Ashton Place Unit 3 Project
Initial Study Mitigated Negative Declaration

Lead Agency:
City of Vacaville
Community Development Department
650 Merchant Street
Vacaville, California 95688

Technical Assistance:
Stantec Consulting Services Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, California 94597

October 24, 2016

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC	air conditioning
ADT	Average Daily Traffic
AF	Acre Feet
AF/YR	Acre Feet per Year
ALS	Advanced Life Support
ALUC	Airport Land Use Commission
APN	Assessor's Parcel Number
BAU	Business-As-Usual
bgs	below ground surface
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CBC	California Building Code
CCA	Coalition for Clean Air
CCR	California Code of Regulations
CCS	cryptocrystalline silica
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CH_4	methane
City	City of Vacaville
CMA	Congestion Management Agency
CN	Neighborhood Commercial
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranking
CUPA	Certified Unified Program Agency

dB	decibel
dBA	A-weighted sound level
DOC	Department of Conservation
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
du/ac	dwelling unit per acre
DUSD	Dixon Unified School District
DWR	Department of Water Resources
ECAS	Energy Conservation Action Strategy
EIR	Environmental Impact Report
EMS	Emergency Medical Service
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FSUSD	Fairfield-Suisun Unified School District
FTA	Federal Transit Administration
GCP	General Construction Permit
General Plan	City of Vacaville General Plan
General Plan EIR	General Plan and Energy Conservation Action Strategy Environmental Impact Report
GHG	greenhouse gas
GWP	global warming potential
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HOA	Homeowner's Association
HMBP	Hazardous Materials Business Plan
IMP	Integrated Management Policies
IPaC	Information for Planning and Conservation
ISMND	Initial Study Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
KOP	key observation point
Ldn	day/night sound level
LID	Low Impact Development
LLD	Streetlight and Landscape District
Lmax	maximum instantaneous noise level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
mgd	million gallons per day

MLD	most likely descendant
MRZ	Mineral Resource Zone
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NBA	North Bay Aqueduct
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Association
NOI	Notice of Intent
NOx	nitrogen oxide
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
N_2O	nitrous oxide
O_3	Ozone
OHP	State Office of Historic Preservation
Pb	lead
PFC	perfluorinated chemical
PGA	peak ground acceleration
PG&E	Pacific Gas and Electric
PHWWF	Peak Hour Wet Weather Flow
PM	Particulate Matter
$PM_{2.5}$	particulate matter (2.5 microns and less in diameter)
PM_{10}	particulate matter (10 microns and less in diameter)
p.p.v	peak particle velocity
PRC	Public Resources Code
PRD	Permit Registration Documents
PUE	public utility easement
RCNM	Roadway Construction Noise Model
REMELS	reference energy mean emission levels
RM	Residential Medium
RMD	Residential Medium Density
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SBF	Sanitary Base Flow
SCDEM	Solano County Department of Environmental Management
SCWA	Solano County Water Agency
sf	square feet
SF_6	sulfur hexafluoride
SID	Solano Irrigation District
SIP	State Implementation Plan

SMAQMD	Sacramento Metro Air Quality Management District
SMARA	California Surface Mining and Reclamation Act of 1975
SO_2	sulfur dioxide
SRI	Solar Reflective Index
STA	Solano Transportation Authority
SVAB	Sacramento Valley Air Basin
SWMP	Stormwater Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TMDL	Total Max Daily Load
TUSD	Travis Unified School District
USDA	United States Department of Agriculture
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
VFD	Vacaville Fire Department
VMT	vehicle miles traveled
VOC	volatile organic compound
VPD	Vacaville Police Department
VUSD	Vacaville Unified School District
WWTP	Waste Water Treatment Plan
YSAQMD	Yolo-Solano Air Quality Management District

INITIAL STUDY MITIGATED NEGATIVE DECLARATION

PROJECT TITLE: Ashton Place Unit 3 Project

PROJECT DESCRIPTION: The Ashton Place Unit 3 Project (proposed project) would involve the development of 1.76 acres with 15 two-story single-family detached residential units. The site consists one 1.33 acre parcel owned by the applicant, and requests that 0.43 acres of City owned public right-of-way be dedicated to the project site for a total of 1.76. The Applicant is requesting to change the General Plan Land Use Designation of the property from Neighborhood Commercial (CN) to Residential Medium Density (RMD), amend General Plan Policy LU-P23.1 to remove commercial requirements in the project area and exempt new development within the Southtown Project Area from having to meet or exceed the standard for any adjacent neighboring homes, and also rezone the property to Residential Medium (RM). The 15 two-story residential units would range in size from 1,696 square feet (sf) to 2,217 sf with an average lot size of 1,985 sf, and a gross density of 8.52 dwelling units per acre (du/ac). The proposed project also includes private yard areas, and provides four parking stalls per residential unit. All units would have rear entry, and the units adjacent to Vanden Road and Vega Way would face the public street. Per the Land Use and Development Code (Division 14.09 of the Municipal Code), the proposed project requests an in-lieu payment for off-site recreation/open space instead of the required on-site space. The constructed project would be managed by a Homeowners Association (HOA).

PROJECT LOCATION: The proposed project is located in Vacaville, Solano County, California (Figure 2.0-1). Specifically, the total 1.76 acre project site is located in the Southtown Project Area at the northwest intersection of Cogburn Circle and Vanden Road, bounded by Vega Way to the west, Vanden Road to the east, and Cogburn Circle to the south (Figure 2.0-2). An existing residential development borders the project site to the north. The assessor's parcel number (APN) of the 1.33 acre site is 0136-874-010. The proposed project Tentative Map is presented on Figure 2.0-3.

NAME OF LEAD AGENCY:
City of Vacaville
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California

LEAD AGENCY CONTACT INFORMATION:

Christina Corsello, Associate Planner
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California
Phone: (707) 449-5374
Email: Christina.Corsello@cityofvacaville.com

NAME OF APPLICANT:

D.R. Horton
6683 Owens Drive
Pleasanton, California 94588

REQUIRED FINDINGS: The City of Vacaville has determined that a) all potentially significant or significant impacts required to be identified in the Initial Study Mitigated Negative Declaration (ISMND) have been identified and analyzed; and b) with respect to each significant impact on the environment either of the following apply: 1) changes or alterations have been required in or incorporated into the proposed project that avoid or mitigate the significant impacts to a level of less than significant; or 2) those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. The ISMND and supporting documents are available at the City of Vacaville Community Development Department, Planning Division, located at 650 Merchant Street Vacaville, California 95688, and online by searching the project name at:

https://permits.cityofvacaville.com/eTRAKiT3/Search/project.aspx.

Christina Corsello, Associate Planner
Community Development Department
Planning Division
City of Vacaville, California

By: _____ Date: October 24, 2016

1.0 INTRODUCTION

1.1 PROJECT TITLE

Ashton Place Unit 3 Project

1.2 LEAD AGENCY

City of Vacaville
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California 95688

1.3 LEAD AGENCY CONTACT

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1.4 PROJECT SPONSOR(S) NAME AND ADDRESS

D.R. Horton
Northern California Division
6683 Owens Drive
Pleasanton, California 94588

1.5 PURPOSE

The purpose of this Initial Study/Mitigated Negative Declaration (ISMND) is to identify any potential environmental impacts from implementation of the Ashton Place Unit 3 Project (proposed project) in Vacaville, California. This Initial Study identified potentially significant effects on the environment and revisions to the project site plans, presented as mitigation measures, were identified to mitigate the effects to a point where clearly no significant effect on the environment would occur. Thus, a negative declaration as a "mitigated negative declaration" was determined to be appropriate for the proposed project and the ISMND herein has been prepared. Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15367, the City of Vacaville (City) is the Lead Agency in the preparation of this ISMND and any additional environmental documentation required for the proposed project. The City has discretionary authority over the proposed project. The intended use of this document is to

provide the basis for input from public agencies, organizations, and interested members of the public.

1.6 PROJECT LOCATION

The proposed project is located in Vacaville, Solano County, California (Figure 2.0-1). The 1.76 acre project site is located on the north side of Cogburn Circle and is bound by Vega Way to the west, Vanden Road to the east, an existing residential development to the north, and across from Fire Station 75 and Magnolia Park on the south (Figure 2.0-2). Assessor's parcel number (APN) is 0136-874-010.

1.7 SITE HISTORY AND PREVIOUS ENVIRONMENTAL ANALYSIS

The project site is part of the Southtown Project Area, an EIR for which was adopted by the City Council in April 27, 2004. As described in the Southtown Project EIR, the proposed land uses included approximately 1,410 housing units, 30,000 square feet of commercial space, 33.5 acres of park space, a fire station, and 14 acres of public/civic space on an approximately 287-acre site. While majority of the Southtown Project Area was planned as residential, two parcels on the northeast and northwest corner of Vanden Road and Cogburn Circle were zoned for neighborhood commercial. The Ashton Place Unit 3 Project is proposed on the parcel northwest corner of Vanden Road and Cogburn Circle. A separate development application for residential uses has been submitted for the second parcel on the northeast corner, but is not part of the proposed project.

A Commercial Market Analysis was conducted by New Economics and Advisory for the Applicant on March 25, 2015, to evaluate the market for the originally intended commercial use of the project site, and the undeveloped lot located east of the project site. In addition, a community outreach booth was established on September 10, 2016 as part of the City's efforts to evaluate the merits of the land use change. There was a general sense that the surrounding neighborhood had a preference for a residential project over commercial. Considering that, the Applicant submitted an application to the City in June of 2015 to build 16 homes on the project site. However, based on the site and design review by the City, the Applicant revised the Plan and reduced the number of units from 16 to 15. The revised site plan is what constitutes the proposed project and is being evaluated in this ISMND.

1.8 LAND USE DESIGNATIONS

The project site is currently designated Neighborhood Commercial (CN) in the City's General Plan and public right-of-way. The Applicant is proposing to change the General Plan designation of the project site to Residential Medium Density (RMD) and also rezone the project site from Neighborhood Commercial (CN) to Residential Medium Density (RM).

1.9 SUMMARY OF PROJECT

The proposed project consists of abandoning 0.43 acres of City Right of Way to add to an existing 1.33 acre parcel to create the 1.76 acre undeveloped project site, then subdividing and

developing the site with 15 single-family residential units and one common parcel. The APN is 0136-874-010. The Applicant is requesting to change the General Plan Land Use Designation of the property from CN to RMD, amend General Plan Policy LU-P23.1 to remove commercial requirements in the project area and exempt new development within the Southtown development from having to meet or exceed the standard for any adjacent neighboring homes, and also rezone the property from CN to RM. Per the Land Use and Development Code (Division 14.09 of the Municipal Code). The 15 two-story residential units would range in size from 1,696 to 2,217 square feet (sf) to sf with an on lots ranging from 1,736 to 2,254 sf, and a gross density of 8.52 dwelling units per acre (du/ac). The proposed project also includes private yard areas and provides four parking stalls per residential unit. All units would have rear entry to the garage, and the units adjacent to Vanden Road and Vega Way would face the public street. The proposed project includes an in-lieu fee for off-site improvements to Magnolia Park instead of on-site recreation/open space. The constructed project would be managed by the same Homeowners Association (HOA) and Ashton Place 1 and Ashton Place 2.

1.10 SURROUNDING LAND USES AND SETTING

The currently undeveloped project site is bordered by the following:

- **North.** North of the project site is a residential neighborhood consisting of two-story single-family residences with wide, shallow lots located in an area designated Residential Low Medium Density (5.1 to 8.0 units per acre) by the City's Zoning Ordinance. There are five existing single-family residences that abut the northern boundary of the project site.
- **South.** Cogburn Circle forms the southern boundary of the project site, beyond which lies Magnolia Neighborhood Park and the newly constructed Vacaville Fire Department (VFD) Station 75.
- **West.** Vega Way forms the western boundary of the project site, beyond which lies two-story single-family residences. The single-family residences are located on wide, shallow lots in an area zoned Residential Low Medium Density (5.1 to 8.0 units per acre) by the City's Zoning Ordinance.
- **East.** The eastern boundary of the project site is bordered by Vanden Road, beyond which lies currently undeveloped land currently zoned as CN. A development application for rezoning of this parcel to construct single-family units similar to the proposed project is under review. If approved, the undeveloped land east of the project site would be rezoned as RM (8.1 to 14.0 units per acre) by the City's Zoning Ordinance.

1.11 CEQA AND PUBLIC AND AGENCY REVIEW

The California Environmental Quality Act (CEQA) is the State environmental law that requires project proponents to disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to consider environmental issues during the planning process. The City is the Lead Agency under CEQA for the preparation of this ISMND. The CEQA Guidelines (Section 21067) define the Lead Agency as: "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." The approval of the proposed project is considered a public agency discretionary action, and therefore the proposed project

is subject to compliance with CEQA. The City has directed the preparation of an analysis that complies with CEQA.

At the direction of the City, Stantec has prepared this document. The purpose of this document is to present the environmental consequences of implementing the proposed project to decision-makers and the public. This disclosure document is being made available to the public for review and comment. The public, City residents, and other local and State resource agencies would be given the opportunity to review and comment on this document during the 30-day public review period. Comments received during the 30-day public review period would be considered by the City prior to the certification of the CEQA disclosure document and project approval.

This ISMND was prepared for the proposed project in September 2016. The City, as Lead Agency, released the ISMND for public review beginning on October 24, 2016 and ending on November 22, 2016, pursuant to CEQA Guidelines Section 15105.

If you wish to send written comments (including via e-mail) they must be received by 5 p.m. on November 22, 2016. Written comments should be addressed to:

Christina Corsello, Associate Planner
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California 95688
Phone: (707) 449-5374
Email: Christina.Corsello@cityofvacaville.com

After comments are received from the public and reviewing agencies, the City may (1) adopt the ISMND and approve the proposed project, (2) undertake additional environmental studies, or (3) abandon the proposed project. If the proposed project is approved and funded, the City could proceed with all or part of the proposed project, depending on agency permits.

The ISMND and supporting documents are available at the City of Vacaville, Community Development Department, Planning Division, located at 650 Merchant Street Vacaville, California 95688, and online by searching the project name at:

https://permits.cityofvacaville.com/eTRAKiT3/Search/project.aspx.

If you have questions regarding the ISMND, please call Christina Corsello, Associate Planner, at (707) 449-5374.

1.12 REQUIRED PERMITS AND APPROVALS

This ISMND would be used by the City, as the Lead Agency, in evaluating the potential environmental impacts of the proposed project. In order for the proposed project to be implemented, a series of actions and approvals would be required from several agencies. Anticipated project approvals/actions would include, but are not limited to, the following:

- Review and legislative action on General Plan Designation Amendment and Text Amendment from Neighborhood Commercial to Residential Medium Density, Zone Change from Neighborhood Commercial to Residential Medium, Tentative Subdivision Map, Conditional Use Permit, Planned Development with Design Review for house plans, and Request for City to grant Public Right of Way to developer: City of Vacaville City Council.

- Review for approval of permits related to Improvement Plans, Grading Plans, and Abandonment of Public Right of Way: City of Vacaville, Public Works.

- Plan Check for Building Permits for Residential Development: City of Vacaville, Building Division.

- Regional Water Quality Control Board, National Pollutant Discharge Elimination System Permit.

1.13 SCOPE OF THIS STUDY

As the Lead Agency under CEQA, the City is responsible for compliance with the environmental review process prescribed by the CEQA guidelines. This initial study focuses on the environmental issues identified as potentially significant in the CEQA checklist and by CEQA guidelines. This Initial Study evaluates potentially significant effects on the environment and identifies revisions in the project site plans, presented as mitigation measures to mitigate the effects to a point where clearly no significant effect on the environment would occur. A complete Project Description is included in Section 2.0. Proposed project elements and environmental resources are analyzed in Section 3.0 and references are included in Section 4.0. The following technical studies were conducted and/or reviewed in preparing this ISMND: air quality modeling outputs, biological resources field memorandum, cultural resources field memorandum, sewer calculations memorandum, storm drain runoff comparison memorandum, water supply calculations memorandum, noise modeling, and a transportation study. These studies are included as appendices to this ISMND and referred to where appropriate throughout this document.

1.14 DOCUMENT ORGANIZATION

This ISMND is organized as follows:

Section 1.0: Introduction. This section provides an introduction to the proposed project and describes the purpose and organization of this document.

Section 2.0: Project Description. This section describes the purpose and need for the proposed project, identifies project objectives, and provides a detailed description of the proposed project.

Section 3.0: Environmental Checklist and Environmental Evaluation. This section presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if the proposed project would result in no impact, a less than significant impact, a less than significant impact with mitigation incorporated, or a potentially significant impact for each topic. If impacts are determined to be potentially significant after incorporation of applicable mitigation measures, an Environmental Impact Report (EIR) would be required. For this proposed project, however, mitigation measures have been incorporated where needed, that would reduce all potentially significant impacts to a less than significant level.

Section 4.0: References. This section lists the references used in preparation of this ISMND.

Section 5.0: List of Preparers. This section identifies report preparers.

2.0 PROJECT DESCRIPTION

2.1 PROPOSED PROJECT

The Ashton Place Unit 3 Project (proposed project) would involve subdividing the project site to develop 15 two-story single-family detached residential units on 1.76 acres. Development of the proposed project is subject to approval of applications for an amendment to the General Plan Land Use Designation, General Plan Text Amendment, Zone Change, Tentative Map, Conditional Use Permit (CUP), and Planned Development with Design Review of house plans.

2.1.1 Project Location

The proposed project is located in Vacaville, Solano County, California (Figure 2.0-1). The 1.76 acre project site is located on the north side of Cogburn Circle and is bound by Vega Way to the west and Vanden Road to the east, on the undeveloped parcel identified as APN 0136-874-010 (Figure 2.0-2). An existing residential development borders the project site to the north. The proposed project Tentative Map is presented on Figure 2.0-3.

2.1.2 Land Use Designation

The project site is currently designated CN in the City's General Plan. The Applicant is proposing to change the General Plan designation of the project site to Residential Medium Density (RMD) and also rezone the project site from CN to RM.

General Plan

The City of Vacaville General Plan land use designation for the project site is CN, and is defined as follows:

"*This designation provides for small sites for neighborhood commercial centers, generally anchored by a grocery store with convenience uses serving the immediate area. New Neighborhood Commercial sites must be between 4 and 10 acres in size*."

The General Plan Policy LU-P23.1, described below, further guides development in the Southtown Area:

LU-P23.1: Require that the South Vanden Area, including the Southtown and Southtown Commons Project Areas, facilitate the development of a range of housing densities and opportunities, pedestrian and bicycle friendly design, neighborhood commercial sites, and recreational and neighborhood facilities, by including the following requirements:

- A network of landscaped pedestrian/bike corridors shall connect key elements of the area, such as the community park and arterial streets. New development adjacent to existing homes within the city limits shall match or exceed the size, character, and quality of adjacent homes and lots.

