areas below the High Tide Line (HTL) subject to tidal influence. Jurisdiction in non-tidal areas extends to the ordinary high water mark (OHW) defined as:

"*...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics 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.*"

Federal Register Vol. 51, No. 219, Part 328.3 (e). November 13, 1986

3.2 North Coast Regional Water Quality Control Board

The Regional Water Quality Control Board regulates waters of the State pursuant to Sections 13260(a)(1) and 13050(e) of the State Water Code, and the Porter Cologne Act. In addition, anyone proposing to conduct a project that requires a federal permit or involves dredge or fill activities that may result in a discharge to U.S. surface waters and/or "Waters of the State" are required to obtain a Clean Water Act (CWA) Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the Regional Water Quality Control Board, verifying that the project activities will comply with state water quality standards. The most common federal permit for dredge and fill activities is a CWA Section 404 permit issued by the Corps of Engineers (North Coast Regional Water Quality Control Board, 2007). In general, the RWQCB employs similar wetland delineation techniques for identifying wetland areas potentially subject to its regulation.

Section 401 of the CWA grants each state the right to ensure that the State's interests are protected on any federally permitted activity occurring in or adjacent to Waters of the State. In California, the Regional Water Quality Control Boards (Regional Board) are the agency mandated to ensure protection of the State's waters. So if a proposed project requires a U.S. Army Corps of Engineers CWA Section 404 permit, falls under other federal jurisdiction, and has the potential to impact Waters of the State, the Regional Water Quality Control Board will regulate the project and associated activities through a Water Quality Certification determination (Section 401) (North Coast Regional Water Quality Control Board, 2007).

However, if a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a fill discharge to "Waters of the State", the Regional Board has the option to regulate the project under it's state authority (Porter-Cologne) in the form of Waste Discharge Requirements or Waiver of Waste Discharge Requirements (North Coast Regional Water Quality Control Board, 2007). Waters of the State include isolated wetlands, which are not regulated by the Corps.

3.3 California Department of Fish and Wildlife

Activities that result in the substantial modification of the bed, bank or channel of a stream or lake may require a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600-1607 of the California Fish and Game Code. On streams, creeks and rivers, the extent of CDFW jurisdiction extends from the top of bank to top of bank or the outer limits of the riparian canopy, whichever is wider.

3.4 Background review

Prior to conducting the on-site wetlands assessment within the study area in 2015, various background materials relating to the site were reviewed. These include aerials from Google earth and the Santa Rosa U.S.G.S. 7.5-minute quadrangle. No potential wetland features were observed on the northern parcel, which includes APN 031-101-034 and APN 031-101-03. The riparian corridor associated with Santa Rosa Creek was observed adjacent to the property at Melita Station north of Santa Rosa Creek.

Additionally, the Soil Survey of Sonoma County (web Soil Survey) was reviewed to determine if any of the soils on the project site are mapped as hydric soils. The presence of a hydric soil-mapping unit on a project site suggests the presence of potential wetland habitats and therefore is another tool used in potential wetland identification.

The eastern portion of the larger parcel site is mapped as Pleasanton gravelly clay loam 2 to 9 percent slopes. The western and northern portion of the site is mapped as Manzanita gravelly silt loam 0 to 2 percent slopes. Neither of these soils is listed as hydric on the County or National Hydric Soil lists.

The smaller site, which is adjacent to Melita station, is mapped as Manzanita gravelly silt loam 0 to 9 percent slopes on the northeastern portion and Riverwash on the southern portion in association with Santa Rosa Creek. Only Riverwash is listed as a hydric soil on both the County and National lists.

3.4. Wetland Assessment and Results

On April 6, 2015, the San Francisco Corps of Engineers conducted a preliminary jurisdictional wetlands determination on the project site to verify a wetlands delineation that was completed on the site in April 2014 and March 2015. The Corps confirmed the limits of one seasonal wetland on the northern portion of the property. This area covers approximately 4,200 square feet and is shown on Plate 1. The shallow wetland area appears to be man-made, possibly through ground disturbances associated with agricultural uses of the property in the past. Vegetation growing in this area was predominated by weedy wetland indicator species primarily flat nut sedge (*Cyperus eragrostis*) and soils showed some evidence of prolonged saturation with the presence of some mottling in the surface soils.

The other areas confirmed as jurisdictional features include an unnamed drainage ditch classified as an other waters that is located on the north side of Melita Road and drains under the road in a southerly direction towards Santa Rosa Creek. The limits of this area and a portion of Santa Rosa Creek both mapped as other waters are shown on Plate 1. A second smaller tributary associated with Santa Rosa Creek was also identified on the

southeast corner of the study area adjacent to Montgomery Drive. In total these other waters cover 0.022 acre subject to Corps jurisdiction.

Seasonal wetland on northeastern portion of site

On August 29, 2016, Lucy Macmillan evaluated the additional proposed off-site improvements along Los Alamos Road and Montgomery Drive and the walkway to the Hope Chapel parking lot. During this assessment, no potential wetland features were identified with the exception of the drainage ditch on the frontage to Los Alamos Road. This area measures approximately 2 feet wide and appears to be excavated in uplands. It carries stormwater flows in a westerly direction on the project site for a distance of approximately 460 linear feet for a total area of 920 square feet or 0.02 acre on the project site. The ditch ultimately drains to Santa Rosa Creek near Montgomery Drive further to the west. The Corps would likely require mitigation for impacts to the ditch because it drains to Santa Rosa Creek.

During the May 10, 2017 wetlands assessment conducted on the additional 1.5 acres, no potential wetlands were observed. During the February 24, 2020 site evaluation, no additional wetland areas were observed. It was noted that much of the riparian vegetation associated with Santa Rosa Creek to the west of Melita Station had been cleared since previous visits.

Activities that would result in the discharge of fill material into the jurisdictional areas identified within the study area would require authorization from the Corps of Engineers and RWQCB. The stormdrain outfall improvement south of Melita Road may require a Streambed Alteration Notification to the CDFW.

3.5 Mitigation

Mitigation for wetland impacts will be achieved at a minimum of 1:1 replacement off-site at an agency-approved wetland mitigation bank within the same watershed as the project site.

HIGHWAY 12

SWA

1

2

DATA SAMPLING POINTS

POTENTIAL OTHER WATER, DD1
AVERAGE OHWM 2'x460' = 920 SF
(OR 0.02 ACRE)

OBSERVED
WIDTH = 1.5'

OBSERVED
WIDTH = 2'

OBSERVED
WIDTH = 2'

AREA OF STUDY LIMITS
BASED ON OFF-SITE IMPROVEMENT
WETLANDS ASSESSMENT CONDUCTED
8/29/2016 BY LUCY MACMILLAN

PROJECT BOUNDARY

APN 031-101-059

APN 031-101-026

APN 031-101-061

APN 031-101-035

APN 031-101-060

APN 031-101-027

APN 031-101-038

APN 031-101-034

APN 031-101-033

LOS ALAMOS ROAD

MELITA ROAD

MONTGOMERY DRIVE

WATERS OF THE US
WUS 2 (120 SF)

AREA OF STUDY

WATERS OF THE US
WUS 1 (820 SF)

PROJECT BOUNDARY
(MELITA STATION)

AREA OF STUDY

WATERS OF THE US
WUS 3 (10 SF)

AREA OF STUDY

00' 50' 0 50' 00' 200' 300'
1 1

Gra e: 1" = 1

ph l

February 26, 2018

WETLAND AREAS POTENTIALLY SUBJECT TO

U.S. ARMY CORPS ENGINEERS (USACE) JURISDICTION SPRING LAKE VILLAGE EAST PROJECT SITE

AREA	CLASSIFICATION	SQ.FT.	STATUS
SWA	Seasonal Wetland	4,200 SF	Confirmed by USACE4/6/2015
WUS1	Waters of the U.S.	820 SF	Confirmed by USACE 4/6/2015 WUS2
	Waters of the U.S.	120 SF	Confirmed by USACE 4/6/2015 WUS3
	Waters of the U.S.	10 SF	Confirmed by USACE4/6/2015
DD1	Other Water	~~920 SF~~	Delineated by L. Macmillan 8/29/2016 TOTAL:
		~~6,070 SF~~	

SPRING LAKE VILLAGE - EAST PARCEL WETLAND EXHIBIT

Episcopal Senior Communities
5658 Melita Road, Santa Rosa CA

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On!"

4.0 REGULATORY FRAMEWORK

Special-status plants and animals are legally protected under the State and Federal Endangered Species Acts or other regulations, and species that are considered rare by the scientific community. Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special status invertebrates are all considered special status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal.

Special-status bats are those designated by the Western Bat Working Group (WBWG) as High Priority and are those species that are imperiled or at high risk of imperilment (http://wbwg.org/matrices/species-matrix/) and as such qualify for legal protection under CEQA.

To obtain up-to-date conservation information U.S. Fish and Wildlife Service (USFWS) species lists were reviewed for federally listed species (including Proposed and Candidate species) and California Department of Fish and Wildlife (CDFW) (2020 species lists for State of California listed species were also reviewed. Special-status species also include those with California Rare Plant Rank (CRPR) 1A (Plants Presumed Extinct in California), CRPR 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or CRPR 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere), as indicated by the CNPS *Inventory* (CNPS 2017). Impacts to these species must be reviewed under the provisions of the California Environmental Quality Act (CEQA) Guidelines. In July 2017 an up-to-date review of the California Natural Diversity Data Base was conducted.

Also considered special-status are those species with CRPR 3 (Plants About Which We Need More Information—A Review List) and CRPR 4 (Plants of Limited Distribution—A Watch List) of the CNPS Inventory. These species are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are generally not required for species in these categories.

4.1 SPECIAL-STATUS PLANTS

4.1.1 Background Review

Prior to conducting the field surveys conducted on the site, a focused review of literature and data sources was conducted to identify special-status plant species with a potential to occur in the study area. Sources reviewed included California Natural Diversity Database (CNDDB) occurrence records for the Santa Rosa USGS 7.5' quadrangle and the eight quadrangles surrounding it and county and USGS quadrangle occurrence records in the California Native Plant Society's (CRPR) *Inventory of Rare and Endangered Plants* (CRPR, 2020) for the same nine quadrangles.

Based on information from the above sources, a target list of special-status plants with potential to occur in the vicinity of the study area was developed (Table 1) (CRPR 4 species are not included). Figure 2 illustrates special-status plant occurrences within a 5-mile radius of the project site.

4.1.2 Results

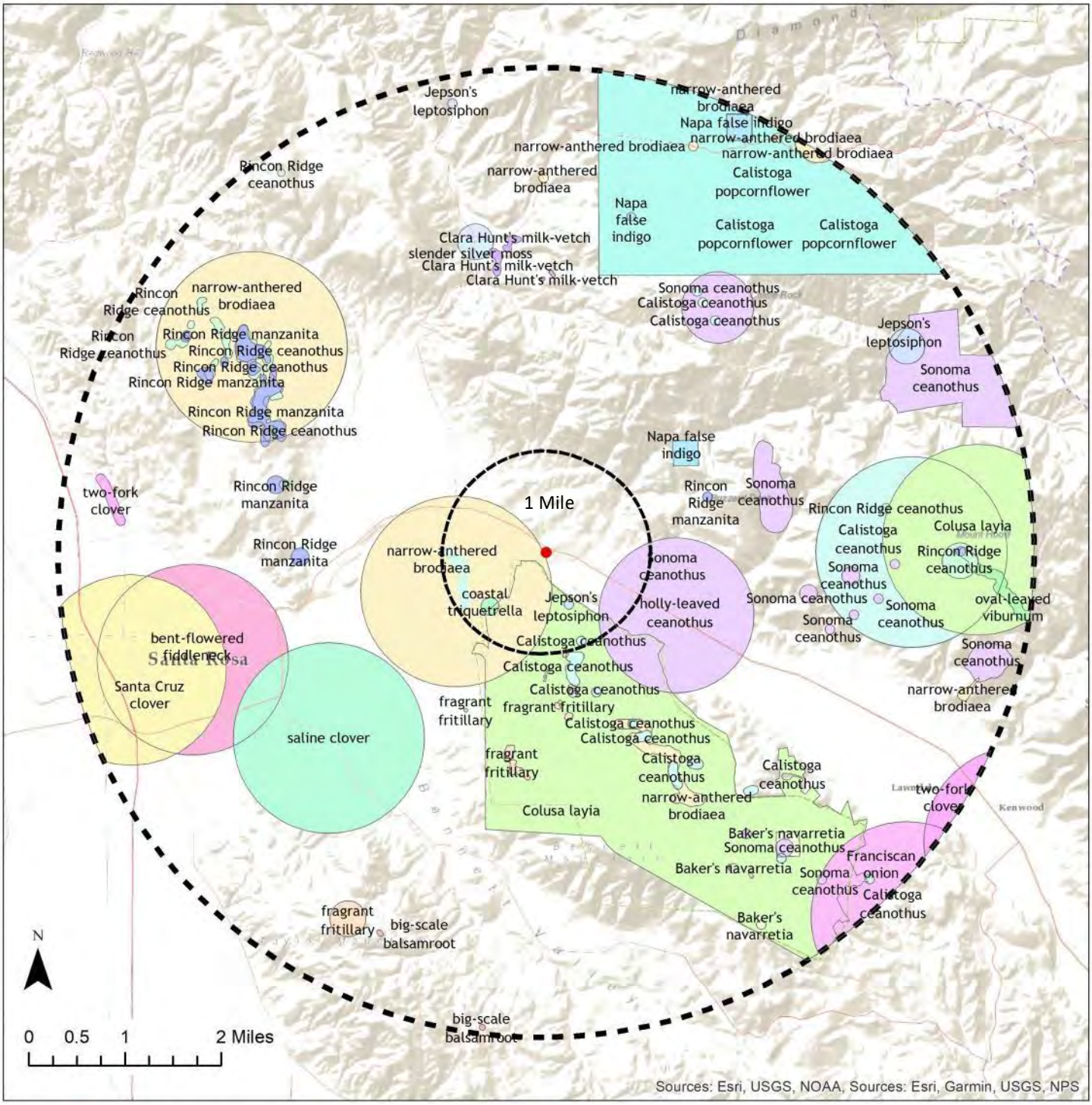
Sensitive habitats include: riparian corridors, wetlands, habitats for legally protected species and CDFG Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the CNDDB working list of "high priority" habitats for inventory (i.e., those habitats that are rare or endangered within the borders of California) (California Department of Fish and Game [CDFG, now CDFW] 2003). California Environmental Services senior botanist Dr. Roy Buck reviewed the CNDDB list of "high priority" habitats.