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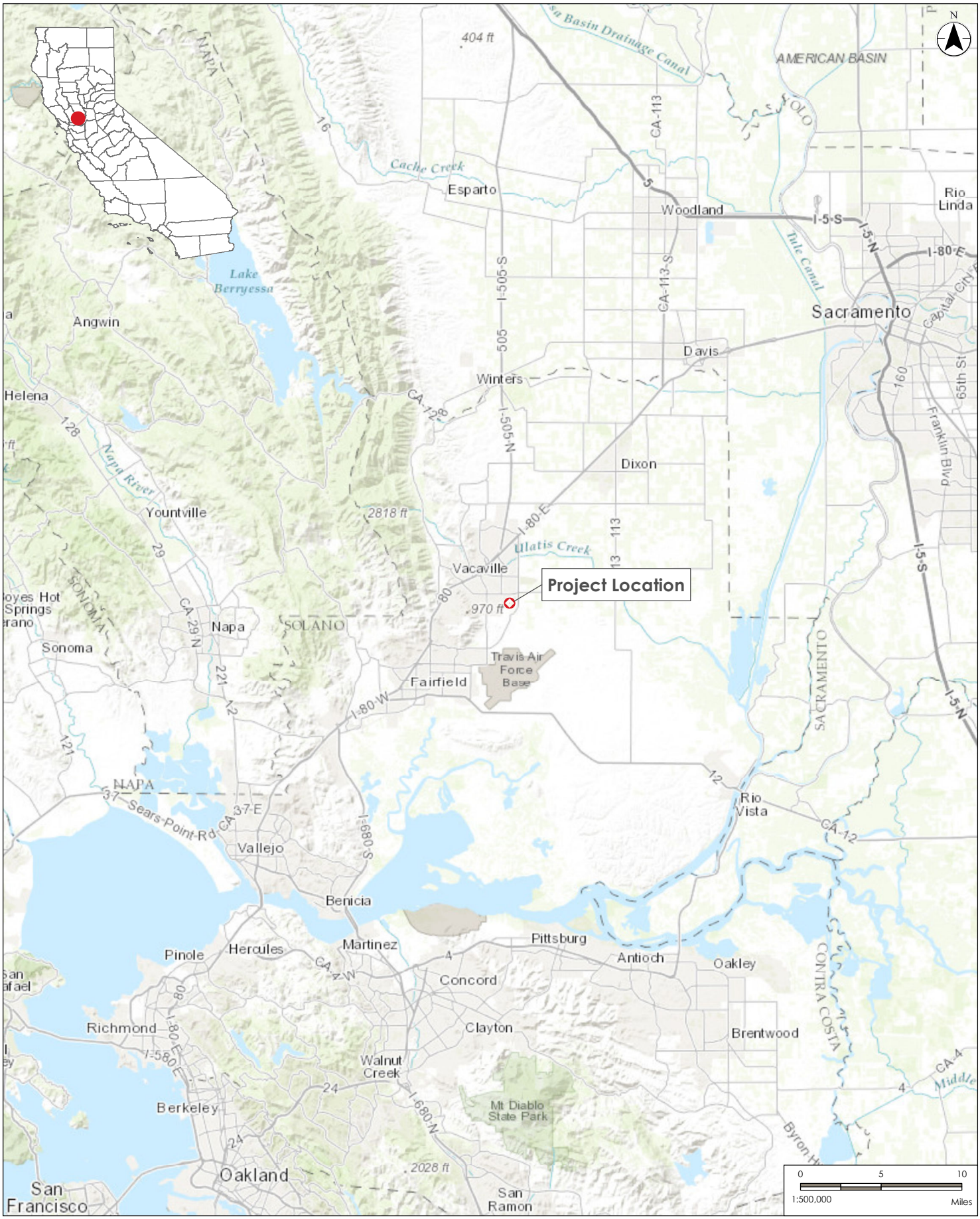

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 2.0-1. Regional Project Location Map

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 2.0-2. Project Area

Prepared: MNugent, 10/5/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

C:\Users\kaejohnson\Documents\ArcGIS\Packages\Ashton_site_plan_8by11P_01_83589541-7D92-4D70-8D48-2C1440DDA8B4\v103\Ashton_site_plan_8by11P_01.mxd KAEJOHNSON 2016-10-05

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Legend

- Project Area
- Parcel Area

Note: Tentative Map data provided by Phillippi Engineering (PEI)

Not to Scale

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 2.0-3. Tentative Map

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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- All new residential development shall conform to the Residential Design Requirements for New Single Family Development.
- The Southtown Project Area will include a range of housing types and densities and attached, detached, and cluster housing.
- Land shall be reserved for community uses such as private schools, membership organizations, day care centers, and senior centers.
- A financing mechanism for all public facility improvements shall be established before development occurs.
- Nut Tree Road and Vanden Road shall be widened to the City standard width through the project sites for all projects that front on these streets.
- Leisure Town Road shall be widened and improved to the standards for the Jepson Parkway along the frontage of all projects that abut Leisure Town Road.
- Foxboro Parkway shall be extended between Nut Tree Road and Vanden Road. The extension will be completed prior to the reconstruction and reconfiguration of Vanden Road.
- A 1-acre site for a future fire station site shall be reserved within the Southtown Project Area.
- A site within the Vanden Road loop shall be reserved for a park.
- A multi-family project on Leisure Town Road shall begin construction in the first phase of development within the Southtown Project Area.
- Public areas adjacent to Alamo Creek shall be landscaped to enhance the view of the creek channel, within the requirements of Solano County Water Agency.
- Different development projects within the Southtown project area shall coordinate their respective roads, bike paths, landscape corridors, and design standards to create a unified sense of place and identity.
- Commercial buildings shall be no more than an average of 30 feet in height, and be designed to front on the sidewalk, with parking at the rear of the property, when feasible, so as to enhance neighborhood aesthetics and to encourage pedestrian–friendly design.
- Infrastructure master plans for sewer, water, storm drain, and traffic improvements shall be prepared prior to or in conjunction with the processing of subdivision maps for all development within the South Vanden areas, including the Southtown and Moody project areas.

- Prior to the approval of any subdivision applications, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, stormwater management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans.

- The lands to the south of the Southtown and Southtown Commons project areas will be subject to subsequent General Plan Amendments, Prezonings, and other prerequisites to annexation.

Zoning

The zoning for the project site is currently Neighborhood Commercial, which is described as follows:

"The CN-Neighborhood Commercial district allows for uses which generally provide goods and services in small retail centers intended to accommodate a neighborhood area. The CN district is established to achieve the following purposes:

A. To allow for the establishment of commercial retail, office, service, entertainment, and public uses suitable for neighborhood commercial centers;

B. To provide sites of adequate size to accommodate smaller retail centers in locations convenient to residential neighborhoods;

C. To promote the economic vitality of businesses by ensuring an appropriate mix of uses compatible with surrounding residential areas;

D. To allow for the establishment of other appropriate uses which are determined to be compatible with the intent of the district."

2.2 DESCRIPTION OF PROJECT

2.2.1 Project Characteristics

The proposed project requires the approval of land use designation and corresponding zone changes in order to allow the development of the proposed residential uses.

Proposed Land Use Designations

General Plan

The Applicant is proposing to change the General Plan land use designation of the project property to Residential Medium Density, which is defined as follows:

"This designation provides opportunities for multiple residential uses, including duplexes, duets, attached or detached townhouses, and multi-dwelling structures with landscaped open space for residents, subject to appropriate standards. Homes designed as stacked units without

garages are prohibited in this land use designation. Multi-dwelling structures must be within a subdivision in which each unit may be under individual ownership. Single-family detached housing may be allowed when in compliance with Residential Design Requirements for New Single-Family Development. The base density is 8.1 units per gross acre, and the maximum potential density is 14.0 units per gross acre."

The project also proposes to amend the General Plan Policy LU-P23.1 to revise the requirement for new development adjacent to existing homes to match or exceed the standards for the existing homes to only apply to projects outside of the Southtown project and to remove any requirement for commercial construction. Revisions to Policy LU-P23.1 are as noted below with any deleted text shown as strikeout and new text is shown in red:

LU-P23.1: Require that the South Vanden Area, including the Southtown and Southtown Commons Project Areas, facilitate the development of a range of housing densities and opportunities, pedestrian and bicycle friendly design, ~~neighborhood commercial sites,~~ and recreational and neighborhood facilities, by including the following requirements:

- A network of landscaped pedestrian/bike corridors shall connect key elements of the area, such as the community park and arterial streets.
- New development adjacent to existing homes within the city limits shall match or exceed the size, character, and quality of adjacent homes and lots. This applies only to the exterior of the Southtown and Moody projects and not internally within said projects.
- All new residential development shall conform to the Residential Design Requirements for New Single Family Development.
- The Southtown project area will include a range of housing types and densities and attached, detached, and cluster housing.
- Land shall be reserved for community uses such as private schools, membership organizations, day care centers, and senior centers.
- A financing mechanism for all public facility improvements shall be established before development occurs.
- Nut Tree Road and Vanden Road shall be widened to the City standard width through the project sites for all projects that front on these streets.
- Leisure Town Road shall be widened and improved to the standards for the Jepson Parkway along the frontage of all projects that abut Leisure Town Road.

- Foxboro Parkway shall be extended between Nut Tree Road and Vanden Road. The extension will be completed prior to the reconstruction and reconfiguration of Vanden Road.

- A 1-acre site for a future fire station site shall be reserved within the Southtown project area.

- A site within the Vanden Road loop shall be reserved for a park.

- ~~A multi-family project on Leisure Town Road shall begin construction in the first phase of development within the Southtown project area.~~

- Public areas adjacent to Alamo Creek shall be landscaped to enhance the view of the creek channel, within the requirements of Solano County Water Agency.

- Different development projects within the Southtown project area shall coordinate their respective roads, bike paths, landscape corridors, and design standards to create a unified sense of place and identity.

- ~~Commercial buildings shall be no more than an average of 30 feet in height, and be designed to front on the sidewalk, with parking at the rear of the property, when feasible, so as to enhance neighborhood aesthetics and to encourage pedestrian-friendly design.~~

- Infrastructure master plans for sewer, water, storm drain, and traffic improvements shall be prepared prior to or in conjunction with the processing of subdivision maps for all development within the South Vanden areas, including the Southtown and Moody project areas.

- Prior to the approval of any subdivision applications, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, stormwater management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans.

- The lands to the south of the Southtown and Southtown Commons project areas will be subject to subsequent General Plan Amendments, Prezonings, and other prerequisites to annexation.

Zoning

The Applicant is proposing a zone change of the project property to Residential Medium, which is defined as follows:

"The Residential Medium Density district provides for attached multi-family housing such as duplexes, townhouses, and apartments, as well as for single-family detached housing on small lots. The allowed density ranges from 8.1 to 14.0 units per gross developable acre, with a

minimum project area of 7.5 acres. The RM district is established to achieve the following purposes:

A. To reserve appropriately located areas for medium density, multi-family residential development;

B. To ensure a mix of housing types to meet the diverse needs of the citizens of Vacaville;

C. To allow for the establishment of other appropriate uses which are determined to be compatible with the intent of the district."

A single-family development in RM zoning district is subject to a CUP with a planned development application.

Development Characteristics

The Applicant is proposing to develop the 1.76 acre undeveloped project site as a 15 lot single-family detached residential subdivision. The lot sizes would range in size from 1,736 sf to 2,254 sf with an average lot size of 1,985 sf, and a gross density of 8.52 du/ac. The proposed project also includes a minimum of 400 sf of private yard areas and four parking stalls per residential unit. As shown in Figure 2.0-3: Tentative Map, all units would have rear entry. Units adjacent to Vanden Road and Vega Way would face the public street. The common areas of the proposed project (landscaping, driveways, and drive paths) would be maintained and managed by an HOA.

The building size of the 15 two-story dwelling units would range from 1,696 sf to 2,217 sf. As shown on the Tentative Map, the larger homes would be located along Vega Way and Vanden Road, and the smaller homes would be located in the center and along the northern boundary. The side yard setbacks for the units would be five feet minimum on one side and 10 feet on the other side. The 10 foot side yard would provide a minimum of 400 sf of usable private recreational space. The five foot side yard space would contain the air conditioning (AC) unit, toters, and storage. The front yard setback would extend 21.5 feet from the back of the curb with the addition of the public right of way to the project site. There are no single-story units proposed for the project. Three different house plans and elevations are proposed are described below:

<u>Architectural Styles</u>

The proposed project would incorporate three types of architectural styles; Craftsman, French Country, and Spanish. Each architectural style would incorporate unique architectural elements and would be required to meet the City's architectural design requirements, prior to the issuance of a building permit. The three proposed architectural styles for the proposed project are described below, and depicted on Figure 2.0-4, Figure 2.0-5, and Figure 2.0-6.

Spanish

Spanish style homes are typically characterized as having a stucco exterior, arches around entry walkways, and low-pitched tile roofs. The proposed Spanish style units would incorporate concrete low profile 'S' tile, stucco finishes, shutters, decorative gable end details, enhanced sills, and 1x stucco finish trims.

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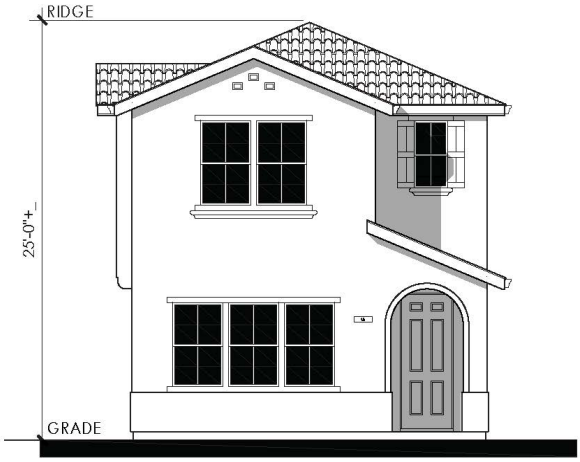

ELEVATION '1A' - SPANISH

1A Material Legend:
Concrete Low Profile 'S' Tile
Stucco Finish
Shutters
Decorative Gable End Detail
Enhanced Sills
1x Stucco Finish Trims

ELEVATION '1B' - FRENCH COUNTRY

1B Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Shutters
Decorative Corbels
Stone Veneer
Enhanced Sills
1x Stucco Finish Trims

ELEVATION '1C' - CRAFTSMAN

1C Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Enhanced Sills
1x Stucco Finish Trims
Wood Posts

Note: Plan drawings provided by KTGY group

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Ashton Place Unit 3 Project
Vacaville, California

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Figure 2.0-4. Plan 1- Front Elevations

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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ELEVATION '2A' - SPANISH

2A Material Legend:
Concrete Low Profile 'S' Tile
Stucco Finish
Decorative Gable End Detail
Enhanced Sills
1x Stucco Finish Trims

ELEVATION '2B' - FRENCH COUNTRY

2B Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Shutters
Decorative Corbels
Stone Veneer
Enhanced Sills
1x Stucco Finish Trims

ELEVATION '2C' - CRAFTSMAN

2C Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Enhanced Sills
1x Stucco Finish Trim
Wood Posts

Note: Plan drawings provided by KTGY group

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Ashton Place Unit 3 Project
Vacaville, California

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Figure 2.0-5. Plan 2- Front Elevations

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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ELEVATION '3A' - SPANISH

3A Material Legend:
Concrete Low Profile 'S' Tile
Stucco Finish
Decorative Gable End Detail
Enhanced Sills
1x Stucco Finish Trims
Shutters

ELEVATION '3B' - FRENCH COUNTRY

3B Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Shutters
Stone Veneer
Enhanced Sills
1x Stucco Finish Trims

ELEVATION '3C' - CRAFTSMAN

3C Material Legend:
Flat Concrete Tile Roofing
Stucco Finish
Cementitous Siding/Shingles
Enhanced Sills
1x Stucco Finish Trim
Wood Posts
Shutters

Note: Plan drawings provided by KTGY group

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Vacaville, California

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Figure 2.0-6. Plan 3- Front Elevations

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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French Country

French Country style homes are characterized as incorporating decorative shutters, and arches with accenting keystones above the windows and doors. French Country style homes also include a symmetrical façade of brick, stone, or stucco finishing. The proposed project French County style units would incorporate flat concrete tile roofing, stucco finishes, cementitious siding/shingles, shutters, decorative corbels, stone veneer, enhanced sills, and 1x stucco finish trims.

Craftsman

Craftsman style homes typically incorporate a more simplistic design with natural materials. Craftsman architectural elements include shingle siding, stone details, low-pitched roofs, and square or round columns and stone supports. The proposed project Craftsman style units would incorporate flat concrete tile roofing, stucco finishes, cementitious siding/shingles, enhanced sills, 1x stucco finish trim, wood posts, and shutters.

Each architectural style would be designed with three different floor plans with each floor plan having three elevation types. The three floor plans are described as follows:

Plan 1
Plan 1 is 1,697 sf and has three bedrooms and 2.5 baths. There are three distinctive and unique elevations which are: Plan 1A – Spanish; Plan 1B – French Country; and, Plan 1C – Craftsman. The elevation height for Plan 1 would range from 25'-0" to 26'-11". Each residential unit would be constructed on a building PAD approximately 0.50 feet. The finished floor elevation would be between 98 feet to 99 feet.

The Plan 1 floor plan would include a large great room downstairs which opens to both the kitchen and dining room. Upstairs there are four bedrooms including a large master bedroom with walk-in closet. Where the side of the house faces a public street, significant architectural elements are provided. In addition, significant architectural treatment of the rear elevation is provided which would also include a motion activated light and lighted address. A lighted address would also be displayed on the front and rear of the house.

Plan 2
Plan 2 is 2,099 sf and has three and four bedroom options and three full baths. The three elevations are: Plan 2A – Spanish; Plan 2B – French Country, and; Plan 2C – Craftsman. The elevation height for Plan 2 would range from 25'-9" to 27'-10". Each residential unit would be constructed on a building PAD approximately 0.50 feet. The finished floor elevation would be between 98 feet to 99 feet.

The Plan 2 floor plan would include a large great room downstairs along with a large kitchen that opens to the dining room. There is also a large bedroom and full bath downstairs. Upstairs there are two to three bedrooms (depending on the options selected) including a large master bedroom with walk-in closet. Where the side of the house faces a public street significant architectural elements are provided. In addition, significant architectural treatment of the rear

elevation is provided which would also include a motion activated light and lighted address. A lighted address will also be displayed on the front and rear of the house.

Plan 3
Plan 3 is 2,217 sf and has four bedrooms and three full baths. The three elevations are: Plan 3A – Spanish; Plan 3B – French Country, and; Plan 3C – Craftsman. The elevation height for Plan 3 would range from 27'-5" to 29'-7". Each residential unit would be constructed on a building approximately 0.50 feet. The finished floor elevation would range between 98 feet to 99 feet.

The Plan 3 floor plan would include a large great room downstairs along with a large kitchen that opens to the dining room. There is also a large bedroom and full bath downstairs. Upstairs there are three bedrooms including a large master bedroom with walk-in closet. Where the side of the house faces a public street significant architectural elements are provided. In addition, significant architectural treatment of the rear elevation is provided which would also include a motion activated light and lighted address. A lighted address would also be displayed on the front and rear of the house.

Proposed Project Deviations

In accordance with the City's Municipal Code, Chapter 14.09.074, the proposed project would adhere to most of the minimum development standards required for conditional uses in the RM zoning district, with requests for variations through the Planned Development application (City of Vacaville Municipal Code 14.09.111.060). The minimum development standards designed for the RM zoning district include, but are not limited to, standards for minimum density, lot area, rear yard; front yard; and side yard setbacks, distance between structures, maximum site coverage, and maximum building height. The building height for each of the three proposed elevations would range from 23 feet to 25 feet, in keeping with the surrounding residential neighborhoods. Greater standards may be required as a condition of project approval (City of Vacaville Municipal Code 2016). However, due to the limited parcel size and project feasibility, the proposed project would be built as a Planned Development to allow for variations from the City's development standards for the RM zoning district. The proposed project single-family design guidelines are proposed to be modified as follows: five feet side yard setback on one side and 10 feet side yard setback on the other side with 15 feet between structures. In addition, the maximum Lot Coverage is 40 percent and shall be computed by comparing the entire site area instead of by individual lot, 1.76 acres to the total square footage of the 15 structures. Table 2.0-1 discusses the proposed project's development standards and provides consistency analysis for differing from the zoning standards for residential development.

Table 2.0-1: Municipal Code Requirements and Planned Development

Setback	Municipal Code Requirements (Conditional Use)	Planned Development	Consistency Analysis
Minimum Lot Size	12,000 square feet	57,934.8 square feet	Consistent. However, subdivided

Setback	Municipal Code Requirements (Conditional Use)	Planned Development	Consistency Analysis
		Request additional 18,730.8	lots range from 1,736 sq. ft. to 2,254 sf.
Minimum Front Yard	20 feet	≥ 21.5 feet, with approval of ROW dedication	Privately owned lots do not include front yards. Request setbacks to be measured from the back of the curb to the foremost plane of the structure. Interior units measured by distance from each other.
Side Yard	20 feet + 5 feet for each additional story	5 feet and 10 feet	Request a reduction to the side yard requirements in RM zoning. Alternatively, meet the side yard setback of the existing adjacent lots for compatibility.
Site Width	300 feet	>300 feet	Consistent.
Site Depth	100 feet	>100 feet	Consistent.
Max. Building Height	40 feet	29'-7"	Consistent.
Distance Between Structures	10 feet	15 feet	Consistent. Request to meet the side yard setbacks of the adjacent lots for compatibility.
Rear Yard	20 feet	0 feet	Privately owned lots do not include front yards. Request setbacks to be measured from the back of the structure to

Setback	Municipal Code Requirements (Conditional Use)	Planned Development	Consistency Analysis
			the back of the curb on the internal shared/common driveways.
Private Open Space	400 square feet	≥ 400 square feet	Consistent.
Housing mix	Mix of one- and two- story	All two-story	A two-story structure would provide more floor area considering the smaller lot sizes.
Max Site Coverage	30%	33% of entire project site	Request to determine lot coverage based on percent of entire 1.76 acres that is covered by structures (homes plus patios), similar to that of a multifamily site.
Notes: Setbacks are calculated from the face of the curb.			

Parking

According to the City's Municipal Code, Chapter 14.09.128.080, parking requirements for single-family residential developments are, "two enclosed parking spaces per dwelling unit for new construction. Garage conversions for existing dwellings may be allowed, subject to a determination that the exterior design of the converted area is compatible with the dwelling, and provided that two onsite spaces are maintained in the driveway, or elsewhere onsite as determined by the Director." The Ordinance doesn't specify the exact placement of spaces but small lot subdivisions are typically conditioned to provide a guest parking space within 100 to 200 feet of the unit it is serving. The City Municipal Code further states, "for projects of four units or more, a minimum of 10 feet of landscaping shall be required between a parking lot and property line. Landscaping shall not be required when it would block access to driveways, walkways, or joint access aisles. In addition to the required perimeter landscaping, an additional five percent of the gross parking lot area shall be landscaped."

Consistent with the Residential Design Requirements for New Single Family Development, the proposed project includes off-street parking of four parking spaces per dwelling unit. The proposed project provides 60 parking spaces (30 garage spaces along with 30 additional onsite spaces) for the 15 units. This provides a ratio of four parking spaces per unit, as required.

Landscaping

The City's Municipal Code, Chapter 14.09.074.130, establishes landscaping design criteria. According to the guidelines, "front yard and corner lot street side yard landscaping shall be installed for all dwelling units. Landscaping shall be installed prior to final inspection of the dwelling, except as provided below, and shall comply with the requirements of the Vacaville Water Efficient Landscape Requirements." Additionally, "landscaping shall be provided for all common areas within single-family residential projects, and shall be installed in accordance with the Water Efficient Landscape Requirements" and "on an ongoing basis, no more than 50 percent of the front yard shall be paved with concrete, asphalt, or other similar impervious materials."

Along with the proposed development plans, the Applicant would submit a landscape plan, which meets the general design standards outlined in the City's Municipal Code.

Stormwater

Proposed stormwater runoff from the project site would be directed to proposed area drains. These area drains would be connected to two12 inch and one 10 inch proposed onsite storm drain lines with laterals to area lines. The three onsite storm drain lines would then connect to the existing 18 inch public storm drain line located on the north side of Cogburn Circle. The stormwater would then be conveyed through existing public storm drain lines to the existing detention basin on the east side of Leisure Town Road. The proposed project would be served with drainage service by the City of Vacaville.

Water

A proposed 8 inch onsite water pipe system would branch from the existing 12 inch water main pipe located in Cogburn Circle to provide water to the project site. The proposed project would be served with water service by the City of Vacaville.

Sewer

The proposed project includes two proposed onsite eight inch sanitary sewer lines which would connect with the existing eight inch sewer line located in Cogburn Circle which then connects to the 24 inch sewer line in Vanden Road. Lot 1 would connect to the existing 6 inch sewer stub previously installed to the project site. With a project area of 1.76 acres, the total sewer effluent discharge units (EDUs) from the proposed project would be 15 EDUs (1 EDU per unit). A Sewer Calculation Memorandum (Appendix D) was prepared on October 21, 2016 by Phillippi Engineering Inc., to evaluate the projected sewer flows associated with the Ashton Place Units 1-3, Potters Place, and Park Parish properties as originally intended (CN and RM) versus the

proposed sewer flows which would result from the conversion to Single Family Residential. The proposed project would be served with sewer service by the City of Vacaville

Utilities

The proposed project requires the installation of water meter boxes, backflows for fire sprinklers, sewer cleanouts, cable, phone, and power boxes. Utility boxes are required to be positioned in a manner that they do not dramatically reduce front yard landscaping. Utilities would be provided by Pacific Gas and Electric (PG&E), SBC, and Comcast. According to the General Plan, "in newer developments, the distribution lines for electricity are placed underground, along with cable television, telephone, and natural gas lines." The Applicant would work with the utility companies to relocate the public utility easement (PUE). The proposed development plans would be required to meet these criteria during the City's development review phase, prior to issuance of a building permit.

Onsite Circulation

The proposed project would be accessed by two private driveways and would include multiple onsite private alleys, which would provide access to the garages located in the rear of each residential unit. Interior curbs along the private alleys would be painted red. The HOA would ultimately be responsible and there would be "No Parking" and "Tow Away" signs posted. All driveways and alleys associated with the proposed project would be private.

Lighting

Lighting shall be provided as specified in the City's Municipal Code, Chapter 14.09.127.110. All parking lots and loading areas shall include lighting with sufficient illumination for security and safety. According to the City's Residential Design Requirements for New Single Family Development guidelines, "Alleys and adjacent development shall be designed to promote security and attractive appearance. Project approval shall require features such as:

1. Dwelling units designed to provide visual access to alley areas.
2. Open style fencing along abutting rear yards.
3. Security lighting.
4. Street addresses provided at intersection of alley and public street.
5. Public alleys shall be approved only when a maintenance district is concurrently established.
6. Maintenance of private alleys shall be addressed through CC&R provisions."

The proposed project would be required to meet these criteria during the City's development review phase, prior to issuance of a building permit.

Other Services

The proposed project would be required to adhere to the City's Municipal Code, Chapter 11.01.020, Development Impact Fees.

The proposed project provides an average usable private yard area of 453 sf, with a 400 sf minimum. Instead of providing onsite Open Space, the Applicant is proposing a financial contribution to the City to enhance Magnolia Park, in accordance with the City's Municipal Code. The purpose of the parks and recreation facilities impact fee is to "provide a variety of parks, recreation facilities and park improvement projects such as tennis courts, swimming pools, soccer, ball fields and the like. As development and population increases, park and recreation facilities, inadequate to serve the city, could occur which have potential for adversely affecting the general well-being of city residents. In order to address this potential and to meet city recreation standards it is appropriate that new development pay for additional park facilities and recreation development attributable to development impacts."

The Vacaville Fire Department (VFD) is funded by the City's General Fund, ambulance transport fees, Special Paramedic tax, Inspections fees, impact fees from new development, and from public safety Community Facilities Districts, which have been formed for new development areas to offset the cost of providing public safety services to such areas through the levy of special taxes (General Plan 2015). The proposed project would be part of the City's Southtown Public Safety Community Facilities District #11.

2.2.2 Project Construction Phasing, Access, Staging, Equipment, and Methods

Implementation of the proposed project would result in the construction of a 15 lot single-family detached residential subdivision. The project site would be cleared and graded up to two feet of disturbance, in addition, foundation and grading would consist of cuts and fills of up to five feet to achieve the finished pad grading and provide adequate gradients for site drainage and utility infrastructure. Staging for the proposed project would be located on undeveloped disturbed land located along the southwest portion of Cogburn Circle (Figure 2.0-2). Temporary construction fencing with privacy screens would be used to screen views of the staging site and activities from adjacent residents. All construction staff, vehicle equipment, materials, and construction preparation would take place within these locations. At the time of construction the proposed project would require access to Cogburn Circle for equipment, material, and employee movement to facilitate construction activities. Grading is estimated to begin April 2017 with an estimated construction date of May 2017 through March 2018.

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3.0 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

The environmental factors checked below would be potentially affected by this project, involving at least one impact that requires mitigation to reduce the impact from "Potentially Significant" to "Less Than Significant" as indicated by the checklist on the following pages.

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

Evaluation of Environmental Impacts

Section 3.0, Environmental Checklist and Environmental Evaluation, presents the environmental checklist form found in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which mitigation has not been identified. If any potentially significant impacts are identified, an Environmental Impact Report (EIR) must be prepared. An ISMND cannot be used in the case of a project for which this conclusion is reached in any impact category.

Less Than Significant with Mitigation Incorporated: This designation applies where applicable and feasible mitigation measures previously identified in prior applicable EIRs or in the General Plan EIR have reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact", and pursuant to Section 21155.2 of the Public Resources Code (PRC), those measures are incorporated into the ISMND.

This designation also applies where the incorporation of new project-specific mitigation measures not previously identified in prior applicable EIRs or in the General Plan EIR has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact".

Less Than Significant Impact: Any impact that would not be considered significant under CEQA, relative to existing standards.

No Impact: The project would not have any impact.

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3.1 AESTHETICS

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

3.1.1 Environmental Setting

This section provides a description of existing visual conditions in the vicinity of the proposed project and an assessment of changes to those conditions that would occur from implementation of the proposed project. Impacts of the proposed project on the visual environment are generally defined in terms of a proposed project's physical characteristics and potential visibility, the extent to which the proposed project's presence would change the perceived visual character and quality of the environment where it would be located, and the expected level of sensitivity that the viewing public may have in areas where project facilities would alter existing views.

The aesthetic quality of a community is composed of visual resources, which are those physical features that make up the visible landscape, including land, water, vegetation, and the built environment (e.g., buildings, roadways, and structures).

Visual Distance Zones

The following distance zones (foreground, middleground, and background) can be used to characterize the dominant visual character from each vantage point and describe views in terms that can be analyzed and compared. The sensitivity of views, which have been modified from the existing environment, is defined in order to establish thresholds for the analysis of potential visual impacts resulting from the implementation of the proposed project.

Foreground Views

Foreground views include elements that can be seen at a close distance and that dominate the entire view. Impacted views at this distance are generally considered potentially adverse when viewed by a sensitive viewer group, such as surrounding residents, workers, pedestrians, or regular motorists.

Middleground Views

Middleground views include elements that can be seen at a middle distance and that partially dominate the view. Impacted views at this distance are generally considered to be potentially adverse when viewed by a sensitive viewer group.

Background Views

Background views include elements that are seen at a long distance and typically do not dominate the view, although they are part of the overall visual composition of the view. Impacted views at this distance are generally considered not to be an adverse impact when viewed by a sensitive viewer group.

Regional Setting

The proposed project is located in Solano County, in the City of Vacaville. The City is located in northern Solano County, midway between San Francisco and Sacramento. The City has transformed from a small agricultural town into a thriving and progressive city (City of Vacaville 2016). Views of the Vaca Mountains, open space areas characterized by oak-dotted hillsides, Alamo and Ulatis Creeks, and flat fields of row crops are scenic values experienced from a number of public vantage points throughout the City (General Plan EIR 2013). Scenic resources are a valued local asset for the community, and are an important element of the City's quality of life (General Plan 2015).

Visual Setting

The project site is located in the Southtown Project Area, in southeast Vacaville. As part of the Southtown Project build-out, the project site is previously disturbed, and is one of the last remaining undeveloped lots in the Southtown Project Area. With the exception of a temporary trailer and three conex storage containers, there are no existing structures on the project site. The project site is located on the northwest corner of the intersection of Vanden Road and Cogburn Circle. The project site is a relatively flat undeveloped lot, with a gentle upslope gradient trending toward the eastern portion of the project site. Most of the project site consists of non-native vegetation, grasses, and low-lying plants. The south side of the project site, along Cogburn Circle, features a sidewalk and landscape plantings. The VFD Station 75 and Magnolia Park are located directly south of the project site, across Cogburn Circle. There is a six foot decorative masonry wall constructed along the north, east, and west boundaries of the project site. In addition to the proposed project, there are three residential projects; Ashton Place Unit 1, Ashton Place Unit 2, and Potter's Place, proposed to be constructed in the surrounding area of the project site. The proposed project is proposed to be constructed first. During construction, the proposed project would use the undeveloped disturbed land along the southwest portion of

Cogburn Circle, proposed to be developed as Ashton Place Unite 1 and Ashton Place Unit 2 once the proposed project is completed (Figure 2.0-2).

Key Views of the Project Site

Below is a description of the surrounding land uses and corresponding views of the project site. Photographs of the project site were taken during a reconnaissance survey performed by Stantec on September 2, 2016. Photographs were taken from key observation points (KOPs) of the project site in the surrounding vicinity. Figures 3.1-1 to 3.1-4 provides a graphic representation of the identified KOPs for the project site from the surrounding land uses.

North

North of the project site is a residential neighborhood consisting of two-story single-family residences on wide, shallow lots located in an area zoned Residential Low Medium (5.1 to 8.0 units per acre) by the City's Municipal Code. There are five existing suburban single-family residences that abut the northern boundary of the project site. The single-family residences, located north of the project site, are uniquely designed as wide, shallow suburban detached residential units with neutral color stucco finishing's and stucco tile roofing. Each residential unit has an attached side garage. The architectural elements of the residences, located north of the project site, are similar to the residences located west and south of the project site. Views of the project site from the single-family residences are generally obstructed by the six foot decorative masonry wall constructed along the northern boundary of the project site. Views of the project site from the second-story of the single-family residences consist of a grassy, flat, undeveloped lot, the VFD Station 75, and Magnolia Park.

South

Cogburn Circle borders the southern boundary of the project site. Directly across the street from the project site is the Magnolia Neighborhood Park, and the newly constructed VFD Station 75. Phase one development of Magnolia Park is completed and is approximately 5.9 acres. Phase two development of Magnolia Park would include an additional 6.9 acres. Magnolia Park provides City residents with multiple shaded picnic areas, public restrooms, a basketball court, children's playground and splash pad, and open space play field. Magnolia Park is surrounded by a network of pedestrian amenities which include sidewalks, bike paths, and trails. Views of the project site from Magnolia Park and VFD Station 75 consist of grassy, flat, undeveloped land. There are ornamental trees and shrubs planted along the southern boundary of the project site that somewhat obstruct views of the project site.

West

The western boundary of the project site is bordered by Vega Way. Two-story single-family residences are located across Vega Way from the project site. The single-family residences are located in an area zoned Residential Low Medium (5.1 to 8.0 units per acre) by the City's Zoning Ordinance. The single-family residences are uniquely designed as wide, shallow suburban detached residences, and complete with neutral color stucco finishing's, and stucco tile roofs. The homes on these wide-shallow lots are all 2-story with setbacks as follows:

- Minimum 20 ft. to the living space (or 15 ft. from the porch) from the front property line.
- About 27 ft. to the living space from the curb on Vega Way.
- About 32 ft. to the living space from the curb on Cogburn Circle.
- Minimum 20 ft. from the rear property line; with a range of 18 ft. to 47 ft. from the proposed project site.
- Minimum 5 ft. from the side property lines; 30 ft. setback from the curb on corner lots.

Each residential unit has an attached side garage. The architectural elements of the single-family residences, located west of the project site, are similar to the residences located north of the project site. Views of the project site from single-family residences, located across the street, are generally obstructed by the six foot decorative masonry wall constructed along the western boundary of the project site. Ornamental trees have been planted along the western boundary of the project site, which somewhat obstruct view of the project site. Views of the project site from the second-story of the single-family residences consist of a grassy, flat, undeveloped lot.

East

The eastern boundary of the project site is bordered by Vanden Road. The area across the street from the eastern boundary of the project site is currently undeveloped, and would be developed as Southtown Phase 3 based on the approved tentative map for single family residential and neighborhood commercial uses. The commercial portion of land east of the project site is proposed to be re-zoned as Residential Medium (8.1 to 14.0 units per acre) as part of a different submitted project request. Views of the project site are largely obstructed by the six foot decorative masonry wall, constructed along the eastern boundary of the project site. Additionally, ornamental trees have been planted along the eastern boundary of the project site, obstructing views of the project site.

Scenic Resources/Corridors

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. According to the Caltrans State Highway Network Data Library, and the General Plan there are no State scenic highways located in the City (Caltrans 2016, and General Plan 2015).

The City's scenic resources are a valued local asset for the community. The General Plan does not identify any official scenic vistas (General Plan 2015). While the General Plan does not designate any official scenic vistas, the General Plan considers westward views of the Vaca Mountains, a part of the Inner Coast Range, and views of the Inner Coast Range hillsides within the City as scenic vistas that are worthy of protection. Additional scenic resources in the City consist of rural and undeveloped lands, hillsides surrounding the City, Vaca Mountains, English Hills, Alamo Creek Ridge, creeks, and riparian corridors (General Plan 2015).

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.1-1. Key Observation Point Locations

Prepared: MNugent, 10/5/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

C:\Users\kaejohnson\Documents\ArcGIS\Packages\Ashton_KOPLocs_8by11P_01_74686978-483E-40FC-879F-1A88C9FB493F\v103\Ashton_KOPLocs_8by11P_01.mxd KAEJOHNSON 2016-10-05

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Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.1-2. Key Observation Point, Location 1

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Figure 3.1-3. Key Observation Point, Location 2

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Vacaville, California

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Figure 3.1-4. Key Observation Point, Location 3

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Light and Glare Conditions

The terms "glare" and "skyglow" are used in the following analysis to describe the visual impacts of lighting. For the purposes of this impact analysis, glare is considered to be direct exposure to bright lights and skyglow. Skyglow extends beyond the light source and can dominate or partially dominate views above the horizon. Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, skyglow, and over-lighting. Excessive light and glare can be visually disruptive to humans and nocturnal animal species, and often reflects an unnecessarily high level of energy consumption. Light pollution has the potential to become an issue of increasing concern as new development contributes additional outdoor lighting installed for safety and other reasons.

In general, nighttime lighting in the project vicinity is likely minimal and does not produce substantial glare or skyglow. The project site is currently undeveloped and does not contain any streetlights, or any other sources of light and glare. Nighttime lighting is present in the surrounding area mainly as streetlight lighting, parking lot lighting, building security lighting for the surrounding residences and VFD Station 75, and security lighting for Magnolia Park.

3.1.2 Methodology

Viewer Exposure and Sensitivity

Viewer sensitivity is considered when assessing the impacts of visual change and is a function of several factors. The sensitivity of the viewer or viewer concern is based on the visibility of resources in the landscape, proximity of the viewers to the visual resource, elevation of the viewer relative to the visual resource, frequency and duration of views, number of viewers, and types and expectations of individuals and viewer groups.

The viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Visibility and visual dominance of landscape elements depend on their placement within a viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1988). Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and thus the more visually important it is to the viewer. For purposes of analysis, landscapes are separated into foreground, middleground, and background views (U.S. Forest Service 1995). In general, the foreground is characterized by clear details (within 0.25 or 0.5 mile of the viewer); the middleground is characterized by the loss of clear detail in a landscape, creating a uniform appearance (from the foreground to three to five miles in the distance); and the background extends from the middleground to the limit of human sight.

Visual sensitivity is also affected by viewer activity, awareness, and expectations in combination with the number of viewers and the duration of the view. Visual sensitivity is generally higher for views that are observed by people who are driving for pleasure, or engaging in recreation activities such as hiking, biking, camping or by residents of an area. Sensitivity is lower for people engaged in work activities or commuting to work. Viewer response must be based on the regional context. The same landform or landscape feature may be valued differently in different

settings; landscape features common in one area would not be valued as highly as the same feature in a landscape that generally lacks similar features. For example, a small hill may have little value in a mountainous area, but may be highly valued in a landscape that has little topographic variation.

Assumptions

The following visual resources impact analysis is based on a reconnaissance survey of the project site and the surrounding areas on September 2, 2016, interpretation and analysis of aerial photographs, and field survey photographs of the project site.

Analysis of the proposed project's visual impacts is based on an evaluation of the changes to the existing visual resources that would result from implementation of the proposed project. In determining the extent and implications of the visual changes, consideration was given to: the existing visual quality of the affected environment, specific changes in the visual character, and quality of the affected environment; the visual context of the affected environment; the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and the sensitivity of viewers, access of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the proposed project.