Spring Lake Village East Site

Dr. Buck conducted a site visit to the Spring Lake Village East site on April 30, 2014. Dr. Buck and CES biologist, Maya Khosla, conducted a second site visit for later-flowering species on June 27, 2014. The site was surveyed on foot with 100 percent coverage. The areas surveyed included all lands included within the site boundaries as shown on a map produced by Adobe Associates, Inc., titled "ALTA/ACSM Land Title Survey, Lands of Mark A. McIntosh" and dated December 2012. The area surveyed was demarcated on the ground by Highway 12 on the north, by Los Alamos Road on the east, and by a steep slope below a parking lot on the west. The southern boundary was generally demarcated by fencelines, with a narrow southern extension of the site bounded on the south by Melita Road. The timing of the two field visits was adequate for identification of all special-status plant species with potential to occur in the survey area (Table 1).

Figure 2: Special Status Plant Species within 1 Mile and 5 Miles of the Project Site

SLV East Grove Project, Santa Rosa, CA



- Project Location
- 1 Mile Buffer
- 5 Mile Buffer
- Baker's navarretia (4)
- Calistoga ceanothus (8)
- Calistoga popcornflower (3)
- Clara Hunt's milk-vetch (2)
- Colusa layia (2)
- Franciscan onion (1)
- Jepson's leptosiphon (3)
- Napa false indigo (4)
- Rincon Ridge ceanothus (5)
- Rincon Ridge manzanita (5)
- Santa Cruz clover (1)
- Sonoma alopecurus (1)
- Sonoma beardtongue (1)
- Sonoma ceanothus (11)
- bent-flowered fiddleneck (1)
- big-scale balsamroot (2)
- coastal triquetrella (1)
- fragrant fritillary (5)
- holly-leaved ceanothus (1)
- narrow-anthered brodiaea (7)
- oval-leaved viburnum (1)
- saline clover (1)
- slender silver moss (1)
- two-fork clover (2)

5 Miles

Date: 2-24-2020
Data: Sol Ecology Inc., Sonoma Co., CDFW

Base: ESRI
GIS: AJG

SOL ECOLOGY
solecology.com

Table 1A. Special-status plant species with potential to occur in the vicinity of the Spring Lake Village East Project site, Santa Rosa, California

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Clay soil, volcanic or serpentine substrate; cismontane woodland, valley and foothill grassland.	May-June	Suitable substrate and soil type probably not present in survey area. Observable but not observed at time of June field survey. **Low Potential**
Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*)	FE, CRPR 1B.1	Wet places; freshwater marshes and swamps, riparian scrub, streamsides in valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Napa false indigo (*Amorpha californica* var. *napensis*)	CRPR 1B.2	Broadleafed upland forest, chaparral, cismontane woodland , North Coast coniferous forest.	April-July	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland, openings in broadleaved upland forest.	March-June	Suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **Low Potential**
Sonoma manzanita (*Arctostaphylos canescens* ssp. *sonomensis*)	CRPR 1B.2	Sometimes serpentine substrate; chaparral, lower montane coniferous forest.	January-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Vine Hill manzanita (*Arctostaphylos densiflora*)	SE, CRPR 1B.1	Acid marine sandy or sandy clay soil; maritime chaparral.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*)	CRPR 1B.1	Red rhyolitic substrate; chaparral, cismontane woodland.	February-April (May)	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Clara Hunt's milk-vetch (*Astragalus claranus*)	FE, ST, CRPR 1B.1	Rocky open, generally exposed places, clay soil, serpentine or volcanic substrate; cismontane woodland, valley and foothill grassland, openings in chaparral.	March-May	Suitable habitat probably not present in survey area. Observable but not observed at time of April field survey. **No Potential**
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, sometimes serpentine substrate.	March-July	Suitable habitat occurs in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**
Sonoma sunshine (*Blennosperma bakeri*)	FE, SE, CRPR 1B.1	Vernally moist to inundated places; vernal pools, valley and foothill grassland.	February-April	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Narrow-anthered brodiaea (*Brodiaea leptandra* [*B. californica* var. *leptandra*])	CRPR 1B,2	Gravelly soil (?), volcanic substrate (?); broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland.	May-July	Suitable substrate and soil type probably not present in survey area. Observable but not observed at time of June field survey. **Low Potential**
Thurber's reed grass (*Calamagrostis crassiglumis*)	CRPR 2B.1	Moist to wet places; coastal scrub, freshwater marsh.	May-July	No suitable habitat occurs in survey area. **No Potential**
Swamp harebell (*Campanula californica*)	CRPR 1B.2	Wet, boggy places; bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes, North Coast coniferous forest.	June-October	No suitable habitat occurs in survey area. **No Potential**
Pitkin Marsh paintbrush (*Castilleja uliginosa*)	SE, CRPR 1A	Freshwater marsh.	June-July	No suitable habitat occurs in survey area. **No Potential**
Rincon Ridge ceanothus (*Ceanothus confusus*)	CRPR 1B.1	Dry sites, volcanic or serpentine substrate; closed-cone coniferous forest, chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Calistoga ceanothus (*Ceanothus divergens*)	CRPR 1B.2	Rocky places, serpentine or volcanic substrate; chaparral, cismontane woodland.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Vine Hill ceanothus (*Ceanothus foliosus* var. *vineatus*)	CRPR 1B.1	Sandy (and rocky?) acidic soil; chaparral, cismontane woodland (?), broadleafed evergreen forest (?).	March-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Holly-leaved ceanothus (*Ceanothus purpureus*)	CRPR 1B.2	Rocky soil, volcanic substrate; chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Sonoma ceanothus (*Ceanothus sonomensis*)	CRPR 1B.2	Sandy soil, serpentine or volcanic substrate; chaparral.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Pappose tarplant (*Centromadia* [*Hemizonia*] *parryi* ssp. *parryi*)	CRPR 1B.2	Vernally moist sites, often alkaline soil; chaparral, coastal prairie, meadows, coastal salt marshes, valley and foothill grassland.	May-November	Suitable habitat probably does not occur in survey area. Observable but not observed at time of June field survey. **Low Potential**
Sonoma spineflower (*Chorizanthe valida*)	FE, SE, CRPR 1B.1	Sandy soil, coastal prairie.	June-August	Suitable habitat probably does not occur in survey area. Observable but not observed at time of June field survey. **Low Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Vine Hill clarkia (*Clarkia imbricata*)	FE, SE, CRPR 1B.1	Acidic sandy loam soil; chaparral, valley and foothill grassland.	June-August	Suitable habitat probably does not occur in survey area. Site is outside species's known range. Observable but not observed at time of June field survey. **Low Potential**
Pennell's bird's-beak (*Cordylanthus tenuis* ssp. *capillaris*)	FE, SR, CRPR 1B.2	Open or disturbed areas, serpentine substrate; chaparral, cosed-cone coniferous forest.	June-September	Suitable serpentine substrate does not occur in survey area. **No Potential**
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	CRPR 2B.2	Parasitic on herbs including *Alternanthera* spp., *Dalea* spp., loosestrife (*Lythrum* spp.), knotweed (*Polygonum* spp.), and cocklebur/clotbur (*Xanthium* spp.); freshwater marsh	July-October	No suitable habitat occurs in survey area. **No Potential**
Golden larkspur (*Delphinium luteum*)	FE, SR, CRPR 1B.1	± moist places, rocky soil, generally north-facing slopes; chaparral, coastal prairie, coastal scrub.	March-May	No suitable habitat occurs in survey area. **No Potential**
Dwarf downingia (*Downingia pusilla*)	CRPR 2B.2	Vernal pools, vernally moist places in valley and foothill grassland, sometimes ditches.	March-May	No suitable habitat occurs in survey area. **No Potential**
Streamside daisy (*Erigeron biolettii*)	CRPR 3	Rocky soil, sometimes ledges along rivers; broadleafed upland forest, cismontane woodland, North Coast coniferous forest.	June-October	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Serpentine daisy (*Erigeron serpentinus*)	CRPR 1B.3	Serpentine substrate, generally on seeps; chaparral.	May-August	No suitable habitat occurs in survey area. **No Potential**
Loch Lomond button-celery (*Eryngium constancei*)	FE, SE, CRPR 1B.1	Vernal pools (generally volcanic ash flow vernal pools).	April-June	No suitable habitat occurs in survey area. **No Potential**
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2	Generally heavy clay soil, often serpentine substrate; cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland.	February-April	Suitable soil type probably not present in survey area. Observable but not observed at time of April field survey. **Low Potential**
Woolly-headed gilia (*Gilia capitata* ssp. *tomentosa*)	CRPR 1B.1	Rocky places, rock outcrops, serpentine substrate; coastal bluff scrub, valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	SE, CRPR 1B.2	Vernally inundated or wet places, clay soil; usually vernal pools, occasionally lake margins.	April-August (September)	No suitable habitat occurs in survey area. **No Potential**
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)	CRPR 1B.2	Grassy places, often disturbed areas, fallow fields, other ruderal areas; valley and foothill grassland, coastal scrub.	April-November	Suitable habitat occurs in survey area. Sometimes does not flower until June. Observable but not observed at time of June (and possibly April) field surveys. **Low Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Thin-lobed horkelia (*Horkelia tenuiloba*)	CRPR 1B.2	Moist places, open areas, sandy soil; broadleafed upland forest, chaparral, coastal scrub, valley and foothill grassland.	May-July	Suitable habitat may occur in survey area. Observable but not observed at time of June field survey. **Low Potential**
Burke's goldfields (*Lasthenia burkei*)	FE, SE, CRPR 1B.1	Wet or moist (at least vernally) places; generally vernal pools and swales, sometimes meadows.	April-June	No suitable habitat occurs in survey area. **No Potential**
Baker's goldfields (*Lasthenia californica* ssp. *bakeri*)	CRPR 1B.2	Open places; closed-cone coniferous forest, coastal scrub, meadows, marshes and swamps.	April-October	At least marginally suitable habitat may occur in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**
Contra Costa goldfields (*Lasthenia conjugens*)	FE, CRPR 1B.1	Vernally moist, open, low-lying places, sometimes alkaline soil; vernal pools, wet meadows, valley and foothill grassland, cismontane woodland, alkaline playas.	March-June	Suitable habitat probably does not occur in survey area. Site is outside species's known range. Observable but not observed at time of April field survey. **Low Potential**
Colusa layia (*Layia septentrionalis*)	CRPR 1B.2	Sandy or serpentine soil; chaparral, cismontane woodland, valley and foothill grassland.	April-June	At least marginally suitable habitat may occur in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Legenere (*Legenere limosa*)	CRPR 1B.1	Vernal pools and swales.	April-June	No suitable habitat occurs in survey area. **No Potential**
Jepson's leptosiphon (*Leptosiphon* [*Linanthus*] *jepsonii*)	CRPR 1B.2	Usually volcanic soil (sometimes periphery of serpentine), chaparral, cismontane woodland.	March-May	At least marginally suitable habitat may occur in survey area. Observable but not observed at time of April field survey. **Low Potential**
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay or serpentine soil, broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland.	June-October	At least marginally suitable habitat occurs in survey area. Observable but not observed at time of June field survey. **Low Potential**
Pitkin marsh lily (*Lilium pardalinum* ssp *pitkinense*)	FE, SE, CRPR 1B.1	Saturated places, sandy soil; cismontane woodland, meadows and seeps, freshwater marshes.	June-July	No suitable habitat occurs in survey area. **No Potential**
Sebastopol meadowfoam (*Limnanthes vinculans*)	FE, SE, CRPR 1B.1	Seasonally wet places, poorly drained, clay or sandy soil; meadows, valley and foothill grassland, vernal pools.	April-May	No suitable habitat occurs in survey area. **No Potential**
Cobb Mountain lupine (*Lupinus sericatus*)	CRPR 1B.2	Open wooded areas, gravelly soil; broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest.	March-June	Marginally suitable habitat occurs in survey area. Observable but not observed at time of April (and possibly June) field surveys. **Low Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Mt. Diablo cottonweed (*Micropus amphibolus*)	CRPR 3.2	Sparsely vegetated places, rocky soil; broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland, coastal prairie.	March-June	No suitable habitat occurs in survey area. **No Potential**
Marsh microseris (*Microseris paludosa*)	CRPR 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland.	April-June (July)	Suitable habitat occurs in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	CRPR 1B.1	Seasonally moist places, cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	April-July	Marginally suitable habitat occurs in survey area. Observable but not observed at time of June (and possibly April) field surveys. **Low Potential**
Many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*)	FE, SE, CRPR 1B.2	Volcanic ash flow vernal pools.	May-June	No suitable habitat occurs in survey area. **No Potential**
Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*)	CRPR 1B.3	Rocky places, generally rock outcrops or talus; chaparral.	April-August	No suitable habitat occurs in survey area. **No Potential**
Calistoga popcorn-flower (*Plagiobothrys strictus*)	FE, ST, CRPR 1B.1	Seasonally moist to wet sites near thermal springs, alkaline, heavy clay soil; meadows and seeps, valley and foothill grassland, vernal pool margins.	March-June	No suitable habitat occurs in survey area. Not known to occur in Sonoma County. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
North Coast semaphore grass (*Pleuropogon hooverianus*)	ST, CRPR 1B.1	Moist to wet, open or partly shaded places; broadleafed upland forest, meadows and seeps, North Coast coniferous forest, freshwater marsh.	May-August	Suitable habitat probably does not occur in survey area. Observable but not observed during June field survey. **Low Potential**
Napa blue grass (*Poa napensis*)	FE, SE, CRPR 1B.1	Moist sites near thermal springs, alkaline soil; meadows and seeps, valley and foothill grassland.	May-August	No suitable habitat occurs in survey area. Not known to occur in Sonoma County. **No Potential**
Cunningham Marsh cinquefoil (*Potentilla uliginosa*)	CRPR 1A	Permanent oligotrophic (low-nutrient) wetlands; freshwater marsh.	May-August	No suitable habitat occurs in survey area. **No Potential**
California alkali grass (*Puccinellia simplex*)	CRPR 1B.2	Vernally moist places, alkaline or saline soil, sinks, flats, lake margins, mineral springs; meadows and seeps, chenopod scrub, valley and foothill grassland, vernal pools.	March-May	Suitable soil type does not occur in survey area. **No Potential**
White beaked-rush (*Rhynchospora alba*)	CRPR 2B.2	Wet places; bogs and fens (including sphagnum bogs), meadows and seeps, freshwater marshes and swamps.	July-August	No suitable habitat occurs in survey area. **No Potential**
California beaked-rush (*Rhynchospora californica*)	CRPR 1B.1	Wet, generally open places; bogs and fens, lower montane coniferous forest, freshwater seeps, freshwater marshes and swamps.	May-July	No suitable habitat occurs in survey area. **No Potential**
Brownish beaked-rush (*Rhynchospora capitellata*)	CRPR 2B.2	Moist to wet places; lower and upper montane coniferous forest, meadows and seeps, marshes and swamps.	July-August	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Round-headed beaked-rush (*Rhynchospora globularis*)	CRPR 2B.1	Freshwater marsh.	July-August	No suitable habitat occurs in survey area. **No Potential**
Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*)	CRPR 1B.1	Rocky places, rhyolitic substrate; chaparral.	April-June	No suitable habitat occurs in survey area. **No Potential**
Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)	FE, SE, CRPR 1B.1	Freshwater marsh, especially edges.	June-September	No suitable habitat occurs in survey area. **No Potential**
two-fork clover (*Trifolium amoenum*)	FE, CRPR 1B.1	Moist open sites, heavy soil, sometimes serpentine substrate, sometimes roadsides or eroded areas; coastal bluff scrub, valley and foothill grassland.	April-June	Suitable soil type probably does not occur in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**
Santa Cruz clover (*Trifolium buckwestiorum*)	CRPR 1B.1	Seasonally moist places, sometimes disturbed areas; coastal prairie, margins of cismontane woodland and broadleafed upland forest.	April-October	Marginally suitable habitat may occur in survey area. Observable but not observed at time of April and June field surveys. **Low Potential**
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Moist or seasonally moist sites, alkaline or saline soil; marshes and swamps (including coastal salt marshes?), valley and foothill grassland, vernal pools.	April-June April-June	Suitable soil type does not occur in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Oval-leaved viburnum (*Viburnum ellipticum*)	CRPR 2B.3	Often north-facing slopes; chaparral, cismontane woodland, lower montane coniferous forest.	May-June (August)	Marginally suitable habitat may occur in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

Table 1B. Special-status plant species with potential to occur in the vicinity of the Spring Lake Village East Project 5803 and 5815 Melita Road Parcels, Santa Rosa, California

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Clay soil, volcanic or serpentine substrate; cismontane woodland, valley and foothill grassland.	May-June	No suitable habitat occurs in survey area. **No Potential**
Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*)	FE, CRPR 1B.1	Wet places; freshwater marshes and swamps, riparian scrub, streamsides in valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Napa false indigo (*Amorpha californica* var. *napensis*)	CRPR 1B.2	Broadleafed upland forest, chaparral, cismontane woodland , North Coast coniferous forest.	April-July	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland, openings in broadleaved upland forest.	March-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Sonoma manzanita (*Arctostaphylos canescens* ssp. *sonomensis*)	CRPR 1B.2	Sometimes serpentine substrate; chaparral, lower montane coniferous forest.	January-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Vine Hill manzanita (*Arctostaphylos densiflora*)	SE, CRPR 1B.1	Acid marine sandy or sandy clay soil; maritime chaparral.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*)	CRPR 1B.1	Red rhyolitic substrate; chaparral, cismontane woodland.	February-April (May)	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Clara Hunt's milk-vetch (*Astragalus claranus*)	FE, ST, CRPR 1B.1	Rocky open, generally exposed places, clay soil, serpentine or volcanic substrate; cismontane woodland, valley and foothill grassland, openings in chaparral.	March-May	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, sometimes serpentine substrate.	March-July	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Sonoma sunshine (*Blennosperma bakeri*)	FE, SE, CRPR 1B.1	Vernally moist to inundated places; vernal pools, valley and foothill grassland.	February-April	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Narrow-anthered brodiaea (*Brodiaea leptandra* [*B. californica* var. *leptandra*])	CRPR 1B,2	Gravelly soil (?), volcanic substrate (?); broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Thurber's reed grass (*Calamagrostis crassiglumis*)	CRPR 2B.1	Moist to wet places; coastal scrub, freshwater marsh.	May-July	No suitable habitat occurs in survey area. **No Potential**
Swamp harebell (*Campanula californica*)	CRPR 1B.2	Wet, boggy places; bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes, North Coast coniferous forest.	June-October	No suitable habitat occurs in survey area. **No Potential**
Pitkin Marsh paintbrush (*Castilleja uliginosa*)	SE, CRPR 1A	Freshwater marsh.	June-July	No suitable habitat occurs in survey area. **No Potential**
Rincon Ridge ceanothus (*Ceanothus confusus*)	CRPR 1B.1	Dry sites, volcanic or serpentine substrate; closed-cone coniferous forest, chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Calistoga ceanothus (*Ceanothus divergens*)	CRPR 1B.2	Rocky places, serpentine or volcanic substrate; chaparral, cismontane woodland.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Vine Hill ceanothus (*Ceanothus foliosus* var. *vineatus*)	CRPR 1B.1	Sandy (and rocky?) acidic soil; chaparral, cismontane woodland (?), broadleafed evergreen forest (?).	March-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Holly-leaved ceanothus (*Ceanothus purpureus*)	CRPR 1B.2	Rocky soil, volcanic substrate; chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Sonoma ceanothus (*Ceanothus sonomensis*)	CRPR 1B.2	Sandy soil, serpentine or volcanic substrate; chaparral.	February-April	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**
Pappose tarplant (*Centromadia* [*Hemizonia*] *parryi* ssp. *parryi*)	CRPR 1B.2	Vernally moist sites, often alkaline soil; chaparral, coastal prairie, meadows, coastal salt marshes, valley and foothill grassland.	May-November	No suitable habitat occurs in survey area. **No Potential**
Sonoma spineflower (*Chorizanthe valida*)	FE, SE, CRPR 1B.1	Sandy soil, coastal prairie.	June-August	No suitable habitat occurs in survey area. **No Potential**
Vine Hill clarkia (*Clarkia imbricata*)	FE, SE, CRPR 1B.1	Acidic sandy loam soil; chaparral, valley and foothill grassland.	June-August	No suitable habitat occurs in survey area. Site is outside species's known range. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Pennell's bird's-beak (*Cordylanthus tenuis* ssp. *capillaris*)	FE, SR, CRPR 1B.2	Open or disturbed areas, serpentine substrate; chaparral, cosed-cone coniferous forest.	June-September	No suitable habitat occurs in survey area. **No Potential**
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	CRPR 2B.2	Parasitic on herbs including *Alternanthera* spp., *Dalea* spp., loosestrife (*Lythrum* spp.), knotweed (*Polygonum* spp.), and cocklebur/clotbur (*Xanthium* spp.); freshwater marsh	July-October	No suitable habitat occurs in survey area. **No Potential**
Golden larkspur (*Delphinium luteum*)	FE, SR, CRPR 1B.1	± moist places, rocky soil, generally north-facing slopes; chaparral, coastal prairie, coastal scrub.	March-May	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Dwarf downingia (*Downingia pusilla*)	CRPR 2B.2	Vernal pools, vernally moist places in valley and foothill grassland, sometimes ditches.	March-May	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Streamside daisy (*Erigeron biolettii*)	CRPR 3	Rocky soil, sometimes ledges along rivers; broadleafed upland forest, cismontane woodland, North Coast coniferous forest.	June-October	No suitable habitat occurs in survey area. **No Potential**
Serpentine daisy (*Erigeron serpentinus*)	CRPR 1B.3	Serpentine substrate, generally on seeps; chaparral.	May-August	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Loch Lomond button-celery (*Eryngium constancei*)	FE, SE, CRPR 1B.1	Vernal pools (generally volcanic ash flow vernal pools).	April-June	No suitable habitat occurs in survey area. **No Potential**
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2	Generally heavy clay soil, often serpentine substrate; cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland.	February-April	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Woolly-headed gilia (*Gilia capitata* ssp. *tomentosa*)	CRPR 1B.1	Rocky places, rock outcrops, serpentine substrate; coastal bluff scrub, valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	SE, CRPR 1B.2	Vernally inundated or wet places, clay soil; usually vernal pools, occasionally lake margins.	April-August (September)	No suitable habitat occurs in survey area. **No Potential**
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)	CRPR 1B.2	Grassy places, often disturbed areas, fallow fields, other ruderal areas; valley and foothill grassland, coastal scrub.	April-November	At least marginally suitable habitat occurs in survey area. Sometimes does not flower until June. **Low Potential**
Thin-lobed horkelia (*Horkelia tenuiloba*)	CRPR 1B.2	Moist places, open areas, sandy soil; broadleafed upland forest, chaparral, coastal scrub, valley and foothill grassland.	May-July	No suitable habitat occurs in survey area. **No Potential**
Burke's goldfields (*Lasthenia burkei*)	FE, SE, CRPR 1B.1	Wet or moist (at least vernally) places; generally vernal pools and swales, sometimes meadows.	April-June	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Baker's goldfields (*Lasthenia californica* ssp. *bakeri*)	CRPR 1B.2	Open places; closed-cone coniferous forest, coastal scrub, meadows, marshes and swamps.	April-October	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Contra Costa goldfields (*Lasthenia conjugens*)	FE, CRPR 1B.1	Vernally moist, open, low-lying places, sometimes alkaline soil; vernal pools, wet meadows, valley and foothill grassland, cismontane woodland, alkaline playas.	March-June	No suitable habitat occurs in survey area. Site is outside species's known range. Observable but not observed at time of April field survey. **No Potential**
Colusa layia (*Layia septentrionalis*)	CRPR 1B.2	Sandy or serpentine soil; chaparral, cismontane woodland, valley and foothill grassland.	April-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Legenere (*Legenere limosa*)	CRPR 1B.1	Vernal pools and swales.	April-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Jepson's leptosiphon (*Leptosiphon* [*Linanthus*] *jepsonii*)	CRPR 1B.2	Usually volcanic soil (sometimes periphery of serpentine), chaparral, cismontane woodland.	March-May	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay or serpentine soil, broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland.	June-October	No suitable habitat occurs in survey area. **No Potential**
Pitkin marsh lily (*Lilium pardalinum* ssp *pitkinense*)	FE, SE, CRPR 1B.1	Saturated places, sandy soil; cismontane woodland, meadows and seeps, freshwater marshes.	June-July	No suitable habitat occurs in survey area. **No Potential**
Sebastopol meadowfoam (*Limnanthes vinculans*)	FE, SE, CRPR 1B.1	Seasonally wet places, poorly drained, clay or sandy soil; meadows, valley and foothill grassland, vernal pools.	April-May	No suitable habitat occurs in survey area. **No Potential**
Cobb Mountain lupine (*Lupinus sericatus*)	CRPR 1B.2	Open wooded areas, gravelly soil; broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest.	March-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Mt. Diablo cottonweed (*Micropus amphibolus*)	CRPR 3.2	Sparsely vegetated places, rocky soil; broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland, coastal prairie.	March-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Marsh microseris (*Microseris paludosa*)	CRPR 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland.	April-June (July)	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	CRPR 1B.1	Seasonally moist places, cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	April-July	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*)	FE, SE, CRPR 1B.2	Volcanic ash flow vernal pools.	May-June	No suitable habitat occurs in survey area. **No Potential**
Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*)	CRPR 1B.3	Rocky places, generally rock outcrops or talus; chaparral.	April-August	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Calistoga popcorn-flower (*Plagiobothrys strictus*)	FE, ST, CRPR 1B.1	Seasonally moist to wet sites near thermal springs, alkaline, heavy clay soil; meadows and seeps, valley and foothill grassland, vernal pool margins.	March-June	No suitable habitat occurs in survey area. Not known to occur in Sonoma County. **No Potential**
North Coast semaphore grass (*Pleuropogon hooverianus*)	ST, CRPR 1B.1	Moist to wet, open or partly shaded places; broadleafed upland forest, meadows and seeps, North Coast coniferous forest, freshwater marsh.	May-August	No suitable habitat occurs in survey area. **No Potential**
Napa blue grass (*Poa napensis*)	FE, SE, CRPR 1B.1	Moist sites near thermal springs, alkaline soil; meadows and seeps, valley and foothill grassland.	May-August	No suitable habitat occurs in survey area. Not known to occur in Sonoma County. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Cunningham Marsh cinquefoil (*Potentilla uliginosa*)	CRPR 1A	Permanent oligotrophic (low-nutrient) wetlands; freshwater marsh.	May-August	No suitable habitat occurs in survey area. **No Potential**
California alkali grass (*Puccinellia simplex*)	CRPR 1B.2	Vernally moist places, alkaline or saline soil, sinks, flats, lake margins, mineral springs; meadows and seeps, chenopod scrub, valley and foothill grassland, vernal pools.	March-May	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
White beaked-rush (*Rhynchospora alba*)	CRPR 2B.2	Wet places; bogs and fens (including sphagnum bogs), meadows and seeps, freshwater marshes and swamps.	July-August	No suitable habitat occurs in survey area. **No Potential**
California beaked-rush (*Rhynchospora californica*)	CRPR 1B.1	Wet, generally open places; bogs and fens, lower montane coniferous forest, freshwater seeps, freshwater marshes and swamps.	May-July	No suitable habitat occurs in survey area. **No Potential**
Brownish beaked-rush (*Rhynchospora capitellata*)	CRPR 2B.2	Moist to wet places; lower and upper montane coniferous forest, meadows and seeps, marshes and swamps.	July-August	No suitable habitat occurs in survey area. **No Potential**
Round-headed beaked-rush (*Rhynchospora globularis*)	CRPR 2B.1	Freshwater marsh.	July-August	No suitable habitat occurs in survey area. **No Potential**
Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*)	CRPR 1B.1	Rocky places, rhyolitic substrate; chaparral.	April-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**