3.1.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact AES-1 Have a substantial adverse effect on a scenic vista?

Impact Analysis

The proposed project consists of developing the 1.76 acre site with 15 single-family detached residential units. The project site is located in an existing residential neighborhood. Having previously been disturbed as part of the Southtown Project development, the topography of the project vicinity is generally flat. According to the General Plan there are no officially designated scenic vistas in the City. The General Plan considers westward views of the Vaca Mountains, a part of the Inner Coast Range, and views of the Inner Coast Range hillsides within the City as scenic vistas (General Plan EIR 2013). In addition, the General Plan identifies the following scenic resources within the City as, the Vaca Mountains, English Hills, surrounding hillsides, rural and undeveloped lands, creeks, and riparian corridors (General Plan 2015). The surrounding area is substantially built out, and existing views of the surrounding hillsides, southeast of the project site, are obscured by surrounding residential development. Foreground views of and from the project site are limited due to the suburban nature of the surrounding area; therefore, the project site is not within the viewshed of a scenic vista.

The proposed project design would be similar in scale, height, and character as the existing nearby residential developments. The proposed project would be consistent with most of the minimum development standards designed for permitted and conditional uses in the RMD

District, in accordance with the City's Municipal Code, Chapter 14.09.074, except where variations and exceptions to the standards are requested through the Planned Development. The proposed project design would be compatible with the surrounding residences, and incorporate the following development standards:

Elevation Design

The average building height of the surrounding residential developments is 27 +/- feet. The proposed project would consist of three architectural styles. Each architectural style would be designed with three different floor plans with each floor plan having three elevation types. As discussed in Section 2.0, Project Description, Plan 1 elevations would range from 25'-0" to 26'-9", Plan 2 elevations would range from 25'-9" to 27'-10", and Plan 3 elevations would range from 27'-5" to 29'-7". The proposed project average building height would be 27 +/- feet, compatible with the surrounding residences. Based on the grading plans each residential unit would be constructed on a 0.50 foot building pad, with the finished floor grade elevations ranging from 98.60 feet to 99.80 feet. Residential units abutting the northern boundary of the project site range from 100.10 feet to 100.40 feet. The proposed project would be staggered. Building massing would be compatible with the abutting properties along the perimeter of the northern boundary. Therefore, the building elevations would conform to the maximum building height limitations of the RMD District, as outlined in the City's Municipal Code.

Setbacks

The proposed project would implement side yard setbacks with five feet on one side and 10 feet on the other side as part of the Planned Development request, and consistent with the adjacent RLM-3.6 zoning. The proposed project would provide 15 feet between each building. The proposed private homes do not have front yards. However, the setbacks from the public street to the front of the house would be 21.5 feet minimum, if the City agrees to abandon the public right of way to the proposed project. The lot size of the proposed project would incorporate a compact design to allow for a higher density, which is encouraged in the City's ECAS, as discussed in Section 2.0, Project Description.

The proposed project is not, by CEQA definition, a scenic vista and would not have a substantial adverse effect on a scenic vista. The proposed project would be of similar scale, height, and character to the surrounding residences, and would be consistent with the RM zoning development standards outlined in the City's Municipal Code, except where variations and exceptions to the standards are requested through the Planned Development. Furthermore, the proposed project is located in a suburban setting, with limited viewsheds of the surrounding hillsides. Therefore, the potential impact on views from the adjacent properties would be minimal, and the proposed project would result in a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Impact Analysis

According to Caltrans California Scenic Highway Mapping System and the General Plan, there are no officially designated State scenic highways located within the City. Additionally, the project site is barren of significant rock outcroppings or historic buildings. Therefore, the proposed project would have no impact on scenic resources such as rock outcroppings, trees, or historic buildings within view from a State scenic highway. No impact would occur.

Level of Significant Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AES-3 Substantially degrade the existing visual character or quality of the site and it surroundings?

Impact Analysis

The proposed project would subdivide the 1.76 acre site and develop 15 two-story single-family detached residential units (8.52 units/acre). The project site is located in a suburban residential area of the Southtown Project Area. The northern boundary of the project site is bordered by five single-family residences, Cogburn Circle to the south, Vanden Road to the east, and Vega Way to the west. The Magnolia Park and VFD Station 75 are located directly across the street from the southern boundary of the project site. The project site is currently designated CN in the City's General Plan. The Applicant is proposing to change the General Plan designation of the project site to RMD and also rezone the project site to RM.

<u>Short-Term Construction Impacts</u>

Of the four proposed projects in the surrounding area, the proposed project is proposed to be constructed first. During construction of the proposed project, staging would be located on the undeveloped, disturbed land located along the southwest portion of Cogburn Circle, proposed

to be developed as the Ashton Place Unit 1 and Ashton Place Unit 2 developments. In order to reduce visual impacts to the surrounding area, temporary construction fencing with privacy screens would be installed to screen views of the staging site, and construction activities from adjacent residents. All construction staff, vehicle equipment, materials, and construction preparation would take place within these locations. Therefore, with the implementation of construction fencing with privacy screens, visual impacts during construction would be less than significant.

Operational Impacts

The proposed project would be designed as a residential neighborhood complete with landscaping, pedestrian-friendly walkways, and street trees. The proposed project would incorporate an efficient and compact design, compatible with the design of the existing nearby residences in the Southtown Project Area.

Consistent with the City's development requirements, the proposed project includes three architectural styles with three different floor plans for each of the three elevations. The three architectural styles include; Spanish, French Country, and Craftsman. Each architectural style would incorporate design elements that are compatible with the size, character, and quality of the adjacent homes and lots, in accordance with General Plan Policy LU-P23.1. The surrounding residential neighborhoods consist of two-story post-modern styled homes typical of suburban neighborhoods. The surrounding post-modern styled homes incorporate distinctive architectural features from a variety of styles including; Spanish, French Country, and Craftsman, as proposed by the project. The proposed project requests to not include single-story units, which is consistent to the surrounding area as there are no single-story homes in the project vicinity. Furthermore, the proposed project would incorporate compatible architectural features with the surrounding residences such as, decorative shutters and arches above the windows, stucco finishes, shingle and tile roofs, wood posts with awnings above entry ways, deep set doors, and neutral earth tone paint colors. The proposed project would include some varying plains on three elevations with additional enhancements on the side walls facing Cogburn Circle to maximize architectural interest. Each proposed residential unit would have a rear entry garage, off the interior onsite alleys.

In accordance with the City's landscaping code, 14.09.074.130, the proposed project would install landscaping for the front yard and corner lot street side yard for all residential units, and to enhance the project site. The proposed project would also install additional trees and other landscaping throughout the common area to provide for shading of sidewalks/walking paths and to shield the fronts of the homes in close proximity to the sidewalks. Landscaping would comply with the requirements of the Vacaville Water Efficient Landscape Requirements. Additionally, the proposed project would comply with the City's ECAS wastewater measure to install drought-tolerant native landscaping, where appropriate (ECAS 2015). Final Landscape Plans would be reviewed and approved by the Community Development Director.

Variations and exceptions to the standards are requested through the Planned Development because the proposed project does not meet all of the minimum development standards designed for permitted and conditional uses in the RMD District, in accordance with the City's

Municipal Code, Chapter 14.09.074. The project requests exceptions to setbacks from the City's Code and from the existing homes as follows:

	Vega way		Cogburn Circle		Vanden Road	
Curb to Living Space*	Existing	Proposed	Existing	Proposed	Existing	Proposed
Front	27 ft.	24.5 ft - 27.5 ft.	32 ft.	n/a	n/a	33.4 ft. – 36 ft.
Corner lots, side setback	n/a	n/a	n/a	21.5 ft. – 25.4 ft.**	n/a	n/a
The distance from the proposed homes to the rear property line of the existing homes is 12 ft. *Not include porch. **Side yard extends additional 5 ft. closer, ranging from 16.5 ft. – 25.4 ft. from the curb.						

Pursuant to General Plan Policy LU-P23.1 the proposed project is required to conform to the Residential Design Requirements for New Single-Family development. These exceptions and the Planned Development are also part of the City's review of the proposed project design through the City's design review process.

By incorporating a compact, efficient design compatible with the architectural features of the surrounding residences the overall aesthetic character of the proposed project would conform to the City's General Plan, City's Municipal Code, and the City's Residential Design Guidelines, all of which have been developed to ensure visual conformance onsite and offsite. Therefore, the proposed project would not substantially degrade the visual character of the project site or its surroundings; impacts to the visual character of the proposed project and surrounding area would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The proposed project would develop as many as 15 single-family detached residential units. New sources of light and glare may potentially be intrusive since the project site is undeveloped and does not currently generate nighttime lighting. The proposed project would incorporate private streetlights, parking lot lighting, public streetlights, low-level landscape lighting, motion activated exterior lights on the rear elevation of each residential unit, as well as exterior lighted placards. In addition, construction of buildings with glass windows or other reflective surfaces would introduce new sources of daytime glare and nighttime glow. These are long term, operational impacts. With the incorporation of additional exterior light sources associated with the

proposed project, the light and glare impacts are expected to be incremental and visible from surrounding residences, land uses and streets, and may potentially degrade current daytime and nighttime views. However, lighting on the project site is an impact accounted for in the Southtown Project EIR as the project site was anticipated to be commercially developed. Additionally, typical residential lighting requires lower lumens than that of commercial. Therefore, operational lighting impacts are anticipated to be less than previously anticipated in the Southtown Project EIR.

Light generated by the proposed project could also be perceived as a nuisance by those traveling to, from, and passing by the project site if the proposed project were to include light that is excessive, improperly placed, or inadequately screened. Therefore, a potentially significant impact may occur if not appropriately mitigated. As it relates to glare and glass, the resulting amount of reflective surface area would have the potential to impact daytime views in the area by adversely affecting drivers passing by the proposed project. However, the proposed project plan does not propose buildings with significant amounts of reflective materials. Moreover, construction materials would consist of concrete tile roofing, stucco finish, cementitious siding and shingles, stucco finish trims, wood posts, and stone veneer none of which is highly reflective; hence, significant glare impacts are not expected to occur. Nonetheless, Mitigation Measure AES-1 and Mitigation Measure AES-2 are proposed to ensure that the potentially significant impact with regard to lighting and glare is reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM AES-1: In accordance with City's Municipal Code, Chapter 14.09.127.110, the Applicant shall provide a lighting plan to the City for review and approval. The lighting plan shall include provisions to ensure that outdoor lighting is designed so that potential glare or light spillover to surrounding roadways, properties, and residences are minimized through appropriate site design and shielding of light fixtures. The City shall review the lighting plan to ensure that all lighting is directed downward and away from adjacent properties and residences. This mitigation measure does not preclude the use of small-scale decorative lighting that may be directed upward, such as wall wash lighting or spot lighting for landscaping. This type of lighting is allowed if it does not spill over onto adjacent properties.

MM AES-2: Parking Lot lighting shall be designed so that lighting, glare, and reflection are directed away from residences. This may be accomplished with hoods, shields, or other ways of directing light. Final lighting design shall be reviewed and approved by the Community Development Director.

Level of Significant After Mitigation

Less Than Significant Impact With Mitigation.

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3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The U.S. Department of Agriculture (USDA) and California Department of Conservation (CDC) monitor conversion of farmland and develop methods for categorizing farmland according to its overall agricultural capacity. Concern for the loss of important farmland led the CDC to develop the Farmland Mapping and Monitoring Program (FMMP), which classifies different agricultural soil types relating to their ability to sustain agricultural crops. The following categories include:

- **Prime Farmland.** Land with the best combination of physical and chemical features for the long-term production of agricultural crops. This land can economically produce

sustained high yields when treated and managed according to modern farming methods.

- **Farmland of Statewide Importance.** Lands with a good combination of physical and chemical features but with minor shortcomings such as greater slopes or with less ability to hold and store moisture.
- **Unique Farmland.** Lands with less quality soils used for the production of the State's leading agricultural cash crops.
- **Farmland of Local Importance.** Land and other agricultural land identified by the local jurisdiction as being important.

The City of Vacaville has traditionally contained areas of land used for grazing, orchards, field, and row crops, and has since become urban and diversified (General Plan 2015). Agriculture takes place on two-thirds of the land in Solano County, with irrigated agriculture taking place on half of the farmland (Southtown Project EIR 2003). The primary crops in the county are nursery stock, tomatoes, alfalfa hay, cattle, wine grapes, feeder lambs, wheat field corn, walnuts, and milk. Prior to the development of the Southtown Project Area, approximately 95 percent of the total project area was agricultural land. As a result of the Southtown Project, the Southtown Area has transformed from agricultural lands to a more urban area. The project site and undeveloped parcel, located east of the project site are the remaining undeveloped parcels in the Southtown Area.

The project site and undeveloped site located east of the project site are zoned CN and designated CN. As part of the proposed project, the Applicant is requesting an amendment to the General Plan from CN to RMD, and a zone change from CN to RM to be consistent with the General Plan. The proposed project would develop 15 two-story detached residential unites on 1.76 acres. The proposed project would consist with the surrounding residential properties in the project area. To the north, the project site is bordered by five existing single-family residential properties, to the south the project site is bordered by Cogburn Circle; Magnolia Park and the VFD Station 75 are directly across the project site on Cogburn Circle, to the east the project site is bordered by Vanden Road; and an undeveloped parcel zoned CN lies directly south of Vanden Road, and to the west the project site is bordered by Vega Way; single-family residences lie directly west of Vega Way.

3.2.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, CDC FMMP database, historical aerial imagery of the project site; as available through Google Earth 2016, Solano County 2013-2014 Williamson Act Map, Southtown Project EIR, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the effects of the proposed project related to agriculture and forestry resources in the City.

3.2.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact AG-1 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact Analysis

Prior to the development of the Southtown Project Area, lands were previously used for agricultural purposes and designated Prime Farmland. Impacts associated with the conversion of Prime Farmland to non-agricultural use were previously evaluated under the Southtown Project EIR (Southtown Project EIR 2003). According to the City's Zoning Map, the Southtown Area is primarily zoned for residential and commercial uses. The Southtown Project EIR determined agricultural conservation easements or other similar mechanisms, as determined by the City Council, to preserve 245 acres of active farmland in Solano County would be dedicated to offset the Southtown Project's impact to prime farmland (Southtown Project EIR 2003).

According to the City's Zoning Map, the project site and undeveloped parcel, located directly east of the project site, are zoned CN. The undeveloped parcel located southeast of the project site, directly across from Magnolia Park, is zoned Community Facilities and is planned to complete the other half of Magnolia Park. All other lands within the project vicinity are zoned for residential use. The project site would be rezoned to RM as part of the proposed project. The CN and RM zoning designations do not permit agricultural uses. The proposed project would develop 15 two-story single-family residences, and would be consistent with the surrounding land uses. Development of single-family homes in a RM district is subject to a CUP with a Planned Development Application. The proposed project would adhere to the development standards established in the City's Municipal Code. As such, through the dedication of agricultural conservation easements for 245 acres of active farmland, and the re-zoning of the project site from CN to RM, the proposed project would not result in the conversion of prime, unique, or farmland of Statewide Importance. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-2 Conflict with existing zoning for agricultural use or a Williamson Act contract?

Impact Analysis

In the Southtown Project EIR approximately 45 percent of the project area's western edge was under non-renewal filing, as of the fiscal year 2002- 2003. All other areas within the Southtown Project Area are not under Williamson Act contracts. The project site is located in the eastern portion of the Southtown Project Area. As part of the proposed project, the project site would be rezoned from CN to RM, neither of which are an agricultural zoning designation. In addition, the Solano County 2013-2014 Williamson Act Map does not identify the project site or lands surrounding the project site as being encumbered by a Williamson Act contract (California Department of Conservation 2014). Therefore, the proposed project would not conflict with existing agricultural zoning or with a Williamson Act contract. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-3 Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Impact Analysis

The FMMP database identifies the project site as "Urban and Built-Up Land" (California Department of Conservation 2014). The proposed project is located in an urban residential area in the Southtown Project Area. There are no forest resources on or adjoining the project site. As part of the proposed project, the project site would be rezoned from CN to RM, neither of which allow for forestland and timberland production. Therefore, the proposed project would not conflict with existing zoning or cause rezoning of forestland or timberland zoned for timberland production as defined by Government Code section 51104(g). No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-4 Result in the loss of forestland or conversion of forestland to non-forest use?

Impact Analysis

The project site is undeveloped. There are no forestland resources on or adjoining the project site, or within the general vicinity of the project site. The project site is located in an urban residential neighborhood in the Southtown Project Area. As such, construction of the proposed project would not result in the loss of forestland or conversion of forestland to non-forest use, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

Impact Analysis

The FMMP identifies the project site as "Urban and Built-Up Land" (California Department of Conservation 2014). The project site is undeveloped and located in a residential neighborhood in the Southtown Project Area. As part of the proposed project, the project site would be rezoned from CN to RM, and would develop 15 two-story single-family residential units. Lands surrounding the project site are either in residential use or would be rezoned for planned residential use. Therefore, the proposed project would be consistent with the existing land uses, and would not involve changes to the existing environment and result in the conversion of farmland to non-agricultural use, or forestland to non-forest use. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.3 AIR QUALITY

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

3.3.1 Environmental Setting

The proposed project is located within the Sacramento Valley Air Basin (SVAB). SVAB encompasses the northern California central valley, from Shasta County to northeastern Solano County. The proposed project is located in northern Solano County within the SVAB and is considered to be within the Sacramento region. The local air pollution control agency with jurisdiction over the proposed project is the Yolo-Solano Air Quality Management District (YSAQMD). The Bay Area Air Quality Management District (BAAQMD) boundaries are located to the south of the project site.

Solano County is in nonattainment of the State ozone and particulate matter (10 microns and less in diameter) (PM_{10}) and the federal 8-hour ozone and particulate matter (2.5 microns and less in diameter ($PM_{2.5}$) standard. The County is unclassified for the State $PM_{2.5}$ and federal PM_{10}. An unclassified designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or nonattainment (California Air Resources Board [CARB] 2016). According to the YSAQMD, pollutants of concern within the district are ozone, particulate matter (PM_{10} and $PM_{2.5}$), and Toxic Air Contaminants (TACs) (YSAQMD 2015a).

Ozone is not emitted directly into the air; rather, it is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and Nitrogen Oxides (NOx), react in the atmosphere in the presence of sunlight to form ozone. Significant ozone formation generally requires an adequate amount of ozone precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. The conditions for ozone formation are prevalent during the summer when thermal inversions are most likely to occur (YSAQMD 2015a).

PM levels tend to be highest during the winter months when the meteorological conditions favor the accumulation of localized pollutants. This occurs when relatively low inversion levels trap pollutants near the ground and concentrate the pollution (YSAQMD 2015a).

TACs are generally caused through anthropogenic sources, including mobile sources (transportation), stationary sources (factories, refineries, power plants) and indoor sources (building and cleaning materials) (YSAQMD 2015a).

Criteria Air Pollutants

Standards have been established for the following six pollutants:

Ozone (O_3)

According to CARB, ozone is a pollutant that forms in the atmosphere through complex reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Key pollutants involved in ozone formation are hydrocarbon and nitrogen oxide gases. Ozone is a highly reactive and unstable gas capable of damaging the linings of the respiratory tract. Exposure to levels of ozone above the current ambient air quality standard can lead to human health effects such as inflammation, tissue damage, and impaired functioning of the lung. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. The greatest risk for harmful health effects belongs to outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during smoggy periods. Elevated ozone levels can reduce crop and timber yields, as well as damage native plants (CARB 2009).

Carbon monoxide (CO)

According to the U.S. Environmental Protection Agency (EPA), "CO is a colorless, odorless gas emitted from combustion processes. Nationally and, particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At extremely high levels, CO can cause death. EPA first set air quality standards for CO in 1971. For protection of both public health and welfare, EPA set an 8-hour primary standard at 9 parts per million (ppm) and a 1-hour primary standard at 35 ppm. In a review of the standards completed in 1985, EPA revoked the secondary standards (for public welfare) due to a lack of evidence of adverse effects on public welfare at or near ambient concentrations. The last review of the CO National Ambient Air Quality Standards (NAAQS) was completed in 1994 and the EPA chose not to revise the standards at that time" (EPA 2014a).