Plant Species	Status[1]	Habitat[2]	Flowering Period	Potential for Occurrence on Project Site
Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)	FE, SE, CRPR 1B.1	Freshwater marsh, especially edges.	June-September	No suitable habitat occurs in survey area. **No Potential**
two-fork clover (*Trifolium amoenum*)	FE, CRPR 1B.1	Moist open sites, heavy soil, sometimes serpentine substrate, sometimes roadsides or eroded areas; coastal bluff scrub, valley and foothill grassland.	April-June	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Santa Cruz clover (*Trifolium buckwestiorum*)	CRPR 1B.1	Seasonally moist places, sometimes disturbed areas; coastal prairie, margins of cismontane woodland and broadleafed upland forest.	April-October	No suitable habitat occurs in survey area. Observable but not observed at time of April field survey. **No Potential**
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Moist or seasonally moist sites, alkaline or saline soil; marshes and swamps (including coastal salt marshes?), valley and foothill grassland, vernal pools.	April-June April-June	No suitable habitat occurs in survey area. **No Potential**
Oval-leaved viburnum (*Viburnum ellipticum*)	CRPR 2B.3	Often north-facing slopes; chaparral, cismontane woodland, lower montane coniferous forest.	May-June (August)	No suitable habitat occurs in survey area. Conspicuous shrub observable but not observed at time of field surveys. **No Potential**

[1]Plant listing status:

Federal (US Fish and Wildlife Service 2017): FE – endangered. State of California (California Department of Fish and Wildlife 2017): SE– endangered; ST – threatened; SR – rare
California Rare Plant Rank (CRPR) (CNPS 2020): CRPR 1B: Rare, Threatened, or Endangered in California and elsewhere. CRPR 2B: Rare, Threatened, or Endangered in California, more common elsewhere. CRPR 3: Plants about which more information is needed.

CRPR Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.

[2]In habitat descriptions, "?" indicates a discrepancy in habitat information between standard references (CNDDB; Baldwin et al. 2012; CNPS 2016).

All vascular plant species in identifiable condition at the times the survey was conducted, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in Baldwin et al. (2012). We also characterized all habitat types occurring in the survey area, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type. In classifying the habitat types of these areas, we consulted the generalized plant community classification schemes of Holland (1986); CDFG (2003, 2010a, b); and Sawyer et al. (2009). Our final classification and characterization of the habitat types of the survey area was based on field observations.

We identified 100 species of vascular plants growing without cultivation in the area surveyed, including 17 native and 81 non-native species. The nativity of two species observed in the survey area, turkey tangle fogfruit (*Phyla nodiflora*) and cleavers (*Galium aparine*), is not certain as standard references disagree or are uncertain as to their nativity (Munz and Keck 1973; Baldwin et al. 2012; Best et al. 1996). A list of all vascular plant species observed during the field visit is presented in Appendix A.

The eastern portion of the survey area slopes gently to the south and southwest, while the western portion and the southern extension to Melita Road are nearly level. We identified two habitat types in the survey area, California annual grassland and coast live oak woodland. The boundary between these two habitat types on the site is not sharply distinct, and is here recognized as the boundary between areas where tree cover is less than 50 percent (California annual grassland) and areas where tree cover is greater than 50 percent (coast live oak woodland). Species diversity is relatively high in both habitat types, although the species composition consists largely of non-natives. These habitat types are described below.

California annual grassland. The bulk of the survey area, consisting essentially of the eastern and central portions of the area and including the southward extension to Melita Road, is vegetated with California annual grassland that is more or less ruderal in character. This habitat type corresponds to the California annual grassland alliance of CDFG (2003) and to the non-native grassland habitat type of Holland (1986). In the classification schemes of Sawyer et al. (2009) and CDFG (2010a, b), this grassland is probably best referred to the *Bromus* (*diandrus*, *hordeaceus*) - *Brachypodium distachyon* (annual brome grasslands) semi-natural stands habitat type; to the *Avena* (*barbata*, *fatua*) (wild oats grasslands) semi-natural stands habitat type; to the *Lolium perenne* [= *Festuca perennis*] (perennial rye grass fields) semi-natural stands habitat type; or perhaps, locally, to the *Phalaris aquatica* (Harding grass swards) semi-natural stands habitat type, depending on local species composition, although some areas do not closely correspond to any of the habitat types recognized in these classification schemes. The California annual grassland habitat type generally corresponds to the valley and foothill grassland habitat type recognized by CNPS (2014).

The California annual grassland on the site was not grazed at the time of the surveys, but is periodically mowed; all of the grassland was mowed at some time between the April and June field visits. Its character has been altered by the introduction, and perhaps escape, of non-native landscaping or horticultural plants, and has apparently been subject to other periodic disturbance. Vegetation cover in this grassland is high, mostly 100 percent or nearly so. Despite the lack of grazing, the grasses and associated herbs were relatively low, mostly 1 to 2 feet tall, locally to three feet tall, at the time of the April field visit prior to mowing. The height of the grasses and herbs may have been reduced by mowing earlier in the 2014 growing season.

The dominant grasses in the grassland are non-native and primarily annual, although some non-native perennial grasses are locally abundant. Principal dominants include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), and Italian rye grass (*Festuca perennis* [= *Lolium multiflorum, L. perenne*]), may be annual, biennial, or perennial). Less common, but locally abundant, grasses include the annual species ripgut grass (*Bromus diandrus*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), and the perennial species Harding grass (*Phalaris aquatica*).

The species composition of the herbaceous associates of this grassland is quite diverse and heterogeneous. Although the herb species present are mostly non-native, a few native herb species are abundant or locally abundant, including miniature lupine (*Lupinus bicolor*), coast tarweed (*Madia sativa*), and Spanish-clover (*Acmispon americanus* var. *americanus* [= *Lotus purshianus*]). Characteristic non-native herb species in the grassland include bindweed (*Convolvulus arvensis*), common vetch (*Vicia sativa* ssp. *sativa*), narrow-leaved vetch (*Vicia sativa* ssp. *nigra*), rose clover (*Trifolium hirtum*), little hop clover (*Trifolium dubium*), chicory (*Cichorium intybus*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), roundleaf cancerwort (*Kickxia spuria*), clustered clover (*Trifolium glomeratum*), English plantain (*Plantago lanceolata*), prickly sow-thistle (*Sonchus asper*); bristly ox-tongue (*Helminthotheca* [*Picris*] *echioides*), and hairy cat's-ear (*Hypocharis radicata*).

Scattered trees and shrubs occur throughout the grassland on the site. Trees include the native coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and Oregon oak (*Quercus garryana*) and non-native species including English walnut (*Juglans regia*) and others, some of which were not identifiable and were obviously planted or escaped from nearby plantings. One native shrub, coyote brush (*Baccharis pilularis* ssp. *consanguinea*) is widely scattered - but not abundant - except in a few localized dense patches. A non-native grape, rock grape (*Vitis rupestris*), mostly a low shrub rather than a vine, is locally abundant near the east end of the site. A number of localized dense patches of the large non-native woody vine Himalayan blackberry (*Rubus armeniacus*) occur in the grassland as well as in and at the margins of the coast live oak woodland.

Two small, localized low-lying areas within the grassland appear to hold standing water for a time in early season, and have somewhat distinct vegetation. One of these areas is located at the north edge of the woodland in the southeast portion of the site, where it is in shade for part of the day, and is dominated by the non-native perennial grass tall fescue (*Festuca arundinacea*)[3]. The other area is near the northwest corner of the site and is largely dominated by the native herb tall flatsedge (*Cyperus eragrostis*), with soft chess, bur-clover (*Medicago polymorpha*), common vetch, brome fescue (*Festuca* [*Vulpia*] *bromoides*), and small quaking grass (*Briza minor*).

Coast live oak woodland. The largest area of coast live oak woodland occurs in the northern portion of the survey area. A narrow strip of coast live oak woodland occurs along the western boundary of the site, and another narrow strip occurs along the southern boundary in the southeastern portion of the site. This habitat type corresponds to a phase of the *Quercus agrifolia* (coast live oak woodland) alliance of Sawyer et al. (2009) and CDFG (2010a, b), and Klein et al (2015); to the coast live oak forest and woodland alliance of CDFG (2003), and to the coast live oak woodland habitat type of Holland (1986). In the classification scheme of Klein et al. (2015), it is best referred to the *Quercus agrifolia*/grass association within the coast live oak woodland alliance. In the classification scheme of CNPS (2014), this habitat type corresponds to a phase of the cismontane woodland habitat type.

The coast live oak woodland on the site consists of individual trees or small closed-canopy stands of trees interspersed with open areas. Coast live oak is the most abundant tree species. Other trees present include the native valley oak and Oregon oak and non-native species including silver wattle (*Acacia dealbata*), northern California black walnut (*Juglans hindsii*, native elsewhere in northern California but not in the survey area), blue gum (*Eucalyptus globulus*), and others that were not identifiable. The open areas are similar in physiognomy and species composition to the California annual grassland on the site. Shrubs are not abundant in this habitat type, but two invasive non-native shrubs, French broom (*Genista monspessulana*) and Spanish broom (*Spartium junceum*) occur locally, bath under tree canopy and in small openings, and the native shrub poison-oak (*Toxicodendron diversilobum*) is occasional, and occurs in one large, dense patch in the northern portion of the survey area. The low shrub Aaron's beard (*Hypericum calycinum*) occurs in one patch in the shady understory in the northern portion of the area. As noted previously, several dense patches of Himalayan blackberry occur in the woodland and around its margins.

The most abundant and widespread herb species in the shaded woodland understory is the non-native Robert geranium (*Geranium robertianum*). Other species that are relatively abundant, at least locally, in the understory, all non-native, include purple vetch (*Vicia benghalensis*), chicory, common chickweed (*Stellaria media*), Italian thistle (*Carduus pycnocephalus*), wild oat, Italian rye grass, wall barley (*Hordeum murinum* ssp. *leporinum*), and cleavers (possibly native). The native herb miner's-lettuce (*Claytonia*

[3] This species is listed as a facultative upland plant species.

perfoliata) is locally abundant at the northern edge of the woodland in the southeastern portion of the survey area.