Lead (Pb)

According to the EPA, "Pb is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been from fuels in on-road motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from on-road motor vehicle gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers" (EPA 2014b).

Nitrogen dioxide (NO_2)

According to CARB, "NO_2 is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract. This pollutant is also an essential ingredient in the formation of ground-level ozone pollution. NO_2 is one of the nitrogen oxides emitted from high-temperature combustion processes, such as those occurring in trucks, cars and power plants. In the presence of sunlight, complex reactions of nitrogen oxides with ozone and other air pollutants produce the majority of NO_2 in the atmosphere. Indoors, home heaters and gas stoves also produce substantial amounts of NO_2. Exposure to NO_2 along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current California air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children" (CARB 2015a).

Particulate matter (PM_{10}, $PM_{2.5}$)

According to CARB, "PM is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as "respirable particulate matter" or "PM_{10}." Fine particles are 2.5 microns or less in diameter or "$PM_{2.5}$" and can contribute significantly to regional haze and reduction of visibility in California. Extensive research indicates that exposure to outdoor PM_{10} and $PM_{2.5}$ levels exceeding current air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing visibility, the acidic portion of PM (nitrates, sulfates) can harm crops, forests, aquatic and other ecosystems" (CARB 2005a).

Sulfur dioxide (SO_2)

According to the EPA, "SO_2 is one of a group of highly reactive gasses known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. SO_2 is linked with a number of adverse effects on the respiratory system. EPA first set standards for SO_2 in 1971. EPA set a 24-hour primary standard at 140 parts per billion (ppb) and an annual average standard at 30 ppb (to protect health). EPA also set a 3-hour average secondary standard at 500 ppb (to protect the public welfare). The last review of the SO_2 NAAQS was completed in 1996 and the Agency chose not to revise the standards. In the last review, EPA also considered, but did not set, a five minute NAAQS to protect asthmatics at elevated ventilation rates from bronchoconstriction and respiratory symptoms associated with 5-10 minute peaks of SO_2" (EPA 2015).

Toxic Air Contaminants (TACs)

TACs are air contaminants not included in the California Ambient Air Quality Standards (CAAQS) but are considered hazardous to human health. TACs are defined by CARB as those pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health."

The health effects associated with TACs are generally assessed locally rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; TACs can also cause short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and the cancer risk is expressed as excess cancer cases per one million exposed individuals (typically over a lifetime of exposure).

Diesel Particulate Matter

Diesel particulate matter is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases: gas and particle. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines, such as the on-road diesel engines of trucks, buses, and cars, and off-road diesel engines that include locomotives, marine vessels, and heavy duty equipment (EPA 2014c).

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The EPA has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the Clean Air Act, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentinite rock. According to the U.S. Geological Survey (USGS) Geologic Map, the proposed project is not located in an area known to contain ultramafic or serpentine rock (USGS 2011).

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The project site would be considered a sensitive receptor because it is residential in nature. Other existing sensitive receptors in the vicinity of the project site include other residences located to the north and west of the project site. Additionally, a park facility is located immediately south of the proposed project.

Air Quality Standards

According to CARB, "Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). A SIP is a prepared by each state describing existing air quality conditions and measure that would be followed to attain and maintain federal standards. The 1990 amendments to the federal Coalition for Clean Air (CCA) set deadlines for attainment based on the severity of an area's air pollution problem" (CARB 2015b).

The SIP for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for each regional air district. A SIP is prepared by the regional air district and sent to CARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The CARB also administers the CAAQS for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The federal and State ambient air quality standards are summarized in Table 3.3-1.

Table 3.3-1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m³)	0.070ppm (137 µg/m³)	
Respirable Particulate Matter	24 Hour	50 µg/m³	150 µg/m3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
Fine Particulate Matter	24 Hour	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12 µg/m³	
Carbon Monoxide	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	—
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)	—	—
Nitrogen Dioxide	1 Hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	—
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m³)

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30-Day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Visibility-Reducing Particles	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 µg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)		

Notes:

[1] - In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

mg/m³:= milligrams per cubic meter

µg/m³ : micrograms per cubic meter

Source: CARB 2016a

As summarized in Table 3.3-2, Solano County is currently designated as nonattainment for State ozone and PM_{10} standards, as well as national ozone and $PM_{2.5}$ standards. The County is currently designated unclassified for State $PM_{2.5}$ and federal PM_{10}. The standards for CO, NO_2, SO_2, and lead are being met in the County. Due to prevailing winds, ozone emissions in Solano County tend to be generated in the Bay Area and transported east to the County. As such, the YSAQMD is included in the Sacramento Federal Non-attainment Area by the EPA. Air districts throughout the Sacramento region are involved in cooperative planning efforts to meet federal and State health standards. The YSAQMD, as part of the Sacramento region, is incorporated into

the following 8-hour ozone attainment plans developed by the Sacramento Metro Air Quality Management District (SMAQMD):

- 2013 Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013).
- Milestone Report (2012).
- Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2011).
- 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2009).
- 2011 Reasonable Further Progress Plan (2008).
- Voluntary Reclassification to Severe (2008).
- 2008 Rate of Progress Plan (2006).
- Proposed $PM_{2.5}$ Implementation/Maintenance Plan and Re-Designation Request for Sacramento $PM_{2.5}$ Non-Attainment Area (2013).

Table 3.3-2: Solano County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Non-attainment	Non-attainment
PM_{10}	Non-attainment	Unclassified
$PM_{2.5}$	Unclassified	Non-attainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	—
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	—
Visibility Reducing Particles	Unclassified	—
Source: CARB 2016b		

Thresholds of Significance

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State AAQS. Therefore, for most projects evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, the YSAQMD has developed the Handbook for Assessing and Mitigating Air Quality Impacts, adopted July 11, 2007. The YSAQMD's Handbook includes the recommended thresholds of significance for project-level emissions, as summarized in Table 3.3-3. As stated previously, the BAAQMD boundaries are located to the south of the project site. In certain instances when large development projects have been located near the BAAQMD boundaries, the YSAQMD has recommended evaluating the projects using the BAAQMD Thresholds of Significance because they are more restrictive in terms of total emissions allowed than the YSAQMD Thresholds of Significance.

The BAAQMD has a preliminary screening threshold for determining if a project has the potential to exceed BAAQMD's thresholds of significance for ROG, NOx, and PM10 during construction and operations. The proposed project would not exceed the BAAQMD's screening criteria (see Air Quality and Greenhouse Gas Assumptions Memorandum [Appendix A] for additional details), therefore it can be concluded that the project would not exceed any criteria pollutant emissions thresholds established by the BAAQMD..

Table 3.3-3: YSAQMD Significance Thresholds

Pollutants	YSAQMD Significance Thresholds
ROG	10 tons per year
NOx	10 tons per year
PM_{10}	80 pounds per day
CO	Violation of a State ambient air quality standard for CO
Source: YSAQMD 2007	

The EPA has included the YSAQMD as a $PM_{2.5}$ non-attainment area within the Sacramento Federal Non-Attainment area for $PM_{2.5}$, however, the YSAQMD has not established a threshold of significance for $PM_{2.5}$. The YSAQMD has been working in conjunction with the SMAQMD to reduce $PM_{2.5}$ within the region and revise the non-attainment status designation.

The YSAQMD has also established thresholds for development projects that have the potential to expose the public to TACs from stationary sources. If a project were to exceed the following thresholds, it would be considered to have a significant air quality impact. These thresholds are based on the YSAQMD's Risk Management Policy.

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more.

- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index equal to one for the MEI or greater.

While the YSAQMD's Risk Management Policy provides a basis for a threshold for TACs from stationary sources, this policy does not cover TACs from mobile sources. The YSAQMD has no permitting or other regulatory authority over mobile sources. While the YSAQMD continues to evaluate a threshold of significance for mobile source TAC, no specific mobile source TAC threshold is proposed at this time.

Additionally, the YSAQMD has established rules and regulations to attain and maintain State and federal air quality standards. The rules and regulations that apply to this proposed project include, but are not limited to, the following:

Rule 2.3 – Ringelmann Chart

301 Requirements:

301.1 A person shall not discharge into the atmosphere from any single source of emission listed under section 111 of this rule, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.1 a. of this rule.

301.2 Effective 6 months after the adoption of the revisions of this rule, a person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.2 a. of this rule.

Rule 2-5: Nuisance

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 2.11: Particulate Matter

301 Requirement: A person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

Rule 2.14: Architectural Coatings

The purpose of this rule is to limit the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD.

Rule 2.28: Cutback and Emulsified Asphalt

The purpose of this rule is to limit the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations.

Rule 2.40: Wood Burning Appliances

The purpose of this rule is to manage the emissions of PM, CO, and other air contaminants from wood burning appliances.

3.3.2 Methodology

Construction and operational emissions for the proposed project were modeled using the California Emissions Estimator Model (CalEEMod). The model inputs were based on information from the project design as described in Section 2.0, Project Description, CalEEMod default values, as well as the following assumptions (the model output and detailed assumptions are provided in Appendix A).

- The proposed project would develop 15 single-family detached dwelling units on 1.76 acres;
- Construction is anticipated to begin in April 2017 and would be completed by March 2018. The construction schedule utilized in the analysis represents a "worst-case" analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moves to later years. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines.
- CalEEMod defaults for trip generation and trip lengths for YSAQMD for a residential land use were used

Methodology and thresholds for criteria air pollutant impacts and community health risk, as set forth in the YSAQMD's Handbook were used in this analysis.

3.3.2 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

Solano County is designated nonattainment for state and federal health based air quality standards for ozone. Solano County is also designated nonattainment for the state PM_{10} standard and federal $PM_{2.5}$ standard. The County is designated as unclassified for the state $PM_{2.5}$ standard and federal PM_{10} standard. Therefore, as part of the SIP, the YSAQMD has collaborated with the SMAQMD to develop regional air quality plans for ozone and particulate matter. As stated by YSAQMD, attainment of the state and federal ozone standards in Solano County and the Sacramento region would depend primarily on control measures in the form of new rules and statewide controls for stationary source and mobile polluters (YSAQMD 2015b).

In order to assess the proposed project's potential to obstruct implementation of the YSAQMD air quality plans, localized criteria pollutant emissions were analyzed, as these are the pollutants with established ambient air quality standards. Potential localized impacts would include exceedances of state or federal standards for PM and ozone. Particulate matter emissions, primarily PM_{10}, are of concern during construction because of potential fugitive dust emissions during earth-disturbing activities. Ozone emissions are generated from increased hauling and the use of off-road heavy-duty diesel equipment used for site grading and paving during construction.

Air quality modeling was performed using project-specific details in order to determine whether the proposed project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. The proposed project's construction- and operations-related emissions are shown in Table 3.3-4. The results of the unmitigated emissions modeling were compared to the YSAQMD standards of significance in order to determine the associated level of impact.

Construction Emissions

During construction (grading), fugitive dust (PM_{10}) would be generated from site grading and other earth-moving activities. The majority of this fugitive dust will remain localized and will be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from this source. MM AIR-1 requires the application of Best Management Practices (BMPs) for fugitive dust control. Implementation of MM AIR-1 will ensure that no significant impacts from fugitive dust will occur during construction activities.

The proposed project would generate emissions from construction equipment exhaust, worker travel, and fugitive dust. These construction emissions include dust (PM_{10} and $PM_{2.5}$) as well as other criteria air pollutants from the operation of heavy construction equipment. Construction activities would take place over approximately 12 months. The greatest potential impacts

would occur during site preparation and grading activities when soil disturbance and hauling are at their maximum. In addition, exhaust emissions from project construction equipment, although below quantitative daily thresholds, can be reduced with the implementation of BMPs recommended by the YSAQMD. As such, the dust control measures described above and BMPs that reduce exhaust emissions from the construction equipment shall be incorporated as MM AIR-1 to further reduce potential impacts. Therefore, the project would have a less than significant impact.

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. It was assumed that all homes would be occupied in 20187 to provide a conservative estimate of operational emissions. If a later build out year were used the emissions would be lower due to cleaner vehicles from increasing regulations. Therefore, using an earlier year to consider full buildout of the project would provide a worst-case scenario of emissions.

The pollutants of concern include ROG, NOx, and PM_{10}. The project operational emissions for the respective pollutants were calculated using CalEEMod. The YSAQMD Criteria Air Pollutant Significance thresholds were used. The operational emissions were modeled for annual, summer and winter seasons. The results for annual and winter were the highest and are presented in Table 3.3-4. The unmitigated daily operational emissions would be less than significant.

The modeling performed for the proposed project included compliance with YSAQMD rules and regulations. Specifically, CalEEMod was adjusted to reflect compliance with YSAQMD's Rule 2.40 which requires that new wood-fired appliances meet United States Environmental Protection Agency standards. The CalEEMod run was based on catalytic wood stoves, which have the highest ROG emission rate among certified wood burning devices, as a worst-case scenario. The analysis assumed that 100 percent of the homes would have wood burning fireplaces equipped with catalytic control devices compliant with Rule 2.40; it is understood this is not the proposed intent of the Applicant, however, out of an abundance of caution, this approach was used.

The proposed project's estimated operational emissions are presented in Table 3.3-4. As shown in the table, the proposed project's operational emissions would not exceed the YSAQMD recommended thresholds of significance and impacts would be considered less than significant.

Level of Significance Before Mitigation

Potentially Significant.

Mitigation Measures

MM AIR-1: The following conditions would be included in the General Notes and/or Grading Plan for the proposed project, under the descriptive heading "Dust and Equipment Exhaust Control" and would be implemented during construction activities:

- Visible emissions from stationary diesel-powered equipment are not allowed to exceed 40 percent opacity for more than three minutes in any one-hour, as regulated under District Rule 2.3, Ringelmann Chart.

- All material excavated, stockpiled, or graded would be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.

- All areas with vehicle traffic would be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.

- All onsite and construction traffic would be limited to a speed of 15 miles per hour within the project site and surrounding neighborhood.

- All land clearing, grading, earth moving, or excavation activities on a project would be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 miles per hour.

- All inactive portions of the development site would be covered, revegetated, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved non-toxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.

- All material transported off-site would be securely covered to prevent public nuisance, and there must be a minimum of two feet of freeboard in the bed of the transport vehicle.

- Paved roads adjacent to the project would be swept at the end of each day or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud that may have resulted from activities at the project site.

- The Applicant would re-establish ground cover on the site through revegetation and watering in accordance with the local grading and landscape ordinances.

- A publicly visible sign would be posted with the telephone number and person to contact at the City regarding dust complaints. This person would respond and take corrective action within 48 hours of a complaint or issue notification. The YSAQMD's phone number would also be visible to ensure compliance with applicable regulations.

- All unnecessary vehicle idling would be restricted adjacent to the project site for a period of five minutes.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact AIR-2 Violate any air quality standard or contribute to an existing or projected air quality violation?

Impact Analysis

In order to assess the proposed project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation, criteria pollutant emissions were analyzed since these are the pollutants with established ambient air quality standards. Potential impacts would include exceedances of state or federal standards for ozone, PM, and CO. Ozone emissions are generally generated during construction activities through the operation of diesel powered construction equipment. Particulate matter emissions, primarily PM_{10}, are of concern during construction because of potential fugitive dust emissions during earth-disturbing activities. CO emissions are of concern during project operation because CO hotspots can be created due to increases in on-road vehicle congestion.

As recommended by the YSAQMD, CalEEMod was used to estimate emissions from the proposed project. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas emissions associated with project activities.

Air quality modeling was performed using project-specific details in order to determine whether the proposed project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. The proposed project's construction-related and operational emissions have been estimated using project-specific data, where available and CalEEMod default values. It should be noted that based on the rural nature of parts of the YSAQMD, the CalEEMod assumes that only 94% of the roads the residents would use are paved in the model, therefore, the PM10 emissions are significantly higher than if the project were modeled in the BAAQMD, which assumes 100% of the roads the residents would use are paved. In order to provide a conservative estimate, the default values for YSAQMD were used. Table 3.3-4 provides the estimated emissions during project construction and operations and compares them with the thresholds of significance. As shown in Table 3.3-4, the project's emissions would be less than the YSAQMD's thresholds of significance; therefore, impacts would be less than significant.

Table 3.3-4: CalEEMod Emissions Estimates

	ROG (tons per year)	NOx (tons per year)	PM_{10} (pounds per day)
Construction Emissions 2017	0.29	1.89	18.37
Construction Emissions 2018	0.17	0.27	13.82
Operational Emissions 2018	0.50	0.52	(9.79)
YSAQMD significance thresholds	10 tons per	10 tons per	80 pounds per

	ROG (tons per year)	NOx (tons per year)	PM_{10} (pounds per day)
	year	year	day
Potential for proposed project to exceed threshold	None	None	None

Note:
The project was modeled in CalEEMod using the YSAQMD location. Based on the rural nature of parts of the YSAQMD, the CalEEMod assumes that only 94% of the roads the residents would use are paved in the model, therefore, the PM10 emissions are significantly higher than if the project were modeled in the BAAQMD, which assumes 100% of the roads the residents would use are paved.

The PM10 estimate shown in parenthesis reflect what the CalEEMod estimate would be if 100% of the roads were assumed to be paved.

Vehicle Miles Traveled

The project site was previously contemplated to be developed as a commercial site with local-serving retail uses as part of the Southtown Project. The Vanden Meadown project is located to the south of the project site. The air quality analysis prepared for the Southtown Project utilized the air quality model URBEMIS, which was the most current model in place at the time the Environmental Impact Report (EIR) was released. Since then, the CalEEMod air quality software model has replaced URBEMIS as the recommended model by Air Districts in California, including YSAQMD. The Vanden Meadows air quality analysis was prepared in February 2012, when many Air Districts in California were transitioning from URBEMIS

The URBEMIS User Guide (URBEMIS 2007) states that the presence of local-serving retail can be expected to bring a two percent trip reduction benefit. This trip reduction would reduce the vehicle miles traveled (VMT) of the projects. However, neither the Southtown EIR nor the Vanden Meadows air quality analyses utilized the local-serving retail mitigation measure within the URBEMIS model to reduce vehicle trips and hence VMT and emissions from the project. The results presented in their respective EIRs do not claim any VMT or emission reductions for the local-serving project design feature. As such, removing local-serving retail from the Southtown area or near the Vanden Meadows area would not result in an increase in VMT or emissions beyond what was previously disclosed in the Southtown EIR.

Since the adoption of the EIRs for Southtown and Vanden Meadows, the City has adopted a new General Plan that includes a focus on reducing VMT by developing a mix of land uses, such that there would be local-serving retail to serve residences nearby and thus reduce VMT.

In order to provide a comparative estimate of the potential increase in VMT as a result of removing the local-serving commercial uses from the project site, a CalEEMod scenario was run for the total estimated dwelling units in the Southtown Project (1,597 dwelling units) with and without a diversity of uses included (note local-serving retail alone is not a mitigation measure within CalEEMod). Because the project is located within the Southtown area, only the Southtown

residences were evaluated. The unmitigated results show the VMT without local serving commercial (diversity of uses) and the mitigated results show VMT with commercial diversity of uses.

Table 3.3-5: Southtown Residential Vehicle Miles Traveled

Scenario	Annual VMT
Unmitigated (no diversity of uses)	40,844,228
Mitigated (with commercial diversity of uses)	38,802,016
Difference	2,042,212
Percent Increase in VMT by removing retail	5.3 percent

The percent increase in VMT was developed utilizing the same emissions model for the both the Southtown Project EIR, and the proposed project, resulting in an approximately five percent increase from the CalEEMod scenarios. However, the actual VMT increase is estimated at two percent (see Section 3.16 Transportation and Traffic and Transportation and Traffic Memorandum for additional VMT discussion). The baseline (i.e. existing condition) does not include a commercial use; therefore, the potential for a five percent emission increase is already being experienced. The implementation of the proposed project with the land use change would reduce the City's ability to reduce future emissions in the cumulative context. However, the 5.3 percent increase in VMT would not alter the conclusions of the Southtown Project EIR, or result in a new impact exceeding an air quality standard because the original Southtown Project did not utilize local-serving retail as a mechanism for achieving vehicle trip reductions and thus VMT and emission reductions. The emissions estimates presented in the Southtown Project EIR would not be increased through the removal of the commercial use of the site.

In order to estimate whether the change in land use would result in a change in the emissions estimates, CalEEMod scenarios were run evaluating the emissions from a local-serving retail land use (based on the allowed development density) for the Ashton Place Unit 3 parcel and the other remaining 2.0 acre parcel designated as commercial use (based on Floor Area Ratio of 0.3) and 32 homes (full residential development potential for Ashton 3 and the other 2.0 acre parcel at 8.3 dwelling units per acre) shown above in Table 3.3-4. As shown in Table 3.3-6, the emissions and VMT would be greater for a commercial land use versus the 32 homes (refer to the AQ/GHG assumptions memorandum for additional details).

Table 3.3-6: VMT and Emissions Comparisons between Residential and Commercial Use

Scenario	ROG (tons per year)	NOx (tons per year)	PM_{10} (pounds per day)	Annual VMT
Commercial Use (43,516 sf)	1.27	2.51	370.64 (6.53)	2,719,608
Residential Homes (32 du)	0.96	1.04	141.63	1,118,317

Scenario	ROG (tons per year)	NOx (tons per year)	PM_{10} (pounds per day)	Annual VMT
			(4.54)	
Increase or Decrease as a Result of the Proposed Project	Decrease	Decrease	Decrease	Decrease

Notes:

sf = square feet

du = residential dwelling units

The project was modeled in CalEEMod using the YSAQMD location. Based on the rural nature of parts of the YSAQMD, the CalEEMod assumes that only 94% of the roads the residents would use are paved in the model, therefore, the PM10 emissions are significantly higher than if the project were modeled in the BAAQMD, which assumes 100% of the roads the residents would use are paved.

The PM10 estimate shown in parenthesis reflect what the CalEEMod estimate would be if 100% of the roads were assumed to be paved.

Conclusion

Although the project would not exceed any quantitative threshold during construction, the YSAQMD recommends that all projects incorporate fugitive dust and emissions control measures to ensure impacts remain less than significant. Accordingly, the project has incorporated MM AIR-1 to reduce construction impacts to a less than significant level. MM AIR-1 would be consistent with MM AQ-1 from the Southtown EIR. The project would also implement other measures included in MM AQ-1 from the Southtown EIR for reducing impacts from construction exhaust equipment through cleaner than average construction equipment.

The project would not exceed any quantitative thresholds during operation; therefore, impacts would be less than significant. The project would comply with MM AQ-2 from the Southtown requiring reflective roofing, energy efficiency, and exterior outlets and prohibiting conventional open-hearth fireplaces.

As discussed above, the project would not increase the severity of the impacts previously disclosed in the Southtown EIR.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure MM AIR-1 is required. Compliance MM AQ-1 and MM AQ-2 from the Southtown EIR is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

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

Impact Analysis

A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants, including ozone and PM, is a result of past and present development, and, thus, cumulative impacts related to these pollutants could be considered cumulatively significant. Future attainment of standards is a function of successful implementation of YSAQMD attainment plans. Consequently, the YSAQMD's approach to cumulative thresholds of significance is relevant to whether a project's individual emissions would result in a cumulatively considerable contribution to the regional existing cumulative impacts related to air quality conditions.

The proposed project site was included within the Southtown area, thus the buildout emissions of the Southtown area as disclosed in the Southtown EIR would encompass the cumulative analysis. The Southtown EIR identified significant and unavoidable impacts to air quality during construction and operation of the development.

According to the YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts, the YSAQMD has developed control measures for stationary, area, and transportation sources of air pollution. Emissions above individual thresholds as defined in the Handbook would have a significant cumulative impact on regional air quality unless offset. As discussed above, emissions from the proposed project would not exceed the YSAQMD recommended thresholds. In addition, the proposed project would be required to comply with all applicable YSAQMD rules and regulations. Therefore, the proposed project's individual emissions would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact, and impacts would be considered less than significant with mitigation incorporated. Furthermore, the proposed project would not increase the severity of the impacts previously accounted for in the Southtown EIR, thus the project's individual impact is not cumulatively considerable and would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-4 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the proposed project would expose sensitive receptors to Naturally Occurring Asbestos (NOA), construction-generated fugitive dust (PM_{10}), construction generated diesel particulate matter (DPM), operational related TACs, or operational CO hotspots. A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds and childcare centers

The project is considered a sensitive receptor because it is a residential development and other existing nearby residences (approximately 20 feet north of the proposed project) would also be considered sensitive receptors.

Construction Emissions

Naturally-Occurring Asbestos

The California Department of Conservation (CDC) maps NOA areas throughout the State of California. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The risk of disease is dependent upon the intensity and duration of exposure. In California, NOA is most likely to occur in areas of serpentinite, ultramafic rock (igneous rock composed of greater than 90 percent iron-magnesium minerals), and fault/shear zones. Rock units considered to have a moderate likelihood of containing NOA include mafic rock (igneous rock rich in iron-magnesium minerals). Serpentinite, ultramafic, and mafic rock is not mapped within the project area. The closest known occurrence of ultramafic rock outcroppings is in Napa County, approximately 20 miles northwest of the proposed project (USGS 2011). Therefore, there is no potential health hazards resulting from NOA dust. There would be no impact.

Diesel Particulate Matter (DPM)

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. In addition, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, state, and local regulations, including YSAQMD rules and regulations, and occurring intermittently throughout the course of a day, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. There would be a less than significant impact.

Operational Emissions

TAC Emissions

The CARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (CARB 2005b), including recommendations for distances between sensitive receptors and certain land uses. These recommendations are assessed as follows.

- **Heavily traveled roads.** CARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The project is not located near any high traffic volume roadways. Vanden Road which is adjacent to the project site has an estimated 4,700 vehicles per day.

- **Distribution centers.** CARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The closest existing distribution center to the project is located more than 5.8 miles north of the project site.

- **Fueling stations**. CARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). CARB recommends a 50 foot separation for typical gas dispensing facilities. The nearest gas station is approximately 0.72 miles from the project site.

- **Dry cleaning operations.** CARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, CARB recommends a buffer of 500 feet. For operations with three or more machines, CARB recommends consultation with the local air district. The nearest dry cleaning operation is approximately 1.47 miles from the project site.

Because the project is located beyond the recommended distances from the above land uses, impacts would be less than significant.

CO Hotspots

The YSAQMD recommends using a screening approach, originally developed by San Joaquin Valley Unified Air Quality Management District (SJVAQMD), to estimate whether or not a project's traffic impact would cause a potential CO hotspot at any given intersection. If either of the following criteria is true of any intersection affected by the project traffic, then the project can be said to have the potential to create a violation of the CO standard.

- A traffic study for the project indicates that the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity would be reduced to an unacceptable LOS (typically LOS E or F); or
- A traffic study indicates that the project would substantially worsen an already existing peak-hour LOS F on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes situations where delay would increase by 10 seconds or more when project-generated traffic is included.

According to the Transportation Study prepared for the proposed project by Stantec, the proposed project would not generate traffic that would result in deterioration of an intersection from acceptable Level of Service (LOS) (LOS A through D) to LOS E or F under existing plus project conditions. Therefore, in accordance with YSAQMD's screening criteria, the proposed project would not be expected to result in the generation of localized CO emissions in excess of the applicable threshold of significance.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-5 Create objectionable odors affecting a substantial number of people?

Impact Analysis

According to the YSAQMD's CEQA guidance, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The YSAQMD has determined the common land use types that are known to produce odors in the Air Basin. These types and screening distances are shown in Table 3.3-7.

Table 3.3-7: Screening Levels for Potential Odor Sources

Odor Generator	Distance
Wastewater Treatment Facilities	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	1 mile
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Source: YSAQMD 2007	

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.4 BIOLOGICAL RESOURCES

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

3.4.1 Environmental Setting

The 1.76 acre project site is an undeveloped lot located within the Southtown Project Area, off Vanden Road and Cogburn Circle in Vacaville, Solano County, California. The proposed project is located in the Southtown Project Area in southeast Vacaville. The project site is located in a suburban residential community on the northwest corner of the intersection of Vanden Road and Cogburn Circle. There are no existing structures on the project site. The project site is a relatively flat undeveloped lot, with a gentle upslope gradient trending toward the eastern portion of the project site. Most of the project site consists of non-native vegetation, grasses, and low-lying plants. In addition, ornamental trees and low-lying plants have been planted along the southern edge of the project site. There is a six foot decorative masonry wall constructed along the north, east, and west boundaries of the project site.

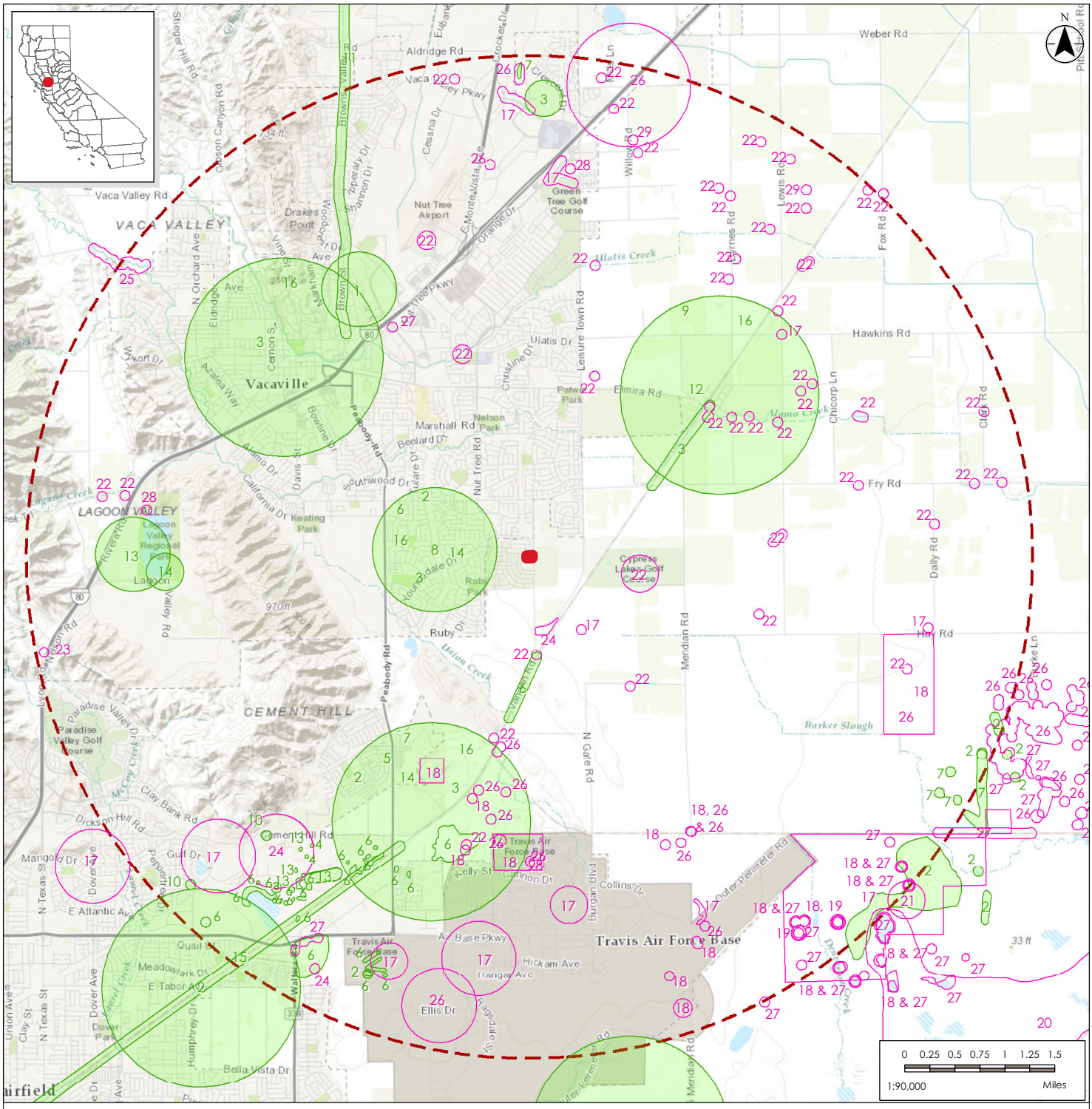
3.4.2 Methodology

Prior to field surveys, Stantec conducted background research for existing biological resources within the project site and the project area. Background research was focused on reviewing federally listed species as defined by the U.S. Fish and Wildlife Service (USFWS), California State listed species and State sensitive species as defined by California Department of Fish and Wildlife (CDFW), as well as those that have a degree of concern as defined by the California Native Plant Society (CNPS) California Rare Plant Ranking (CRPR). Environmental setting baseline data on sensitive species known to occur in the project vicinity from the California Natural Diversity Database (CNDDB) is included in Figure 3.4-1.

Specifically, the resources reviewed include:

- CNDDB records for occurrences of special-status species within five miles of the project site (CNDDB 2016).
- Federally threatened or endangered species list from the USFWS Information for Planning and Conservation (IPaC) website (USFWS 2016a).
- CNPS Inventory of Rare and Endangered Plants of California (CNPS 2016).
- National Wetlands Inventory (USFWS 2016b).
- Aerial photographs and topographic maps of the study area.
- Biological assessment from the Environmental Impact Report: Southtown Project prepared for the City of Vacaville (Southtown Project EIR 2003).

CDFW and the CNPS have developed a standard classification system for floristically describing vegetation communities/habitats Statewide, further translating to the National Vegetation Classification. The CDFW and CNPS system has been compiled in *A Manual for California Vegetation, 2nd Edition* (Sawyer et al. 2009), and has been accepted and adopted by State and federal agencies. The Manual of California Vegetation (MCV) classifications assist in



Legend

- Project Area
- 5 Mile Buffer

CNDDB OCCURRENCES*

Plant Species

1. Adobe-lily
2. Alkali milk-vetch
3. Baker's navarretia
4. Brittlescale
5. Carquinez goldenbush
6. Contra Costa goldfields
7. Dwarf downingia
8. Heartscale
9. Legenere
10. Pappose tarplant
11. Recurved larkspur
12. Round-leaved filaree
13. Saline clover
14. San Joaquin spearscale
15. Suisun Marsh aster
16. Two-fork clover

Wildlife Species

17. Burrowing owl
18. California tiger salamander
19. Conservancy fairy shrimp
20. Delta green ground beetle
21. Northern Claypan Vernal Pool
22. Swainson's hawk
23. Townsend's big-eared bat
24. Tricolored blackbird
25. Valley elderberry longhorn beetle
26. Vernal pool fairy shrimp
27. Vernal pool tadpole shrimp
28. Western pond turtle
29. White-tailed kite

*California Natural Diversity Database (CNDDB) Data: Downloaded September, 2016, from the California Department of Fish and Wildlife

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.4-1. Known Occurrences of Special Status Species

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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defining vegetation based on quantitative based rules to distinguish between vegetation community types, local variation, ecological land classification /composition, species rarity and significance, and historical and current land management practices. The MCV defines vegetation communities by dominant and/or co-dominant species present as: 1A) alliance–a broad unit of vegetation with discernable and related characteristics; 1B) provisional alliance–a temporary vegetation community and/or candidate alliance; and/or 2) association–a basic secondary unit of classification, not as broad as an alliance, with uniform composition and conditions. The MCV classifications replace lists of vegetation types developed for the CNDDB. The biological community in the project site has been classified using MCV standards (Sawyer et al. 2009) and is detailed below.

Reconnaissance-Level Biological Resources Survey

A reconnaissance-level survey of the 1.76 acre project site was conducted from 8:00 a.m. to 10:00 a.m. on September 2, 2016. The Southtown Project EIR biological assessment (Southtown Project EIR 2003) was also utilized as a reference, and results of the reconnaissance-level survey were compared with EIR biological analysis for consistencies. The primary objective of the reconnaissance-level survey was to document and confirm existing conditions and determine the potential presence of sensitive biological resources. The object of the survey was not to extensively search for every species occurring within the project site, but to ascertain general project site conditions and identify potentially suitable habitat areas for various sensitive plant and wildlife species, as well as potential wetlands. During this site visit, the Stantec biologist walked transects within the project site to assure full coverage of the project site.

Field notes and photos taken during that evaluation are included in Appendix B. The impact analysis below is based on the background research completed prior to field surveys and the results of the reconnaissance-level survey. No federal- or State-listed species, special-status species, sensitive habitats, or nesting raptors or migratory birds were observed during the site visit conducted on September 2, 2016.

The project site contains non-native annual grassland habitat, as described below. In addition, based on a review of available information (including the CNDDB and USFWS species lists) and the results of the field surveys, the following special-status species are discussed below given their potential to occur within and/or adjacent to the project site: Swainson's hawk (*Buteo swainsoni*, white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). A discussion for each of these species is presented below.

<u>Non-Native Annual Grassland Herbaceous Alliance</u>

The project site is characterized by non-native annual grasses and other ruderal species. The project site has been subject to historic and modern disturbances including earthmoving to create landscaped berms, agricultural disking, and refuse dumping. At the time of the reconnaissance survey (September 2, 2016), the project site had been recently mowed and spread with straw. Common plants noted at the site include yellow starthistle (*Centaurea solstitialis*), purple starthistle (*Centaurea calcitrapa*), prickly lettuce (*Lactuca serriola*), shortpod

mustard (*Hirschfeldia incana*), and bindweed (*Convulvulus arvensis*). Stunted *Populus* saplings were scattered throughout the site. The southern border of the site features a sidewalk and has been landscaped with crepe myrtle (*Lagerstroemia* sp.), day lilies (*Hemerocallis* sp.), and other ornamental plants.

Common wildlife species that utilize non-native annual grasslands include birds protected under the Migratory Bird Treaty Act (MBTA) such as house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), American crow (*Corvus brachyrhynchos*), and red-tailed hawk (*Buteo jamaicensis*); and birds not protected under the MBTA such as house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*). Killdeer (*Charadrius vociferus*) were heard calling during the reconnaissance survey conducted on September 2, 2016. However, no individuals were seen within the project site. Other animals potentially occurring in this habitat include western fence lizard (*Sceloporus occidentalis*), Mexican free-tailed bat (*Tadarida brasiliensis*), pocket gopher (*Thomomys bottae),* California vole (*Microtus californicus*), California deer mouse (*Peromyscus maniculatus*), and black-tailed jackrabbit (*Lepus californicus*). A number of small (one- to two- inch) burrows were observed in mounded soils along the masonry walls of the project site during the reconnaissance survey. These appeared to be burrows of small mammals such as voles or mice; the burrows were too small to be attributed to California ground squirrel, and would not represent potential nesting habitat for burrowing owl.

Special-Status Plants

A comprehensive list of special-status plant species considered for this analysis was developed based on previous biological information for the Southtown Project development (Southtown Project EIR 2003) and on queries of IPaC (USFWS 2016a); CNPS Inventory of Rare and Endangered Plants of California (CNPS 2016); and CNDDB (CNDDB 2016). The comprehensive list of plants is provided in Table 3.4-1. Several species listed in Table 3.4-1 may occur in grassland habitat and therefore could theoretically occur at the project site. However, due to ongoing disturbance and the degraded nature of the project site as observed on September 2, 2016, no special-status plant species would be expected to occur.

Table 3.4-1: Comprehensive List of Special-Status Plant Species Potentially Occurring in the Vicinity of the Proposed Project

Scientific Name Common Name	Status	Habitat Characteristics	Flowering Period	Recorded Occurrence within Five Miles?	Likelihood for Occurrence
Astragalus tener var *tener* Alkali milkvetch	CRPR 1B	Valley grassland, vernal pools, and playas	Mar-Jun	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Atriplex cordulata var. *cordulata* Heartscale	CRPR 1B	Valley and foothill grasslands, meadows and seeps	Apr-Oct	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Atriplex depressa Brittlescale	CRPR 1B	Valley and foothill grasslands, vernal pools	Apr-Oct	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Atriplex joaquinana San Joaquin saltbrush	CRPR 1B	Alkaline grassland and scrub	April–Sept	No	No potential for occurrence. Project site does not support alkaline grassland or scrub habitat.
California macrophylla Round-leaved filaree	CRPR 1B	Valley and foothill grasslands, woodlands	Mar-May	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.