No habitat types recognized as sensitive occur in the survey area. We did not observe any special-status plant species in the survey area that are native to the site. One species occurring on the site, northern California black walnut, is a special-status species where it is native. However, this species is widely naturalized. Best et al. (1996) indicate that it is doubtful whether the species is native in Sonoma County, and CNPS (2014) does not list Sonoma County as one of the counties where the species is native. Northern California black walnut is certainly naturalized rather than native in the survey area, as all of the trees present are too young to have predated the settlement of the area.

A total of 21 special-status plant species have low potential to occur in the survey area, based on regional occurrences and the fact that at least marginally suitable habitat occurs, or may occur, in the survey area (Table 1). However, all of these species would have been observable at the time or the April or June field surveys or both. Because no special-status plant species were observed during appropriately timed surveys, and due to the generally disturbed, ruderal nature of the habitat in the survey area, it is very unlikely that any special-status plant species occurs in the area.

Melita Road Site

California Environmental Services senior botanist Dr. Roy Buck conducted a botanical survey of the proposed storm drain site adjacent to Melita Station on April 18, 2015. The timing of this survey was adequate for identification of most special-status plant species with potential to occur in the survey area.

The site was surveyed on foot with 100 percent coverage. The area surveyed is shown on a map titled, “Spring Lake Village - East Grove Offsite Waters of the US Exhibit”, produced by Adobe Associates, Inc. and dated March 31, 2015. On the north side of Melita Road, this survey area included an area approximately 20 feet wide and extending approximately 100 feet west of a point directly opposite a fence line bordering the Melita Inn property on the west. On the south side of Melita Road, the survey area was an area approximately 50 feet wide in the east-west direction centered on an existing culvert and extending approximately 60 feet south of the south edge of Melita Road.

All vascular plant species in identifiable condition at the times the survey was conducted, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in Baldwin et al. (2012). We also characterized all habitat types occurring in the survey area, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate

conditions, hydrologic regime, and evident disturbance for each habitat type. In classifying the habitat types of these areas, we consulted the generalized plant community classification schemes of Holland (1986); CDFG (2003, 2010a, b); and Sawyer et al. (2009). Our final classification and characterization of the habitat types of the survey area was based on field observations.

We identified 41 species of vascular plants growing without cultivation in the area surveyed, including 12 native and 27 non-native species. The nativity of two species observed in the survey area, a dock (*Rumex* sp.) and cleavers (*Galium aparine*), are not certain. The dock could only be identified to genus, and both native and non-native species could occur in the survey area. Standard references disagree or are uncertain as to the nativity of cleavers (Munz and Keck 1973; Baldwin et al. 2012; Best et al. 1996). A list of all vascular plant species observed during the field visit is presented in Appendix A.

The portion of the survey area north of Melita Road borders a developed area and is essentially level and has been heavily disturbed. This habitat is classified as ruderal and is described below.

Ruderal. The portion of the survey area north of Melita Road is occupied by ruderal vegetation. This habitat type is artificial, in the sense that it is associated with heavy and ongoing human disturbance. Several trees grow in this area: three valley oaks, one coast live oak (alive, but with the trunk broken off 7-8 feet above the ground) and one California buckeye (Aesculus californica). The area otherwise supports an assemblage of grasses and herbaceous species, mostly weedy non-natives. These include hare barley (Hordeum murinum ssp.leporinum), slender wild oat (Avena barbata), prickly lettuce (Lactuca serriola), bur-chervil (Anthriscus caucalis), bur-clover (Medicago polymorpha), spinyfruit buttercup (Ranunculus muricatus), wild radish (Raphanus sativus), and common vetch (Vicia sativa ssp. sativa).

We did not observe any special-status plant species in the survey area. Most, but not all, of the special-status plant species with potential to occur in the vicinity of the survey area would have been observable at the time the survey was conducted. Suitable habitat for most special-status plant species with potential to occur in the vicinity of does not occur in the survey area. Because of the general lack of suitable habitat and the small size of the area, it is very unlikely that any special-status plant species occurs in the survey area.

Off-site Improvements

Dr. Buck conducted a botanical survey of the off-site improvements areas on August 29, 2016. The proposed off-site improvements are shown on a map titled "Spring Lake Village East Grove Development. Overall Site Plan" produced by Perkins Eastman and dated August 16, 2016. Details of the areas surveyed are as follows:

- Proposed pedestrian path to Hope Chapel parking lot: The entire area between the western Spring Lake Village East site boundary and the existing Hope Chapel parking lot along approximately the northern third of the site boundary was surveyed.
- Proposed pedestrian path along Los Alamos Road: The survey area extends south from the junction of Highway 12 and Los Alamos Road to the south boundary of the Spring Lake Village East site, and extends west from the western edge of the pavement on Los Alamos Road to approximately 30 feet west of the roadside ditch. This entire area was previously surveyed in 2014 during the original survey of the main Spring Lake Village East site.
- Proposed new sidewalk along Montgomery Drive: The area surveyed extends west along the north side of Montgomery Drive from the Melita Road intersection west approximately 600 feet to the end of an existing sidewalk just west of an existing paved driveway, and extending approximately 30 feet north of the edge of the pavement on Montgomery Drive.

All survey areas were surveyed on foot with 100 percent coverage. All vascular plant species in identifiable condition at the times the survey was conducted, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in Best et al. (1996), Baldwin et al. (2012), and Jepson Flora Project (2016). We also characterized all habitat types occurring in the survey area, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type.

The habitats in the surveyed areas are described below.

Proposed pedestrian path to Hope Chapel parking lot. The area where the proposed pedestrian path would be located is a steep east-facing slope. The vegetation on this slope is best described as intermediate between coast live oak woodland and coastal scrub. Toward the south end of the area surveyed there is a dense stand of trees, mostly coast live oaks (*Quercus agrifolia*), with valley oaks (*Quercus lobata*) an associate tree species. The understory is sparsely vegetated; the native shrub poison-oak (*Toxicodendron diversilobum*) is moderately abundant, and the non-native woody vine Himalayan blackberry (*Rubus armeniacus*) and the non-native perennial grass Harding grass (*Phalaris aquatica*) are local. Scattered individuals of the native shrub coyote brush (*Baccharis pilularis* ssp. *consanguinea*) occur along the margin of this stand of trees at the base of the slope.

To the north, the slope is dominated by a relatively dense cover of coyote brush. Small individuals of coast live oak are intermixed, with several small trees of coast redwood (Sequoia sempervirens, native further west in Sonoma County but not in the vicinity of the survey area) near the top of the slope. The cultivated grape (*Vitis vinifera*, here escaped from cultivation) occurs locally in this area. One medium-sized tree each of coast live oak and valley oak occur near the base of the slope in this area.

The top of the slope adjacent to the Hope Chapel parking lot is level and has been repeatedly disturbed. One dense clump of coyote brush occurs in this area; elsewhere, the vegetation consists primarily of a rather sparse (40 percent) cover of weedy non-native grasses and herbs, with scattered small individuals of coast live oak and coyote brush. A dense clump of the non-native low shrub Aaron's beard (*Hypericum calycinum*), a horticultural escape, occurs near the top of the slope.

Proposed pedestrian path along Los Alamos Road. Except for the extreme southern end, the proposed pedestrian path would traverse California annual grassland with scattered trees and shrubs. At the extreme southern end, the pedestrian path would pass through coast live oak woodland.

The California annual grassland along most of the proposed route is dominated by non-native annual grasses and associated herbs. The grasses were mostly not identifiable at the time the survey was conducted, but dominant grasses noted in the 2014 survey of the Spring Lake Village East site include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), and Italian rye grass (*Festuca perennis*). The non-native perennial grass (*Cynodon dactylon*, identifiable at the time the survey was conducted) is locally abundant along the proposed route. Associated herb species along the proposed route include the native (but often weedy) species Spanish-clover (*Acmispon americanus* var. *americanus*) and the non-native species chicory (*Cichorium intybus*), English plantain (*Plantago lanceolata*), and black mustard (*Brassica nigra*). In the coast live oak woodland at the south end of the proposed route, the trees present are coast live oak and the non-native species silver wattle (*Acacia dealbata*).

Proposed new sidewalk along Montgomery Drive. At the extreme east end, adjacent to the intersection of Montgomery Drive, the habitat along the proposed sidewalk alignment is developed with landscaping, on the grounds of the Mellita Station Inn. Westward for approximately 375 feet, Montgomery Drive is bordered on the north by a steep bank dropping off to the floodplain of Santa Rosa Creek, which passes under the roadway in a culvert in this area. The vegetation on the floodplain in this area is willow riparian forest, dominated by the native tree species arroyo willow (*Salix lasiolepis*, technically an arborescent shrub), Pacific willow (*Salix lasiandra*), white alder (*Alnus rhombifolia*), and, locally, Oregon ash (*Fraxinus latifolia*). The understory is largely dominated by a dense cover of Himalayan blackberry, intermixed west of Santa Rosa Cree with the native species California blackberry (*Rubus ursinus*). Herb species occurring sporadically in this understory include the native species giant horsetail (*Equisetum telmateia* ssp. *braunii*) and the non-native species lemon balm (*Melissa officianali*s), English ivy (*Hedera helix*),and greater periwinkle (*Vinca major*). A steep slope borders the floodplain on the western side. Large coast live oaks are present along the top of the slope.

Toward the west end, the proposed alignment traverses nearly level ground vegetated primarily with ruderal grassland that has been repeatedly disturbed. Two small coast live oaks along with ornamental trees including coast redwood, London plane tree (*Platanus × hispanica*), and others. The grassland is dominated by slender wild oat and other grasses. Associated herbs include such weedy non-native species as prickly lettuce (*Lactuca serriola*), rose clover (*Trifolium hirtum*), and fennel (*Foeniculum vulgare*). At the far west end, west of the existing driveway, the proposed alignment is unvegetated gravel, with a dense stand of small to medium-sized coast live oaks located near the end of the existing sidewalk.

We did not observe any special-status plant species in the areas surveyed. Although the survey was conducted in late season when many special-status plant species with potential to occur in the vicinity would not have been identifiable, the likelihood that any special-status plant species occurs in the areas surveyed is low, due to the small areas involved and the fact that the habitats present are generally not suitable for most special-status plant species with potential to occur.

We recognize the willow riparian forest on the floodplain of Santa Rosa Creek north of the proposed Montgomery Drive sidewalk alignment as a sensitive habitat type however this area is not within the project limits.

5803 and 5815 Melita Road Parcels

Prior to conducting the field survey of the 5803 and 5815 Melita Road parcels, we again reviewed CNDDB and the CNPS *Inventory* and updated the target list as appropriate.

Californian Environmental Services senior botanist Dr. Roy Buck conducted a botanical survey of the 5803 and 5815 Melita Road parcels on April 20, 2017. The timing of this survey was adequate for identification of most special-status plant species with potential to occur in the survey area.

The parcels were surveyed on foot with 100 percent coverage. The area surveyed consisted of parcels APN 031-101-034 and APN 031-101-035, as shown on a map titled, "Spring Lake Village - East Grove Aerial Map", produced by Adobe Associates, Inc. and dated January 13, 2017.

All vascular plant species in identifiable condition at the time the survey was conducted, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in Best et al. (1996), Baldwin et al. (2012), and Jepson Flora Project (2017). We also characterized all habitat types occurring in the survey area, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type.

We identified 43 species of vascular plants growing without cultivation in the area surveyed, including six native and 36 non-native species. The nativity of one species observed in the survey area, a bedstraw (*Galium* sp.), could not be determined with certainty as it could only be identified to genus, and both native and non-native species could occur in the survey area. A list of species observed is included in Appendix A.

Essentially the entire area of the 5803 and 5815 Melita Road parcels is developed. We recognize most of the area as occupied by the developed habitat type. One area in the western portion of the 5815 Melita Road parcel that has been heavily and repeatedly disturbed but contains no buildings or other developed features is recognized as occupied by the ruderal habitat type. Much of the area of the two parcels is occupied by buildings, other developed features (e.g. driveways, a swimming pool), landscaped areas, regularly mowed lawns, and a cultivated area in the western portion of the 5815 Melita Road parcel.

Areas not occupied by developed features are vegetated primarily with weedy non-native species; such species also commonly occur in lawns and landscaped areas. Common species include slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), hare barley (*Hordeum murinum* ssp.*leporinum*), annual bluegrass (*Poa annua*), cut-leaved geranium (*Geranium dissectum*), bur-clover (*Medicago polymorpha*), pricklefruit buttercup (*Ranunculus muricatus*), bristly ox-tongue (*Helminthotheca echioides*), and English plantain (*Plantago lanceolata*). One native herb species, western toad rush (*Juncus bufonius* var. *occidentalis*) is locally abundant especially in lawns; another native species, California brome grass (*Bromus carinatus* var. *carinatus*), is occasional but widely scattered. Scattered trees of the native species coast live oak

(*Quercus agrifolia* var. *agrifolia*) and valley oak (*Quercus lobata*) as well as species not indigenous to the area, e.g. coast redwood (*Sequoia sempervirens*, native in portions of Sonoma County but not in the vicinity of the study area) and olive (*Olea europaea*) occur throughout the parcels.

We did not observe any special-status plant species in the survey area. Many, but not all, of the special-status plant species with potential to occur in the vicinity of the survey area would have been observable at the time the survey was conducted. Due to the intensive development of the survey parcels, and the ruderal nature of areas not occupied by developed features, it is unlikely that any special-status plant species occur on the parcels. There is some potential for one special-status plant species, congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), to occur on the parcels. This species occurs in grassy areas, and sometimes occurs in areas that have been heavily and repeatedly disturbed. This species might not have been identifiable at the time the survey was conducted; while it is sometimes in flower and identifiable as early as April, it is often not in flower and identifiable until June (Roy Buck, personal observation). However, due to the small area of potentially suitable habitat in the survey parcels, this species is deemed to have low potential to occur.

On May 28, 2020 the entire project site was surveyed again for special-status plants. Ms. Micki Kelly, Principal Botanist with Kelly Biological Services, conducted the survey. No rare plants were observed. A copy of the rare plant survey report will be provided upon completion.

Native Oak Trees

The City of Santa Rosa tree ordinance requires permits for the removal, alteration or relocation of all trees with a 4” or greater diameter in all zoning districts where development is being proposed or may occur in the future. Oak tree removal on the project site will be mitigated with implementation of the proposed Conceptual Planting Plan and Tree Mitigation Plan prepared for the project (See chart on Sheet L2.0).

TREE LEGEND

KEY	TREES	COMMON NAME	SIZE	REMARKS
ABH	ACER 'BOWHALL'	-	24" BOX	2" CAL, STANDARD
AM	ARBUTUS MARINA	HYBRID MADRONE	MULTI. - 8-10" TALL	
APK	ACER PLATANOIDES 'CRIMSON KING'	-	36" BOX	3" CAL, STANDARD, 12'-14' TALL
ARO	ACER RUBRUM 'OCTOBER GLORY'	-	24" BOX	2" CAL, STANDARD, LOW BRANCHED
CAG	CEDRUS A. 'GLAUCA'	-	36" BOX	3" CAL, STANDARD
CJ	CARPINUS JAPONICA	-	24" BOX	2" CAL, STANDARD, 10'-12' TALL
FL	FRAXINUS LATIFOLIA	-	15 G.	-
FT	FRUIT TREES	MIXED	1/24 GRAFTED	-
LID	LAGERSTROEMIA I. DYNAMITE	CRAPE MYRTLE	36" BOX	3" CAL, STANDARD, UPRIGHT BRANCHED
MC	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	15" BOX	6-7' TALL, BUSH FORM
OE	OLEA EUROPEA	OLIVE	FIELD DUG	MULTI - 18-20' TALL
OSH	OLEA 'SWAN HILL'	FRUITLESS OLIVE	24" BOX	-
PC	PISTACHE CHINENSIS	-	36" BOX	3" CAL, STANDARD
PP	PARROTIA PERSICA	-	24" BOX	8-10' TALL
QA	QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX	STD. 2" ø, CAL., LOW BRANCHED
QK	QUERCUS KELLOGGI	BLACK OAK	24" BOX	STD. 2" ø, CAL., LOW BRANCHED
RP	ROBINIA PSEUDOACACIA 'PURPLE ROBE'	-	36" BOX	STD. 3" ø, CAL., 12-14' TALL
TGG	THUJA 'GREEN GIANT'	-	48" BOX	STD., 1-1/2"ø, 8-10', CAL., LOW BRANCHED
TLE	TRISTANIA L. 'ELEGANT'	-	24" BOX	STD., 1-1/2"ø, 8-10', CAL., LOW BRANCHED

SEE SHEET L2.1 FOR PLANTING ZONES AND PLANT LEGEND

Hope Chapel of Santa Rosa
APN 031-101-059

ZONE 3
HILLSIDE, NATIVE & ADAPTABLE PLANTINGS

ZONE 1
RIPARIAN & MEADOWS PLANTING

ZONE 2
MIXED NATIVE & MEDITERRANEAN ORNAMENTAL TREES, SHRUBS & GRASS PLANTINGS

VILLA
323.5 SLAB
(1st FLOOR)

COMMUNITY BLDG
329.0 SLAB

POOL

COTTAGE 1 337.7 SLAB
COTTAGE 2 339.8 SLAB
COTTAGE 3 338.0 SLAB
COTTAGE 4 334.0 SLAB
COTTAGE 5 326.7 SLAB
COTTAGE 6 332.0 SLAB
COTTAGE 7 320.7 SLAB
COTTAGE 8 319.3 SLAB
COTTAGE 9 320.2 SLAB
COTTAGE 10 321.5 SLAB

BIO-RETENTION & DETENTION BASIN #1
BIO-RETENTION & DETENTION BASIN #2

MELITA ROAD
MONTGOMERY DRIVE
LOS ALAMOS ROAD
ELVEVA
HWY 12

Resende Frank & Carol J. APN 031-101-060
Peryda Allen APN 031-101-028
APN 031-101-027

TREE MITIGATION CHART

QTY.	TREE TYPE (SEE LEGEND)	MITIGATION TREE CONTAINER SIZE OR EQUIVALENT	15 GAL MITIGATION EQUIVALENT
8	FT	15 GAL	8
12	MC	15 GAL	12
18	OE	15 GAL	18
SUB TOTAL: 37			SUB TOTAL: 37
6	ABH	24" BOX (2-3) GAL/BOX	18
12	AP	24" BOX (2-3) GAL/BOX	36
7	CJ	24" BOX (2-3) GAL/BOX	21
10	OSH	24" BOX (2-3) GAL/BOX	30
21	PP	24" BOX (2-3) GAL/BOX	63
34	QA	24" BOX (2-3) GAL/BOX	102
11	TLE	24" BOX (2-3) GAL/BOX	33
SUB TOTAL: 101			SUB TOTAL: 303
14	AM	36" BOX (3-5) GAL/BOX	126
11	APK	36" BOX (3-5) GAL/BOX	99
2	CAG	36" BOX (3-5) GAL/BOX	18
14	LID	36" BOX (3-5) GAL/BOX	126
6	PC	36" BOX (3-5) GAL/BOX	54
SUB TOTAL: 47			SUB TOTAL: 423
33	TGG	48" BOX (5-10) GAL/BOX	275
2	RP	48" BOX (5-10) GAL/BOX	84
SUB TOTAL: 35			SUB TOTAL: 360

TOTAL TREES: 215 REPLACED
TOTAL 15 G. TREE MITIGATION EQUIVALENT: 1123
TOTAL 15 G. TREE MITIGATION REQUIRED: 804
TOTAL 15 G. TREE MITIGATION OVER REQUIRED AMOUNT: +218
[SEE HORTICULTURAL ASSOCIATES TREE INVENTORY, [8/27/17] OR CIVIL DRAWINGS, SEE SHEET C1.1]

MATCHLINE, PART A - SHEET L2.1

NO.	DATE	ISSUE

LICENSED LANDSCAPE ARCHITECT
MARK W. BOWERS
No. 2525
Signature
Renewal Date
Date
STATE OF CALIFORNIA

SEAL

KEY PLAN

Perkins Eastman
23 GEARY STREET, SUITE 500
SAN FRANCISCO, CA 94108
T. 415.926.7900
F. 415.926.7733
1100 LIBERTY AVENUE
PITTSBURGH, PA 15222
T. 412.456.0900
F. 412.456.0906

Owner:
EPISCOPAL SENIOR COMMUNITIES, INC.
2185 N. CALIFORNIA BLVD, SUITE 575
WALNUT CREEK, CA 94596
TEL. (925) 956-7355

Civil / Site
ADOBE ASSOCIATES
1220 NORTH DUTTON AVENUE
SANTA ROSA, CA 95401
TEL. (707) 541-2300

Landscape:
RESOURCE DESIGN
835 PINER ROAD, SUITE E
SANTA ROSA, CA 95403
TEL. (707) 526-5009

Arborist:
HORTICULTURAL ASSOCIATES
P.O. BOX 1261
GLENN ELLEN, CA 95442
TEL. (707) 935-3911

Design & Development Consultant:
GERVAIS & ASSOCIATES
50 SANTA ROSA AVENUE, SUITE 400
SANTA ROSA, CA 95404
TEL. (707) 975-4736

PROJECT TITLE

SPRING LAKE VILLAGE
WEST GROVE
DEVELOPMENT

LOS ALAMOS DRIVE
SANTA ROSA, CA 95409

PROJECT No: 53681.00

DRAWING TITLE

PRELIMINARY
PLANTING PLAN
& TREE MITIGATION

SCALE: 1" = 30'-0"

L2

PRELIMINARY DESIGN REVIEW RESUBMISSION
MAIN STREET MODIFIED ORIGINAL ALTERNATIVE

SEPTEMBER 27, 2017

5.0 SPECIAL-STATUS ANIMALS

5.1 Background Review and Field Assessment for Special-status Animals

The California Department of Fish and Wildlife's Natural Diversity Database (CNDDB, 2020) was reviewed (Santa Rosa and surrounding quadrangles) to identify special-status species potentially occurring on or in the vicinity of the project site. Based on information from the above sources, a target list of special-status animals with potential to occur in the vicinity of the study area was developed (Table 2). Figure 3 illustrates special-status animal occurrences recorded within a 5-mile radius of the project site.

5.2 Results

The trees, shrubs, and grasslands on the project site provide potential foraging habitat for a variety of birds and raptors. The mature trees on the property provide potential habitat for roosting special-status bats as well.

The portion of the property on Melita Road that abuts the Santa Rosa Creek corridor also provides potential habitat for nesting birds. Santa Rosa Creek also provides potential habitat for steelhead trout, Pacific Pond turtle, California giant salamander, and red-bellied newt and potential dispersal habitat for California red-legged frog. Further discussion of these species is provided below.

5.2.1 Nesting Birds and Raptors

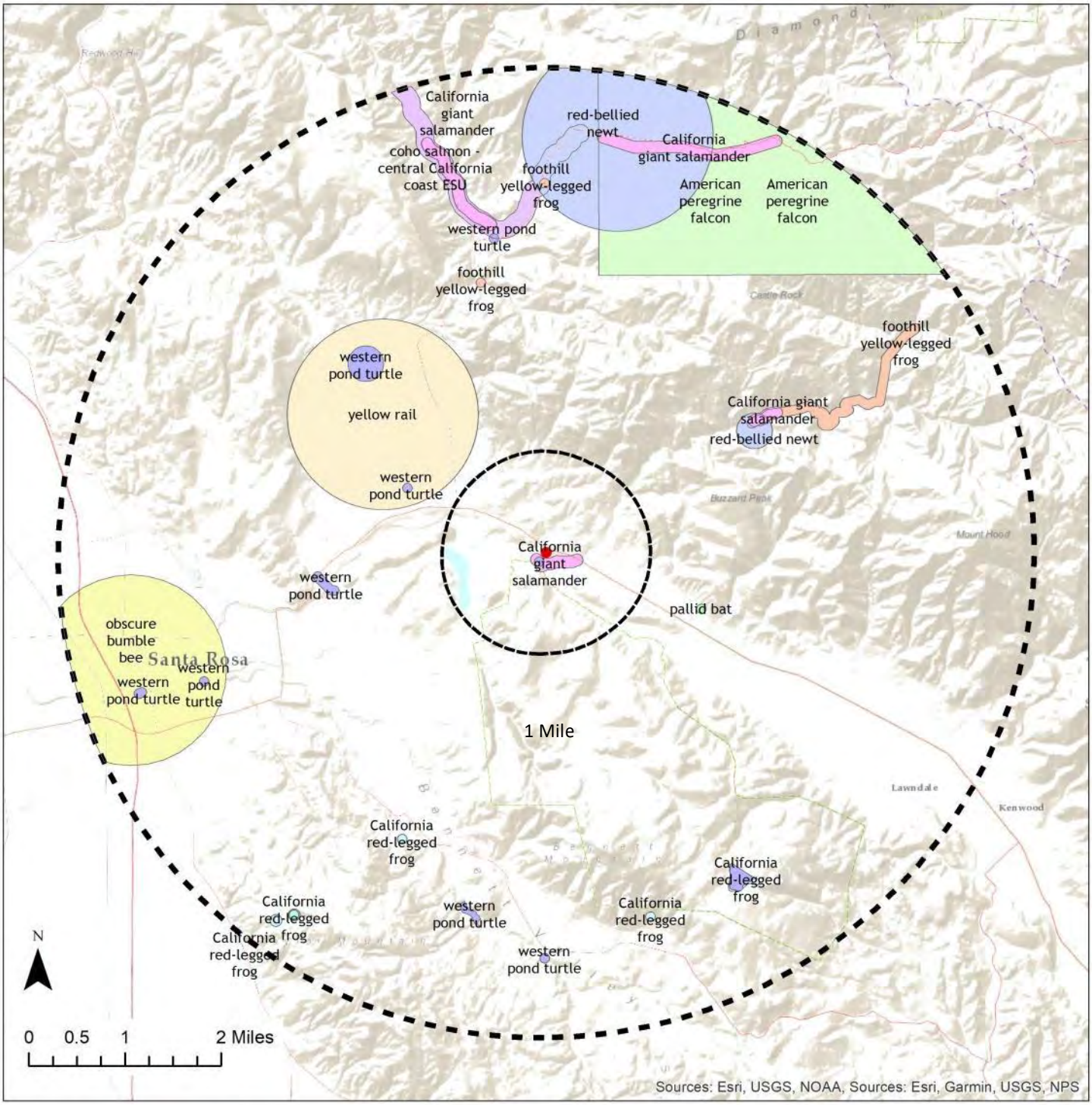
The trees on the site provide habitat for a variety of nesting birds and raptors. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). Their nest, eggs, and young are also protected under California Fish and Wildlife Code (§3503, §3503.5, and §3800). In addition, raptors such as the white-tailed kite (*Elanus leucurus*) are "fully protected" under Fish and Wildlife Code (§3511). Fully protected raptors cannot be taken or possessed (that is, kept in captivity) at any time.