Scientific Name Common Name	Status	Habitat Characteristics	Flowering Period	Recorded Occurrence within Five Miles?	Likelihood for Occurrence
Centromadia parryi ssp *parryi* Pappose tarplant	CRPR 1B	Valley and foothill grasslands, marshes and swamps, meadows and seeps	May-Nov	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Cordylanthus mollis Soft bird's-beak	FE/SR/1B	Coastal salt marsh	Jul–Nov	No	No potential for occurrence. Project site does not support coastal salt marsh habitat.
Delphinium recurvatum Recurved larkspur	CRPR 1B	Woodlands and valley and foothill grasslands	Mar-Jun	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Downingia pusilla Dwarf downingia	CRPR 2	Vernal pools	Mar–May	Yes	No potential for occurrence. Project site does not support vernal pools.
Extriplex joaquinana San Joaquin spearscale	CRPR 1B	Valley and foothill grasslands, meadows and seeps	Apr-Oct	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Fritillaria pluriflora Adobe-lily	CRPR 1B	Chaparral, woodland, grassland on adobe soil	Feb–Apr	Yes	No potential for occurrence. Project site does not support appropriate soils.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Isocoma argute Carquinez goldenbush	CRPR 1B	Valley and foothill grasslands	Aug-Dec	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Juglans hindsii California black walnut	CRPR 1B	Riparian forests and woodlands	Apr-May	Yes	No potential for occurrence. Project site does not support riparian habitat. No walnut trees observed on project site during reconnaissance surveys.
Lasthenia conjugens Contra Costa goldfield	FE/CRPR 1B	Low flats and borders of vernal pools. USFWS has established Critical Habitat for this species.	Apr–May	Yes	No potential for occurrence. Project site does not support vernal pools. There is no Critical Habitat for this species in the project site.
Lathyrus jepsonii Delta tule pea	CRPR 1B	Brackish water marshes and swamps	May–Jun	No	No potential for occurrence. Project site does not support brackish marshes or swamp habitat.
Legenere limosa Legenere	CRPR 1B	Vernal pools	May–Jun	Yes	No potential for occurrence. Project site does not support vernal pools.

Scientific Name Common Name	Status	Habitat Characteristics	Flowering Period	Recorded Occurrence within Five Miles?	Likelihood for Occurrence
Lilaeopsis masonii Mason's lilaeopsis	SR/CRPR 1B	Brackish water marshes and swamps	Jun-Aug	No	No potential for occurrence. Project site does not support brackish marshes or swamp habitat.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	CRPR 1B	Woodlands, valley and foothill grasslands, vernal pools	Apr-Jul	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Orcuttia inaequalis San Joaquin Orcutt grass	FT/SE CRPR 1B	Valley grassland, vernal pools	Apr–Sep	No	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Symphyotrichum lentum Suisun marsh aster	CRPR 1B	Brackish water marshes and swamps	May–Oct	Yes	No potential for occurrence. Project site does not support marshes or swamp habitat.
Trifolium amoenum Showy Indian clover	FE/CRPR 1B	Valley grassland	Apr–Jun	No	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Trifolium amoenum Two-fork clover	FE, CRPR 1B	Valley and foothill grasslands	Apr-Jun	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Trifolium hydrophilum Saline clover	CRPR 1B	Valley and foothill grasslands, vernal pools	Apr-Jun	Yes	No potential for occurrence. Grassland habitat within project site is highly disturbed and unlikely to support sensitive species.
Source: (Southtown Project DEIR 2003), (USFWS 2016a), and CNDDB 2016).					

Special-Status Wildlife

A comprehensive list of special-status wildlife species considered for this analysis was developed based on previous biological information for the Southtown Project development (City of Vacaville 2003), and on queries of IPaC (USFWS 2016a) and CNDDB (CNDDB 2016). The comprehensive list of wildlife is provided in Table 3.4-2. All but four of the species identified in Table 3.4-2 have been eliminated from consideration because the project site does not support appropriate habitat. Provided below is a brief discussion of the remaining species, including three birds and one bat species.

Swainson's hawk (*Buteo swainsoni*) is protected under the MBTA and is listed as State threatened. Swainson's hawks migrate annually from winter areas in South America to breeding locations in northwestern Canada, the western United States, and Mexico. In the Central Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields mainly for small rodents. Nest sites are found in trees in riparian corridors or adjacent to agricultural fields. Breeding season occurs from approximately late March through late August, with peak activities occurring from late May through July. Threats to the Swainson's hawk include loss of habitat primarily from development and pesticide poisoning (Zeiner et al 1988).

Table 3.4-2: Comprehensive List of Special-Status Wildlife Species Potentially Occurring in the Vicinity of the Proposed Project

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE	Vernal pools, swales, and depressions in grassland. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support vernal pools. There is no Critical Habitat for this species in the project site.
Branchinecta lynchi Vernal pool fairy shrimp	FT	Vernal pools, swales, and depressions in grassland. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support vernal pools. There is no Critical Habitat for this species in the project site.
Lepidurus packardi Vernal pool tadpole shrimp	FE	Vernal pools with prolonged inundation. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support vernal pools.
Elaphrus viridis Delta green ground beetle	FT	Shoreline of vernal pools in grassland. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support vernal pools. There is no Critical Habitat for this species in the project site.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	Elderberry shrubs within the Central Valley, below 3,000 feet in elevation. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support elderberry shrubs. There is no Critical Habitat for this species in the project site.
Fish				
Hypomesus	FT/SE	Brackish zone of Delta;	No	No potential for

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
transpacificus Delta smelt		adjacent freshwater zones for spawning. USFWS has established Critical Habitat for this species.		occurrence. There is no aquatic habitat within or adjacent to Project site. There is no Critical Habitat for this species in the project site.
Pogonichthys macrolepidotus Sacramento splittail	CSC	Sloughs and other slow-moving waters of Delta	No	No potential for occurrence. There is no aquatic habitat within or adjacent to Project site.
Oncorhynchus (=Salmo) mykiss Steelhead	FT	Open water of Bay and Delta, tributary rivers and streams.	No	No potential for occurrence. There is no aquatic habitat within or adjacent to Project site.
Amphibians				
Ambystoma californiense California tiger salamander	FT/ST	Vernal pools, ponds, streams and adjacent grassland. USFWS has established Critical Habitat for this species.	Yes	No potential for occurrence. Project site does not support vernal pools or other aquatic breeding habitat. In addition, project site is not within dispersal distance of any aquatic breeding habitat for CTS. Therefore, grassland habitat in the project site would not be considered upland/dispersal habitat for CTS. There is no Critical Habitat for this species in the project site.
Rana draytonii California red-legged frog	FT/CSC	Ponds, streams, adjacent riparian and upland.	No	No potential for occurrence. Project site does not

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
		USFWS has established Critical Habitat for this species.		support aquatic breeding habitat for CRLF. In addition, project site is not within dispersal distance of aquatic breeding habitat for CRLF. Therefore, grassland habitat in the project site would not be considered upland/dispersal habitat for CRLF. There is no Critical Habitat for this species in the project site.
Rana boylii Foothill yellow-legged frog	CSC	Permanent streams with cobbles	No	No potential for occurrence. There is no aquatic habitat within or adjacent to Project site.
Reptiles				
Thamnophis gigas Giant garter snake	FT/ST	Freshwater marsh, drainages, riparian and adjacent grassland	No	No potential for occurrence. There is no aquatic habitat within or adjacent to Project site.
Emys marmorata Western pond turtle	CSC	Pond, rivers, and streams and adjacent grassland	Yes	No potential for occurrence. There is no aquatic habitat within or adjacent to Project site.
Birds				
Athene cunicularia Western burrowing owl	CSC	Grassland and agricultural fields with large burrows for nesting.	Yes	No potential for occurrence. No appropriate burrows for nesting observed during reconnaissance surveys conducted in September 2016.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**CNDDB Occurrence within Five Miles?**	**Likelihood for Occurrence**
Laterallus jamaicensis ssp coturniculus California black rail	ST/CFP	Salt or freshwater marsh	No	No potential for occurrence. Project site does not salt or freshwater marsh habitat.
Rallus longirostris obsoletus California clapper rail	FE/SE/CFP	Salt marsh	No	No potential for occurrence. Project site does not support salt marsh habitat.
Aquila chrysaetos Golden eagle	CFP	Open grassland, savanna, and agricultural fields with cliffs or large trees for nesting.	No	No potential for occurrence. Project site does not provide appropriate foraging or nesting habitat for this species.
Lanius ludovicianus Loggerhead shrike	CSC	Grassland and agricultural fields with shrubs or trees for nesting.	No	Low potential for occurrence. Project site provides marginal foraging and nesting habitat for this species. .
Circus cyaneus Northern harrier	CSC	Grassland and agricultural fields with tall, dense, undisturbed vegetation for nesting.	No	No potential for occurrence. Project site does not provide appropriate foraging or nesting habitat for this species.
Falco peregrinus Peregrine falcon	CFP	Woodland, forest, and coastal habitats with high cliffs, banks, or human-made structures for nesting.	No	No potential for occurrence. Project site does not provide appropriate foraging or nesting habitat for this species. This species is generally only present in the Central Valley during winter (non-breeding).
Geothlypis trichas sinuosa Salt marsh yellowthroat	CSC	Woody, swamps or brackish/salt water marshes.	No	No potential for occurrence. Project site does not

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
				support marsh habitat.
Melospiza melodia ssp. maxillaris Suisun song sparrow	CSC	Salt and brackish water marsh	No	No potential for occurrence. Project site does not support marsh habitat.
Buteo swainsoni Swainson's hawk	ST	Grassland and agricultural fields with large trees for nesting.	Yes	Low potential for occurrence. Large trees within 0.5 mile of the project site may provide nesting habitat for Swainson's hawk. This species may forage in close vicinity of the project site.
Agelaius tricolor Tricolored blackbird	CSC	Freshwater marshes and fields with dense thickets for nesting. This is a colonial species.	Yes	No potential for occurrence. Project does not provide appropriate habitat for this colonial-nesting species.
Elanus leucurus White-tailed kite	CFP	Grassland and agricultural fields with trees for nesting.	Yes	Low potential for occurrence. Project site provides marginal foraging and nesting habitat for this species. .
Mammals				
Sorex ornatus sinuosus Suisun shrew	CSC	Salt marsh	No	No potential for occurrence. Project site does not support salt marsh habitat.
Corynorhuinus townsendii Townsend's big-eared bat	SCT/CSC	Forages over grasslands/riparian and roosts in caves, buildings	Yes	Low potential for occurrence. Project site provides marginal foraging habitat for this species. .
Salt march harvest mouse	FE/SE	Salt marsh and adjacent grassland	No	No potential for occurrence. Project site does not

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
				support salt marsh habitat.
Source: (Southtown Project DEIR 2003), (USFWS 2016a), and CNDDB 2016).				

There are multiple known occurrences of this species nesting within five miles of the project site (Figure 3.4-1). The project site provides only marginal foraging habitat for Swainson's hawk, and no Swainson's hawks were observed in the project site during field survey conducted on September 2, 2016. There is no suitable nesting habitat for Swainson's hawk within the project site, however, large trees within approximately 0.5 mile of the project site could provide suitable nesting locations for this species.

White-tailed kite (*Elanus leucurus*) is a California fully protected species and is also protected under the MBTA. White-tailed kites nest in trees adjacent to grasslands, oak woodland, and on edges of riparian habitats (CDFW 1990). They are year-round residents in California often observed in agricultural areas, herbaceous, and open cismontane habitats (Zeiner et al 1988).

There are known occurrences of this species nesting within five miles of the project site (Figure 3.4-1). The project site provides only marginal foraging habitat for white-tailed kite, and no white-tailed kites were observed in the project site during the field survey conducted on September 2, 2016. However, large trees in the vicinity of the project site provide suitable nesting locations for this species.

Loggerhead shrike (*Lanius ludovicianus*) is a California species of special concern that is resident throughout most of California in grasslands and foothills. This species prefers open habitats with shrubs, trees, utility lines, or other structures for perching. Loggerhead shrikes nest in shrubs and trees where the nests can be well-concealed by foliage (Zeiner et al 1988).

There are no recorded occurrences of this species within five miles of the project site. However, habitat requirements for this species are relatively general. Therefore, while habitat within the project site would be considered marginal, this species could potentially nest in trees immediately surrounding the project site and forage within the project site.

Townsend's big-eared bat (*Corynorhinus townsendii*) is a candidate for listing and a California species of special concern. This species utilizes a wide variety of habitats and is typically found in association with water. Caves, mines, tunnels, buildings, or other human-made structures are required for night, day, hibernation, and maternity roosts. Maternity roosts are generally small, with 100 individuals or fewer. Night, day, and hibernation roosts are also generally small. Townsend's big-eared bats are not migratory, although they make short seasonal movements. The active season is May to September (Zeiner et al 1988).

There are known occurrences of this species within five miles of the project site (Figure 3.4.1). The project site does not have caves, mines, or man-made structures that provide roosting habitat

for this species. However, Townsend's big-eared bats could potentially forage in open areas over the project site.

3.4.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact BIO-1 Have a substantial adverse effect, either directly or through habitat modifications on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact Analysis

Special-Status Plant Species

Non-native annual grasslands are dominant throughout the extent of the project site. Given the disturbed and ruderal nature of the project site, no special-status plant species would be expected to occur within the project site.

Special-Status Wildlife Species

During the reconnaissance-level biological field survey of the project site on September 2, 2016, no special-status wildlife species were identified onsite. However, the project site represents marginal habitat for various birds protected under the MBTA, including loggerhead shrike. In addition, large trees in the vicinity of the project site represent potential nesting habitat for special-status raptors including Swainson's hawk and white-tailed kite. Construction impacts (such as loss of trees or interruption of breeding) to nesting birds protected under State or federal law is considered a potentially significant impact. Standard nesting bird pre-construction mitigation is proposed (Mitigation Measure BIO-1) to reduce potentially significant impacts to a level of less than significant. This mitigation would only apply to ground disturbing and vegetation removal activities that occur between February 15 and August 31. Ground disturbance and vegetation removal that occurs outside of this window would not require additional measures. With the implementation of Mitigation Measure BIO-1 any potential impacts to special-status birds would be less than significant.

In addition, there are known occurrences of Townsend's big eared bats in the project vicinity, and open areas over the project site represent marginal foraging habitat for bat species, including Townsend's big-eared bat. Therefore, construction activities could potentially disturb foraging Townsend's big-eared bats during their active season, May to September. In order to minimize the potential for impacts to foraging bats, standard construction measures which limit construction activities to daylight hours (between 8 a.m. and 6 p.m.) are proposed (Mitigation Measure NOI-1). Since bats forage at dawn and dusk, limiting construction activities to daylight hours would avoid disruption of foraging bats. With the implementation of Mitigation Measure NOI-1 any potential impacts to special-status bats would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM BIO-1: Avoid Disturbance of Nesting Special-Status and Non-Special-Status Raptors and other Migratory Birds, including Swainson's Hawk, White-tailed Kite, and Loggerhead Shrike.

Depending on the specific construction timeframe, to avoid disturbing nesting raptors and other migratory birds, the following measures shall be implemented:

a. If construction activities are scheduled to occur during the nesting season (approximately February 15 through August 31), a qualified wildlife biologist shall be retained to conduct a pre-construction nesting survey within the appropriate habitat.

    - Surveys shall be conducted within the project site and all potential nesting habitat within 500 feet of this area (this distance covers recommended Swainson's hawk and western burrowing owl buffers);

    - The surveys shall be conducted within one week before initiation of construction activities at any time between February 15 and August 31. If no active nests are detected, then no additional mitigation is required; or

    - If surveys indicate that migratory bird nests are found in any areas that would be directly or indirectly affected by construction activities, a no-disturbance buffer shall be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (typically late June to mid-July). The extent of these buffers shall be determined by a qualified biologist and shall depend on the special-status species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors shall be analyzed to make an appropriate decision on buffer distances.

b. If construction activities begin outside the breeding season (approximately September 1 through February 14) then construction may proceed until it is determined that an active migratory bird or raptor nest would be subject to abandonment as a result of construction activities. Optimally, all necessary vegetation removal shall be conducted before the breeding season so that nesting birds would not be present in the construction area during construction activities. If any bird nests are in the project site under pre-existing construction conditions, then it is assumed that they are habituated (or would habituate) to the construction activities. Under this scenario, the pre-construction survey described previously shall still be conducted on or after February 15 to identify any active nests in the vicinity. Active sites shall be monitored by a qualified biologist periodically until after the breeding season or after the young have fledged (typically

late June to mid-July). If active nests are identified on or immediately adjacent to the project site, then all non-essential construction activities (e.g., equipment storage and meetings) shall be avoided in the immediate vicinity of the nest site, but the remainder of construction activities may proceed.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish or U.S. Fish and Wildlife Service?

Impact Analysis

The project site is not located within any riparian habitat or other sensitive natural community identified within a local or regional plan, policy, and regulation, or by CDFW and USFWS. Therefore, the proposed project would have no impact to sensitive habitats.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact BIO-3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact Analysis

The project site does not contain any federally protected wetlands and would not be subject to regulations covered under Section 404 of the Clean Water Act; therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact Analysis

Wildlife movement corridors are important habitats that allow wildlife to travel, migrate, or disperse between significant habitats (Harris and Gallagher 1989). Wildlife movement corridors have been recognized by federal agencies such as the USFWS and the State of California as important habitats worthy of conservation. In general, movement corridors are comprised of areas of undisturbed land cover that connects larger, contiguous habitats.

The project site is approximately 1.76 acres, highly disturbed, and bordered by masonry walls on three sides, and Cogburn Circle a local roadway, on the fourth side. The project site represents low quality wildlife habitat and is surrounded by residential development to the north and west, and Magnolia Park to the south. Magnolia Park is a public park and human activity precludes the possibility of wildlife movement across the park. The Agricultural fields to the east provide some wildlife habitat value; however, development of the project site would not affect wildlife movement to or within nearby agricultural field. Considering the fact that the project site is not in itself an important habitat and does not provide connectivity to other important habitats worthy of conservation, the proposed project would not interfere with the movement of any wildlife species.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact Analysis

The proposed project does not conflict with any local policy or ordinance protecting biological resources, including any policy or ordinance related to tree preservation. Several small crepe

myrtle trees are growing within the landscaping on the southern border of the project site. These trees do not meet the City's criteria for Landmark and/or Heritage tree status; nor are they included on the City's Indigenous Tree List. No Impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact BIO-6 Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?

Impact Analysis

The City falls within the jurisdiction of the Solano Multispecies Habitat Conservation Plan (HCP). The Solano HCP encompasses the Cities of Vacaville, Fairfield, Suisun City, Vallejo, Dixon, and Rio Vista. The Solano County Water Agency (SCWA) assumes overall responsibility for coordination, reporting, and oversight of the Conservation Program. The HCP boundaries encompasses the entire project site, however the project site is not located within a protected conservation area. In the unanticipated event a special-status species is encountered on the project site, the proposed project would be required to abide by the mitigation measures and species protection measures set forth in the HCP.

The proposed project is a development project and the removal of landscape trees may be required. Approval of the proposed project is a discretionary action, and therefore, approval of the development project by the decision-maker shall constitute a permit to remove any trees per the project plan. If the City deems an application for tree removal permit is required, the Applicant would submit an application.

In addition to the above, as special-status species are not anticipated to be present at the project site and if present, mitigation measures and species protection measures set forth in the HCP would be followed, the proposed project would not conflict with the provisions of an adopted HCP, or other approved local, regional, or State habitat conservation plan. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.5 CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

Cultural resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects, and districts, each of which is described below:

Site. A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure.

Building. A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.

Structure. The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.

Object. The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.

District. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Significance Criteria

When a project has the potential to affect a cultural resource it is necessary to determine the importance of resources that could be affected. An important historical resource is one that meets any of the criteria listed below, or if it is already listed on the California Register of Historical Resources or a local register of historical resources.