5.2.2 Special-status Bats

The trees on the project site provide potential roosting habitat for various special-status bat species known to occur in the project region including but not limited to pallid bat (*Antrozous pallidus*), Pacific western big- eared bat (*Corynorhinus townsendii townsendii*), and long-eared myotis (*Myotis evotis*). These bat species are California Species of Special Concern and may roost in mature trees, snags, crevices, cavities, and foliage within this habitat. Maternity roosting for bats is April through November.

Figure 3: Special Status Animal Species within 1 Mile and 5 Miles of the Project Site

SLV East Grove Project, Santa Rosa, CA



Date: 2-24-2020
Data: Sol Ecology Inc., Sonoma Co., CDFW

Base: ESRI
GIS: AJG

SOL ECOLOGY
solecology.com

Table 2 - Special-status Animal Species Potentially Occurring on or Near Spring Lake Village East Expansion Project Site, Santa Rosa, California

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Fish			
Steelhead-Central California Coast ESU (*Oncorhynchus mykiss irideus*)	FT	Anadromous. Generally prefer fast water in small-to-large mainstem rivers, and medium-to-large tributaries.	Potential for occurrence in Santa Rosa Creek.
Amphibians and Reptiles			
California tiger salamander (*Ambystoma californiense*)	FE[4], FT, ST	Needs underground refuges especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	No suitable breeding areas on site.
Pacific pond turtle (*Emys marmorata*)	SSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites, nest sites may be found up to 0.5 km from water.	Potential for occurrence in Santa Rosa Creek.
California red-legged frog (*Rana aurora draytonii*)	FT, SSC	Lowlands and foothills in or near permanent sources of deepwater with dense, shrubby or emergent riparian vegetation.	Potential to disperse though Santa Rosa Creek in project vicinity.
Foothill yellow-legged frog (*Rana boylii*)	SSC[5]	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Potential for occurrence in Santa Rosa Creek.

[4] Listed as federally endangered in Sonoma County (Santa Rosa Plain) and Santa Barbara counties.
[5] The foothill yellow legged frog is listed as a Species of Concern in Sonoma County only.

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Red-bellied newt (*Taricha rivularis*)	SSC	Coastal drainages from Humboldt County to Sonoma County and inland to Lake County. Lives in terrestrial habitats and typically breeds in streams with moderate flow and clean rocky substrate.	Potential for occurrence in Santa Rosa Creek.
California giant salamander (*Dicamptodon ensatus)*	SSC	Known from coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Adults may be found under rocks, logs and other debris adjacent to water sources. Aquatic larvae are found in cold, clear streams, sometimes in lakes or ponds	Potential for occurrence in Santa Rosa Creek.
Birds**			
Tricolored blackbird (*Agelaius tricolor*)	SSC, USFWS CE	Colonial nester. Most numerous in the Central Valley & Vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	No suitable habitat on site.
Burrowing owl (*Athene cunicularia*)	SSC	Open, dry annual or perennial grasslands; deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent on burrowing animals, most notably the California ground squirrel.	Low potential.
Swainson's hawk (*Buteo swainsoni*)	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain field supporting rodent populations.	Project site does not provide suitable foraging or nesting habitat.
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT, SSC	Sandy beaches, salt ponds levees and shores of alkali flats.	No suitable habitat on site.

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Northern harrier (*Circus cyaneus*)	SSC	Prefers open country, like grasslands, steppes, wetlands, meadows, cultivated areas.	Grasslands provide potential foraging habitat and trees potential nesting habitat.
Western yellow billed cuckoo (*Coccyzus americanus occidentalis*)	FC, SE	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with low story of blackberry, nettles or wild grape.	No suitable habitat on site
Black swift (*Cypseloides niger*)	SSC	(Nesting) coastal belt of Santa Cruz & Monterey County; central and southern Sierra Nevada; San Bernadino and San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf.	No suitable habitat on site.
White-tailed kite (*Elanus leucurus*)	CDFW FP	(Nesting) rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	Grasslands provide potential foraging habitat and trees potential nesting habitat.
American peregrine falcon (*Falco peregrinus anatum*)	SFP, BCC	Near wetlands, lakes, rivers or other waters. On cliffs, banks, dunes and mounds as well as human-made structures.	No suitable nesting habitat on site. Grasslands provide marginal foraging habitat.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	SSC, USFWS BCC	Mostly breeds and winters in wet meadows, fresh emergent wetland, and saline emergent wetland habitats in the San Francisco Bay region. Microhabitat includes thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	No suitable habitat on site.

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Bald eagle *(Haliaeetus leucocephalus)*	SE	Ocean shore, lake margins, and rivers both for nesting and wintering within one mile of water. Nests in large, old growth or dominant live tree with open branches, especially Ponderosa pine.	Grasslands provide potential foraging habitat. No recorded occurrences within 5 miles of project site.
San Pablo song sparrow (*Melospiza melodia samuelis*)	SSC	Residents of salt marshes along the north side of San Francisco and San Pablo Bays.	No suitable habitat on site.
California clapper rail (*Rallus longirostris obsoletus*)	FE, SE	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Microhabitats associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	No suitable habitat on site.
Bank swallow (*Riparia riparia*)	ST	(Nesting) Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks or cliffs with fine-textured/sandy soils near streams, river, lakes, and ocean to dig nest hole.	No suitable habitat on site.
Mammals			
Pallid bat (*Antrozous pallidus*)	SSC, WBWG-H	Deserts, grasslands, woodlands and forests. Most common in open dry habitats with rocky areas for roosting. Very sensitive to disturbance of roosting sites.	Trees provide potential habitat.
Long-eared myotis (*Myotis evotis*)	WBWG-M	Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests. Maternity roosts in buildings and tree cavities.	Trees provide potential habitat.
Salt-marsh Harvest Mouse (*Reithrodontomys raviventris)*	FE, SE	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat.	No suitable habitat on site.

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC, State candidate T, WBWG-H	Throughout California in a variety of habitats. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Trees provide potential habitat.
American badger (*Taxidea taxus*)	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	No burrows were observed during assessments conducted from 2014-2020.
Suisun shrew (*Sorex ornatus sinuosus*)	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying cover and driftwood and other litter above the mean high tide line for nesting and foraging.	No suitable habitat on project site.
Invertebrates			
Obscure bumblebee (*Bombus coliginosus*)	IUCN-VU	Coastal areas from Santa Barbara County to north Washington State. Host plants include coyote bush, lupine, and grindelia.	Site provides potential habitat due to presence of some host plants.
Leech's skyline diving beetle (*Hydroporus leechi*)	FSC	Aquatic habitats.	Potential habitat may be present in Santa Rosa Creek.
California linderiella (*Linderiella occidentalis*)	FSC	Grassland vernal pool ecosystems.	No suitable habitat on site.
California freshwater shrimp (*Syncaris pacifica*)	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low gradient streams where riparian cover is moderate to heavy. Recorded occurrences in Sonoma Creek.	No suitable habitat on site.
Myrtle's silverspot (*Speyeria zerene myrtleae*)	FE	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from Coastal San Mateo County. Larval foodplant thought to be Viola adunca	No suitable habitat on site.

*Note: FSC = U.S. Fish and Wildlife Service Species of Concern; FE = federally listed as endangered; FT = federally listed as threatened; SE = state listed as endangered; ST = state listed as threatened; SFP = State fully protected (may not be taken or possessed without a permit from the Fish and Wildlife Commission and/or CDFW). SSC = State species of special concern; CDFS = considered sensitive by the California Department of Forestry. WBWG_H or M = Western Bat Working Group High or Medium Priority. IUCN-V = International Union for Conservation of Nature, vulnerable.

**All migratory birds are protected by the Migratory Bird Treaty Act (50 CFR 10), which makes it unlawful to take, possess, buy, sell, purchase or barter any migratory bird, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). In addition, Section 2080 of the California Fish and Wildlife Code prohibits the killing of a listed species, and Sections 3503, 3503.5, and 3800 of the Fish and Wildlife Code prohibit the take, possession, or destruction of birds, their nests, or eggs.

Table compiled based on review of California Department of Fish and Wildlife Natural Diversity Database for the Santa Rosa and surrounding USGS quadrangles. February 2020.

5.2.3 California Red-legged Frog (*Rana aurora draytonii*)

Santa Rosa Creek provides potential dispersal habitat for California red-legged frog (CRLF). CRLF is a Federal Threatened Species and a California Department of Fish and Wildlife (CDFW) Species of Special Concern. This species is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLF estivate (period of inactivity) during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds.

Work within the Santa Rosa Creek corridor will be limited to approximately 120 square feet on the west side of Melita Road for installation of the storm drain outlet. This area may be characterized as ruderal (oat and non-native blackberry) therefore there will not be a loss of habitat for the CRLF as a result of the project.

5.2.4 Foothill yellow-legged frog (*Rana boylii*)

Santa Rosa Creek provides potential habitat for Foothill yellow-legged frog (FYLF) which is a California Species of Special Concern in Sonoma County. This species is found in woodland and forest streams and rivers, and prefers flowing water with a rocky substrate (including at least some cobble-sized substrate), to which egg masses are attached. The foothill yellow-legged frog (FYLF) does not aestivate and is rarely found far from a source of permanent water. Recent studies have found that FYLF are rarely found more than 12 meters from the stream channel but may move upstream or downstream as far as 7 km in response to water availability (Thomson, Wright, and Shaffer 2016). The average distance adults were found outside the stream channel was 3 meters in all seasons with a maximum distance of 40 meters. Studies also found that metamorphosed FYLF's diet is comprised of terrestrial insects primarily including spiders, beetles, and flies. Historically, this species was known to occur in most Pacific drainages from Oregon to Los Angeles (Jennings and Hayes 1994). Populations have declined due to siltation and the introduction of bullfrogs and exotic fish.

Work within the Santa Rosa Creek corridor will be limited to approximately 120 square feet on the west side of Melita Road for installation of the storm drain outlet. This area is dominated by oat and some blackberry therefore there will not be a loss of habitat for the FYLF as a result of the project.

5.2.5 California giant salamander (*Dicamptodon ensatus*)

Santa Rosa Creek provides potential habitat for California giant salamander, which has recently been listed as a Species of Special Concern by CDFW. The California giant salamander is know from coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Adults may be found under rocks, logs and other debris adjacent to water sources. Aquatic larvae are found in cold, clear streams, sometimes in lakes or ponds (CNDDB, 2017).

5.2.6 Red-bellied Newt (*Taricha rivularis*)

Santa Rosa Creek and surrounding forest provide potential habitat for red-bellied newt, which has recently been listed as a Species of Special Concern by CDFW. This species is found in coastal drainages from Humboldt County to Sonoma County and inland to Lake County. This species lives in terrestrial habitats and typically breeds in streams with moderate flow and clean rocky substrate.

5.2.7 Pacific Pond Turtle (*Emmys marmorata*)

Santa Rosa Creek provides potential habitat for Pacific Pond turtle. PPT is the only native freshwater turtle in California and is a CDFW Species of Special Concern. This turtle inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. PPT also occupies man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. PPT requires suitable aquatic habitat for most of the year; however, PPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, PPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuge and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

PPT nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within 5 to 100 meters of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to locate and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year.

5.2.8 Steelhead Trout (*Oncorhynchus mykiss*)

Steelhead are part of the Central California Coast ESU (evolutionarily significant unit); this species is federally listed as threatened. Steelhead are known to historically occur in Santa Rosa Creek. They generally prefer fast water in small-to-large mainstem rivers, and medium-to-large tributaries. In streams with steep gradient and large substrate, they spawn between these steep areas, where the water is flatter and the substrate is small enough to dig into.

Best management practices will be utilized during construction of the project and will include the use of silt fencing, wattles and storm water inlet protection measures to ensure that stormwater entering into Santa Rosa Creek will minimize or avoid potential siltation impacts. As a result potential construction-related impacts to steelhead will be avoided.

5.3 Recommendations and Mitigation Measures

The following mitigation measures are recommended for avoiding potential impacts to special-status species on the project site.

5.3.1 Nesting Birds

- If initial ground disturbance or vegetation removal occurs during the breeding season (February 1 through August 31), a qualified biologist will conduct a breeding bird survey no more than 7 days prior to ground disturbance to determine if any birds are nesting in trees adjacent to the study area.
- If active nests are found close enough to the study to affect breeding success, the biologist will establish an appropriate exclusion zone around the nest. This exclusion zone may be modified depending upon the species, nest location, and existing visual buffers. Once all young have become independent of the nest, vegetation removal and grading may take place in the former exclusion zone.
- If initial ground disturbance is delayed or there is a break in project activities of greater than 14 days within the bird-nesting season, then a follow-up nesting bird survey should be performed to ensure no nests have been established in the interim.

5.3.2 Maternity Roosting Bats

- If initial ground disturbance occurs during the bat maternity roosting season (May 1 through August 31), a qualified biologist will conduct a bat roost assessment of trees within 100 feet of the Study area.

- If the biologist determines there is potential for maternity roosting bats to be present within 100 feet of the Study area, nighttime emergence surveys should be performed to determine if maternity roosting bats are present.
- If bat maternity roosts are present, the biologist will establish an appropriate exclusion zone around the maternity roost.

5.3.3 Foothill Yellow-legged frog and Other Special-status Amphibians and Reptiles

While the location of the outfall is more than 12 meters (40 feet) from the Santa Rosa Creek channel (where most FYLF are found), it is within 40 meters (130 feet), which is the maximum distance FYLF have been documented to occur outside the stream channel. Because of this, there is the potential for FYLF to potentially be impacted if present. As such the following measures are recommended for FYLF and other special-status amphibians and reptiles.

1. Pre-construction surveys should be performed within 48 hours of initiation of project activities (including initial ground disturbing activities) in the areas by Melita Station for stormwater improvements.

2. Prior to construction, a wildlife exclusion fence will be installed along the west side of Melita Road along the upper limits of the Santa Rosa Creek corridor to prevent special-status amphibians and reptiles from accessing the site during construction. This fence should be maintained during project activities. The exclusion fence should be installed such that the fabric is a minimum of 46 inches above ground and the fabric should be buried 4-6 inches below ground. The exclusion fence posts should be located on the Study area (work side) of the fence with the fabric on the outside of the Study area relative to the stakes.

3. All vegetation clearing in this area should be done by hand under the supervision of a qualified biologist.

4. No construction activities will occur during rain events, defined as ¼ inch of rain falling within a 24-hour period. Construction activities may resume 24 hours after the end of the rain event.

5. Work should not be conducted at the areas proposed for stormwater improvements any time 30 minutes before sunrise or sunset.

6. Prior to construction, all workers on the crew should be trained by a qualified biologist as to the sensitivity of the CRLF, FYLF, California giant salamander, red- bellied newt and PPT and other species potentially occurring on the property.

5.3.4 Steelhead

While Steelhead have the potential to occur in Santa Rosa Creek, proposed activities associated with stormwater improvements will not require dewatering of the creek as the improvements will occur far outside of the main channel. These improvements are primarily associated with construction of the new stormdrain outlet at Melita Station southwest of Melita Drive. The outfall will potentially impact areas subject to California Department of Fish and Wildlife jurisdiction and thus will require a Streambed Alteration Agreement. Project construction in this area will be limited between June 15 and October 15 when steelhead are expected not to be in the creek. In addition, best management practices will be utilized during construction of the project and will include the use of silt fencing, wattles and storm water inlet protection measures to ensure that stormwater entering into Santa Rosa Creek will minimize or avoid potential siltation impacts. As a result potential construction-related impacts to steelhead will be avoided.

5.4 EVALUATION OF WILDLIFE CORRIDORS

For the purposes of this site evaluation, a wildlife movement corridor would be any space that improves the ability of organisms that may occur within the vicinity (e.g. birds, amphibians, reptiles, small and/or large mammals) to move among or between patches of their habitat (Hilty, Lidicker Jr., and Merenlender 2006). Using this definition, there are no potential wildlife corridors other than the Santa Rosa Creek corridor. Habitat patches for terrestrial species occur to the south and southeast primarily. To the north, dense residential housing and Highway 12 form a barrier to overland movement by most species. Habitat patches further to the north and northeast can be accessed by existing stream corridors. While larger mammals such as coyote and/or deer potentially move across Highway 12 during the night when traffic is lessened, the project area provides no improvement to movement such as dense cover or direct access to preferred habitat patches containing food, water and or shelter.
Similarly, the project area provides only minimal improvement for avian species compared with surrounding areas and no standing water features that could provide habitat for amphibians or reptiles.

The Santa Rosa Creek crossing located approximately 500 feet from the development area provides the most suitable corridor for both terrestrial and aquatic wildlife movement from north to south, as well as east to west. The next nearest corridor crossing is located approximately one half mile to the northwest, at a tributary undercrossing.

There are no known native wildlife nursery sites in the project area and the proposed project is not likely to have any permanent effects on movement within the creek corridor.

6.0 OTHER BIOLOGICAL RESOURCE RELATED LOCAL, STATE OR FEDERAL POLICIES

The project will not conflict with provisions of federally adopted Habitat Conservation Plans or other approved local, regional, or State habitat conservation plans.

Appendix A – Vascular Plant Species Observed in the Spring Lake Village East Project Site Study Area, Santa Rosa, Sonoma County, California

*Species introduced or naturalized in the study area.

CONE-BEARING PLANTS (GYMNOSPERMS)

PINACEAE
*Cedrus sp.

FLOWERING PLANTS (ANGIOSPERMS - EUDICOTS)

ANACARDIACEAE
Toxicodendron diversilobum

APIACEAE
*Daucus carota
*Foeniculum vulgare
*Scandix pecten-veneris
*Torilis arvensis

APOCYNACEAE
*Vinca major

ASTERACEAE
Baccharis pilularis ssp. consanguinea
*Carduus pycnocephalus
*Cichorium intybus
*Cirsium vulgare
*Helminthotheca (Picris) echioides
*Hypocharis glabra
*Hypocharis radicata
*Lactuca saligna
*Lactuca serriola
*Leontodon saxatilis ssp. saxatilis Madia sativa
*Matricaria discoidea (= Chamomilla suaveolens)
*Senecio vulgaris
*Sonchus asper
*Sonchus oleraceus
*Tragopogon porrifolius BRASSICACEAE

*Brassica nigra
*Raphanus sativus

CAPRIFOLIACEAE
Lonicera hispidula

CARYOPHYLLACEAE
*Cerastium glomeratum
*Stellaria media

CONVOLVULACEAE
*Convolvulus arvensis

FABACEAE
*Acacia dealbata
Acmispon americanus var. americanus (= Lotus purshianus)
*Genista monspessulana Lupinus bicolor
*Medicago polymorpha
*Robinia pseudoacacia (?)
*Spartium junceum
*Trifolium dubium
*Trifolium glomeratum
*Trifolium hirtum
*Trifolium subterraneum
*Vicia benghalensis
*Vicia sativa ssp. nigra
*Vicia sativa ssp. sativa

FAGACEAE
Quercus agrifolia Quercus garryana Quercus lobata

GERANIACEAE
*Erodium botrys
*Erodium cicutarium
*Geranium dissectum
*Geranium robertianum

HYPERICACEAE
*Hypericum calycinum
*Hypericum perforatum ssp. perforatum

JUGLANDACEAE
*Juglans hindsii
*Juglans regia

LYTHRACEAE
*Lythrum hyssopifolia

MALVACEAE
*Malva nicaeensis

MONTIACEAE
Claytonia perfoliata

MYRSINACEAE
*Anagallis arvensis

MYRTACEAE
*Eucalyptus globulus

ONAGRACEAE
Epilobium brachycarpum

PAPAVERACEAE
Eschscholzia californica

PLANTAGINACEAE
*Kickxia spuria

POLYGONACEAE
*Rumex acetosella
*Rumex crispus
*Rumex pulcher

RANUNCULACEAE
*Ranunculus muricatus

ROSACEAE
*Cotoneaster pannosus
*Crataegus cf. monogynak Heteromeles arbutifolia
*Prunus cf. cerasifera
*Pyracantha sp.
*Rosa sp.
*Rubus armeniacus

RUBIACEAE
(*?) Galium aparine
*Galium cf. parisiense

TAMARICACEAE
*Tamarix sp.

VERBENACEAE
(*?) Phyla nodiflora

VITACEAE
*Vitis rupestris
*Vitis vinifera

FLOWERING PLANTS (ANGIOSPERMS - MONOCOTS)

ARACEAE
*Arum cf. italicum

CYPERACEAE
Cyperus eragrostis

JUNCACEAE
Juncus tenuis

POACEAE
*Alopecurus pratensis
*Avena barbata
*Avena fatua
*Briza maxima
*Briza minor Bromus carinatus
*Bromus catharticus var. elatus
*Bromus diandrus
*Bromus hordeaceus
*Cynodon dactylon
*Cynosurus echinatus Elymus glaucus ssp. glaucus
*Festuca arundinacea
*Festuca (Vulpia) bromoides
*Festuca perennis (= Lolium multiflorum)
*Hordeum marinum ssp. gussoneanum

*Hordeum murinum ssp. leporinum
*Phalaris aquatica

Vascular Plant Species Observed in the Spring Lake Village East Project Site Storm Drain Study Area, Santa Rosa, Sonoma County, California

*Species introduced or naturalized in the study area.

FLOWERING PLANTS (ANGIOSPERMS - MAGNOLIIDS)

LAURACEAE
Umbellularia californica

FLOWERING PLANTS (ANGIOSPERMS - EUDICOTS)

APIACEAE
*Anthriscus caucalis
*Conium maculatum

APOCYNACEAE
*Vinca major

ASTERACEAE
*Carduus pycnocephalus
*Helminthotheca (Picris) echioides
*Lactuca serriola
*Senecio vulgaris
*Silybum marianum
*Sonchus asper
*Sonchus oleraceus

BETULACEAE
Alnus rhombifolia

BRASSICACEAE
*Raphanus sativus
*Sisymbrium officinale

CARYOPHYLLACEAE
*Stellaria media

FABACEAE
*Medicago polymorpha
*Vicia sativa ssp. sativa

FAGACEAE
Quercus agrifolia Quercus lobata

GERANIACEAE
*Geranium dissectum
*Geranium robertianum

MALVACEAE
*Malva nicaeensis

OLEACEAE
Fraxinus latifolia

PLANTAGINACEAE
*Plantago lanceolata

POLYGONACEAE
(*?) Rumex sp.

RANUNCULACEAE
*Ranunculus muricatus

ROSACEAE
*Rosa sp.
*Rubus armeniacus

RUBIACEAE
(*?) Galium aparine

SALICACEAE
Salix laevigata Salix lasiolepis

SAPINDACEAE
Acer macrophyllum Aesculus californica

VITACEAE
Vitis californica

FLOWERING PLANTS (ANGIOSPERMS - MONOCOTS)

ARACEAE
Lemna valdiviana

POACEAE
*Avena barbata Bromus carinatus
*Bromus catharticus var. elatus
*Bromus diandrus
*Festuca perennis (= Lolium multiflorum)
*Hordeum murinum ssp. leporinum

Vascular Plant Species Observed in the Spring Lake Village Project 5803, 5815 Melita Road Study Area, Santa Rosa, Sonoma County, California

*Species introduced or naturalized in the study area.

FLOWERING PLANTS (ANGIOSPERMS - EUDICOTS)

APOCYNACEAE
*Vinca major

ASTERACEAE
*Cirsium vulgare
*Hedypnois rhagadioloides
*Helminthotheca (Picris) echioides
*Hypocharis radicata
*Pseudognaphalium luteoalbum
*Senecio vulgaris
*Sonchus asper

BRASSICACEAE
*Brassica cf. nigra Cardamine oligosperma
*Lobularia maritima
*Raphanus sativus

CARYOPHYLLACEAE
*Polycarpon tetraphyllum var. tetraphyllum
*Spergularia villosa

CONVOLVULACEAE
*Convolvulus arvensis

EUPHORBIACEAE
Euphorbia (Chamaesyce) ocellata ssp. ocellata

FABACEAE
*Medicago polymorpha
*Trifolium repens

FAGACEAE
Quercus agrifolia Quercus lobata

GERANIACEAE
*Erodium moschatum
*Geranium dissectum
*Geranium robertianum

LYTHRACEAE
*Lythrum hyssopifolia

MALVACEAE
*Malva sp.

MYRSINACEAE
* Lysimachia (Anagallis) arvensis

PLANTAGINACEAE
*Plantago lanceolata

POLYGONACEAE
*Polygonum aviculare ssp. neglectum

RANUNCULACEAE
*Ranunculus muricatus

ROSACEAE
*Rubus armeniacus
*Rubus pensilvanicus

RUBIACEAE
(*?) Galium sp.

FLOWERING PLANTS (ANGIOSPERMS - MONOCOTS)

ARACEAE
*Arum cf. italicum

JUNCACEAE
Juncus bufonius var. occidentalis

POACEAE
*Avena barbata
*Briza minor
Bromus carinatus var. carinatus
*Bromus diandrus
*Bromus hordeaceus
*Festuca (Vulpia) bromoides
*Festuca (Vulpia) myuros
*Hordeum murinum ssp. leporinum
*Poa annua

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