An important historical resource is one which:

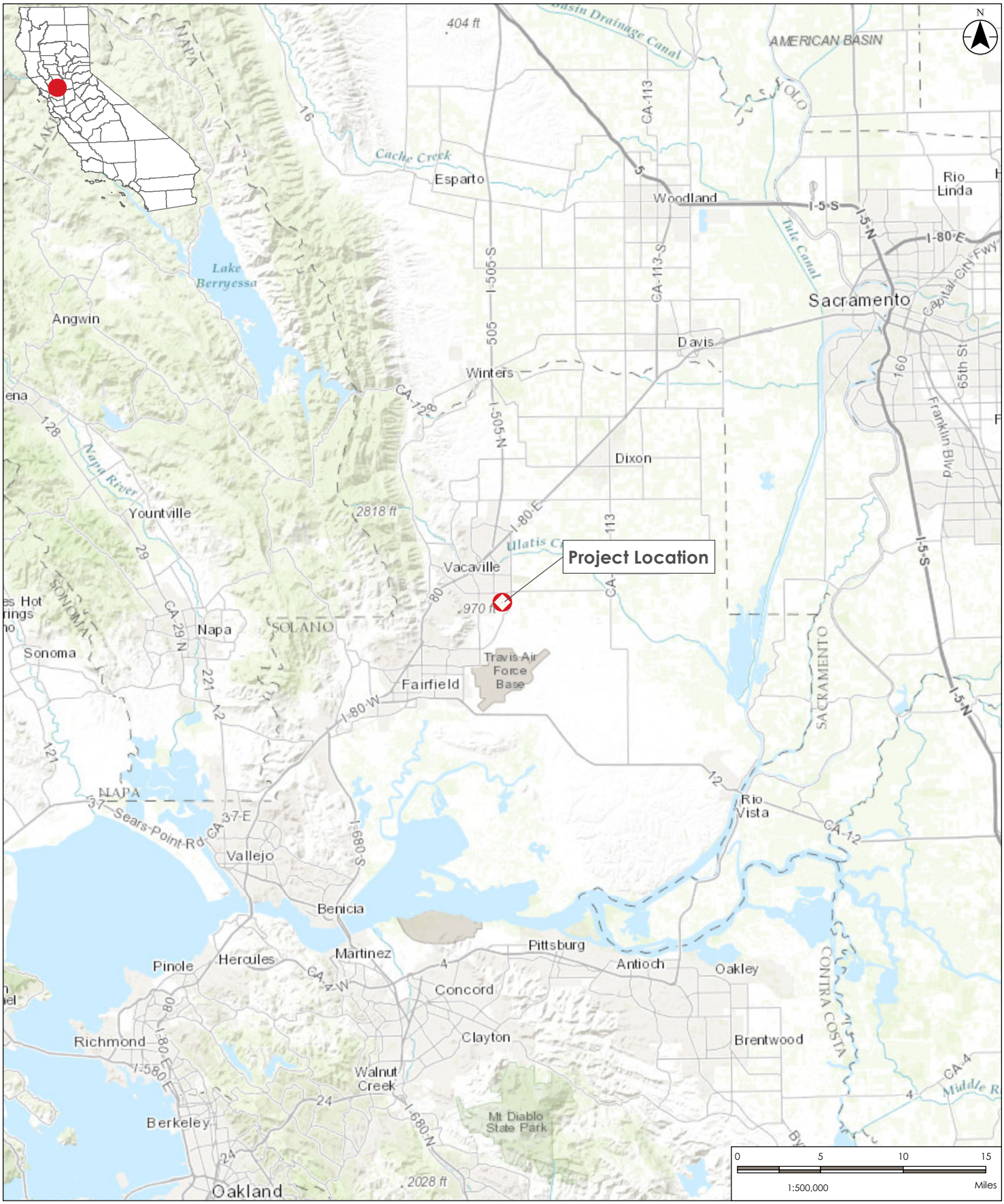
1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

2. Is associated with the lives of persons important in our past.

3. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

4. Has yielded, or may be likely to yield, information important in prehistory or history.

To determine the presence of cultural and historical resources within the project site and vicinity, Stantec reviewed available archival records search results completed for the Southtown Project EIR (Cotton/Bridges/Associates 2004; McElroy 2003) and conducted a cultural resource survey (Figure 3.5-1 and Figure 3.5-2). The Southtown Project was located in the same area as the proposed project. The archival records search and cultural resources survey were completed to satisfy environmental issues specified in CEQA and its guidelines by (1) identifying all cultural resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3) assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.



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Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.5-1. Project Vicinity Map

Prepared: MNugent, 9/14/2016

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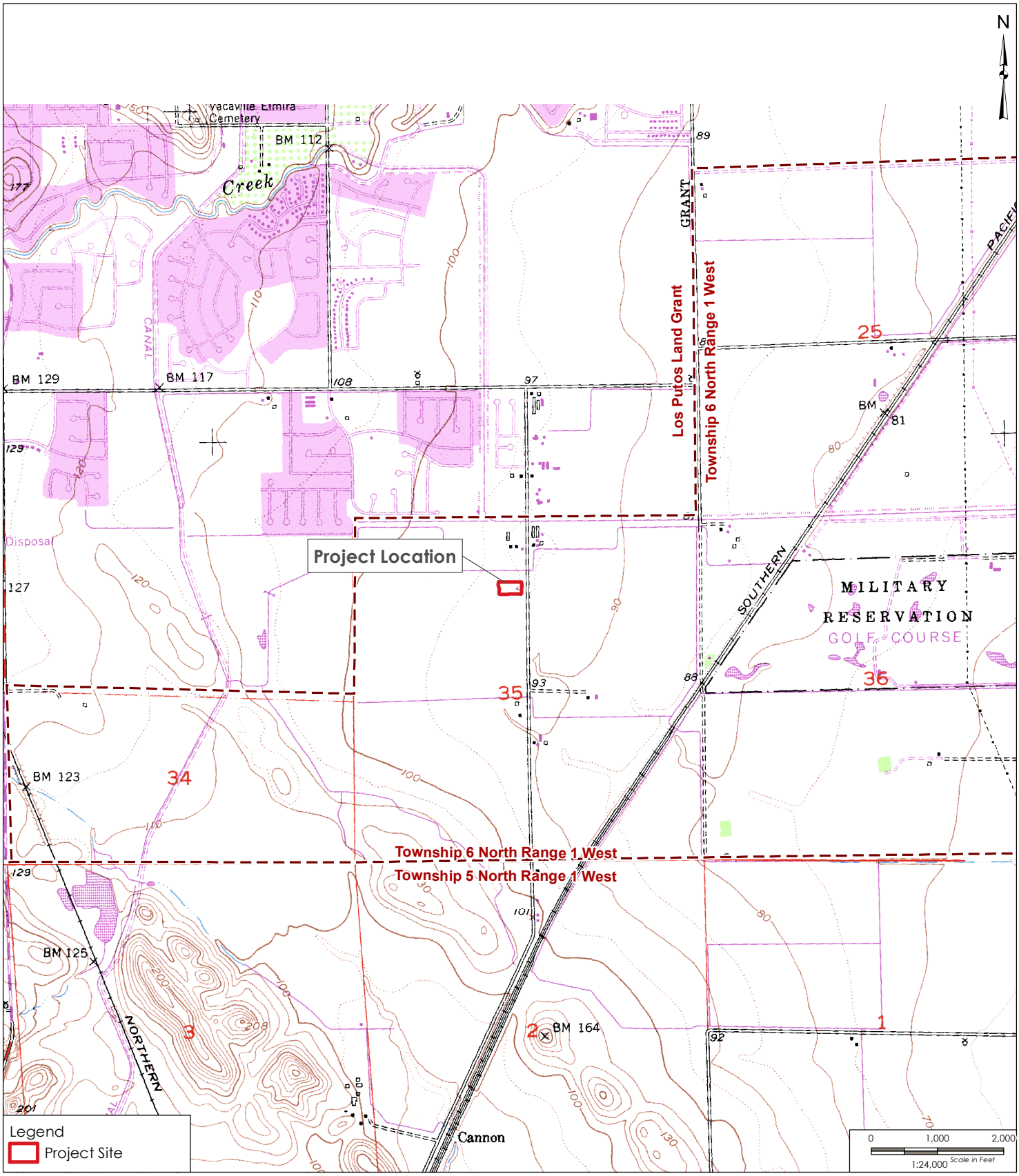

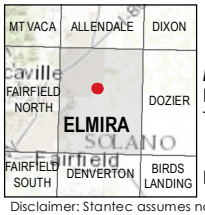

Stantec

Map Information:
Projection: UTM, NAD83 Zone 10 North
Topo Date: Linear Unit: Meter

Project Information:
PLSS: T6N, R1w, S4 and 5

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Vacaville, California

Figure 3.5-2. Project Location Map

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Assembly Bill (AB) 52 Consultations

Per the City's requirement of consultation under AB 52, the Yocha Dehe Wintun Nation was contacted in a letter dated September 2, 2016. Per the statute, no correspondence had been received from the Tribe within the 30 day window. Subsequently, the Tribe requested additional information from the City. In response to the Tribe's request, the City provided the Tribe with all available appropriate documentation. At the time of this document, the Tribe has not further engaged in consultation for the proposed project[1].

3.5.2 Methodology

The existing cultural resources setting and potential impacts from project implementation are based on record searches conducted by the Northwest Information Center (NWIC) for the City of Vacaville's Southtown Project (State Clearinghouse Number 2003062071) (Cotton/Bridges/Associates 2004; McElroy 2003), as well as a pedestrian survey conducted within the project area in September 2016. The project area has changed due to development since the 2003 pedestrian survey (McElroy 2003). Only the subject parcel (project area) remains undeveloped, although several structures once located on the parcel have been demolished subsequent to the 2003 pedestrian survey.

Records Search and Literature Review

As part of the study, a previously conducted records search completed for the City of Vacaville's Southtown Project by the NWIC was reviewed (Cotton/Bridges/Associates 2004; McElroy 2003). The records search included the project site and 0.5 mile buffer and was conducted by the NWIC of the CHRIS on May 14, 2003 (NWIC File No. 02-0847). The NWIC is the official state repository of archaeological and historic built environment records and reports for a fourteen-county area that includes Solano County and is housed at Sonoma State University in Rohnert Park. An updated records search for the proposed project has not been undertaken.

The records search for this study was performed in order to: (1) determine whether known cultural resources had been recorded within or adjacent to the study area; (2) assess the

[1] The City conducted AB 52 tribal outreach by sending a Tribal Consult letter to the Yocha Dehe Wintun Nation on September 2, 2016. On October 17, 2016, the City received the Yocha Dehe Wintun Nation comment letter dated October 10, 2016, in which the Tribe noted concerns that the project could impact known archaeological/cultural sites and requested that the City send the Tribe the cultural resource study for the proposed project. On October 17, 2016, the City responded to the Tribe with a phone message and email reply. In the email reply, the City explained that the project site is the continuation of development of a larger subdivision (Southtown) that was approved in 2004 with a certified EIR (SCH#2003062071) and that the proposed project is to change the land use on the site from commercial to residential. The City further explained that because the site was analyzed by a certified EIR and the IS shows that the proposed land use change impacts can be mitigated to a less than significant impact, the City has determined that the appropriate CEQA document is a MND that also tiers off the Southtown Project EIR. In the City's reply email to the Tribe, the City provided the Tribe with three attachments: the Cultural Resources mitigation measures from the proposed project's ISMND document, the Cultural Resources section of the Southtown Project EIR, and a figure from the Southtown Project EIR showing the project site location. At the time of this document, the Tribe has not further engaged in consultation for the proposed project.

likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical documents and literature; and (3) to review the distribution of nearby archaeological sites in relation to their environmental setting.

The record search included a review of all cultural resources and reports within a 0.5 mile of the project area. The records search was conducted by reviewing the OHP records, base maps, historic maps, and literature for Solano County on file at the office. Other sources reviewed included the OHP Historic Properties Directory, California Inventory of Historical Resources, Caltrans Bridge Survey, ethnographic information, and soil survey maps.

The records search revealed that no previously recorded resources had been recorded within the project area and no surveys have been conducted within the project area. One resource, a segment of historic road, was identified as being with the 0.5 mile records search radius of the proposed project; however, this resource is not located within the project area. The results of the NWIC records search are confidential and not for public distribution. Therefore, the full records search results are not included in this document.

A variety of historical maps were consulted for this project and revealed the presence of various trails, roads, and other features in the vicinity of the project area. Although it can be difficult to pinpoint a location on some of these maps, the only historic-era features present in the vicinity of the project area prior to 1953 include a road running north to south. This road alignment is now the modern, paved Vanden Road. As early as 1953, a structure is depicted within the project area. By 1980, that structure appears to have been removed and replaced by a new structure. A review of historic aerial imagery indicates that a yard and at least one structure and several trees were located within the project area in 1968. By 2009, the area appears completely cleared, with no evidence of structures or trees (historicaerials.com 2016). Table 3.5-1 below lists the features depictured on historic maps within the project vicinity.

Review of the Southtown Project EIR for the City of Vacaville identified one historic farm, identified as Farmstead One, as being located within the project area (Figure 3.5-3). It was identified from field survey for the technical report supporting the EIR that the farm consisted of a single-family residence, storage shed, corral and outbuildings; all of which had been abandoned for at least several decades (Cotton/Bridges/Associates 2004; McElroy 2003). A review of historic aerial imagery indicated that the farm dated to at least 1937. According to the EIR:

"Given the modified state of Farmstead One, it does not retain sufficient historical integrity to be considered a valuable historic resource. These properties do not meet the criteria required for listing. Impacts resulting from Project implementation to Farmstead One is considered less than significant (City of Vacaville 2004)."

Table 3.5-1: Features Depicted on Historic Maps Within the Project Vicinity

Map Name	Date	Features Present
Vacaville USGS (1:62500 scale)	1908	Yes, Vanden Road
Elmira USGS (1:62500 scale)	1917	Yes, Vanden Road
Elmira USGS (1:24000 scale)	1953	Yes, Vanden Road and one structure
Vacaville USGS (1:62500 scale)	1953	Yes, Vanden Road and one structure
Elmira USGS (1:24000)	1968	Yes, Vanden Road and two structures
Elmira USGS (1:24000)	1973	Yes, Vanden Road and five structures
Elmira USGS (1:24000)	1980	Yes, Vanden Road and two structures

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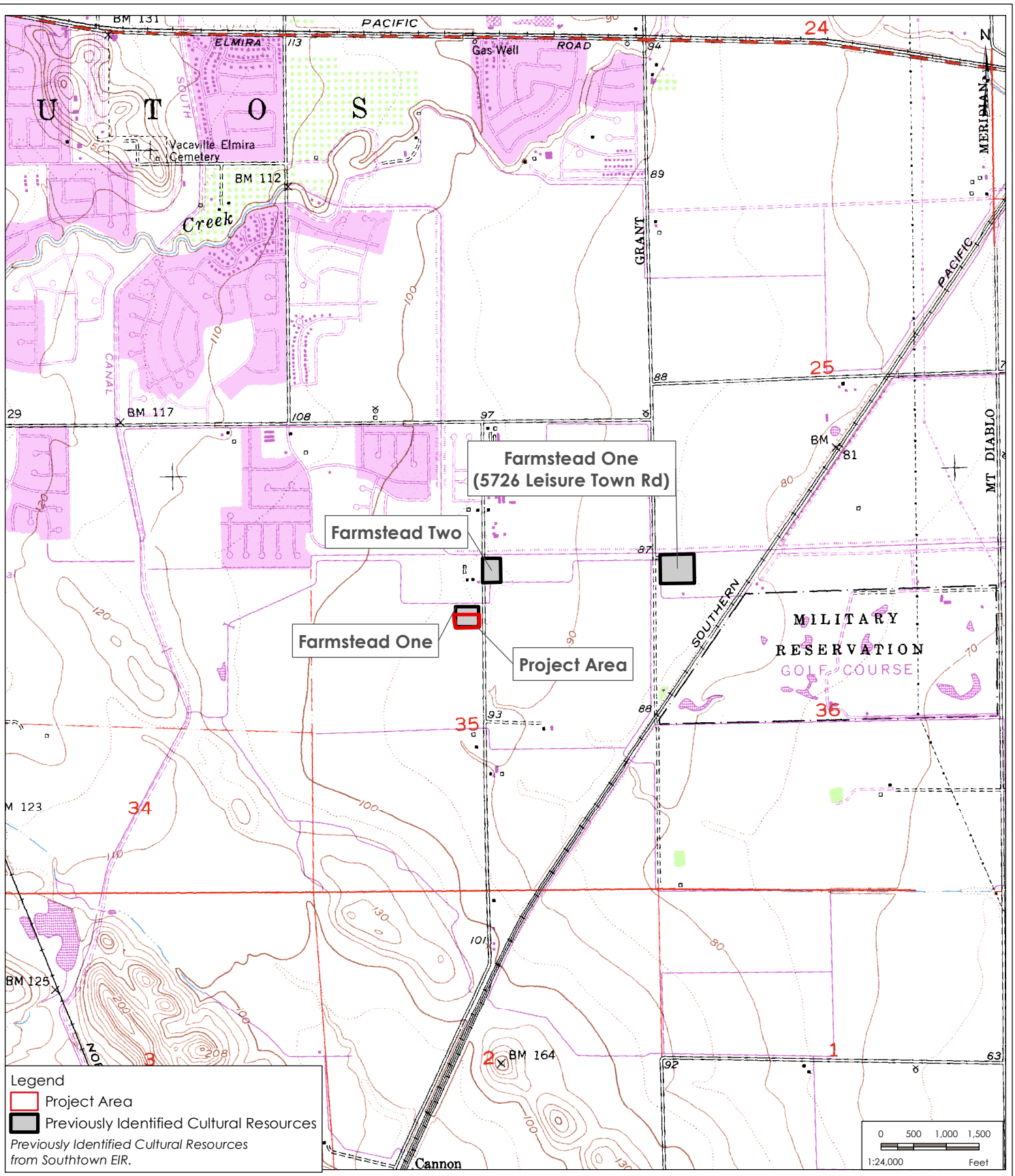

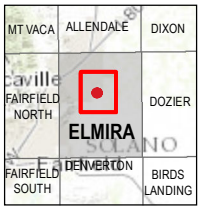

Stantec

Map Information:
Projection: UTM, NAD83 Zone 10 North
Topo Date: Linear Unit: Meter

Project Information:
PLSS: T6N, R1w, S4 and 5

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.5-3. Previously Identified Cultural Resources Map

Prepared: MNugent, 10/5/2016

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Field Survey

A Stantec archaeologist conducted an intensive-level pedestrian survey of the project area on September 2, 2016 (Figure 3.5-4). The project area was evaluated for the presence of prehistoric and historic-era site indications as well as the presence of historic-era built environment resources (Appendix C).

Site indicators for the presence of prehistoric sites in this area may include, but are not limited to: ground depressions; darkened soil areas indicative of middens; fire scorched and/or cracked rock; modified obsidian, cryptocrystalline silica (CCS), or other vitreous materials; and groundstone milling equipment. Historic-era archaeological sites may include: metal objects such as nails, containers or miscellaneous hardware; glass fragments; ceramic or stoneware objects or fragments; milled or split lumber; trenches; feature or structure remains such as buildings or building foundations; and trash dumps.

The survey used transects spaced no more than 10 meters apart and examined the entire project area. Ground visibility was fair to poor and was covered with invasive weeds, grasses, and evidence from prior construction staging, including bark dust piles and soil piles. Yellow star thistle (*Centaurea solstitialis*), Lactuca, and Morning glory were all observed within the project area. All exposed mineral soils, including rodent back dirt piles, were examined in detail. The survey found no indications of either prehistoric or historic-era archaeological sites and no built environment resources. No evidence of "Farmstead One" was noted. The farm and all associated buildings have been demolished and no evidence of their former existence was noted on the surface. The project area has been subject to historic and modern disturbances including earthmoving to create landscaped berms, agricultural disking, and refuse dumping.

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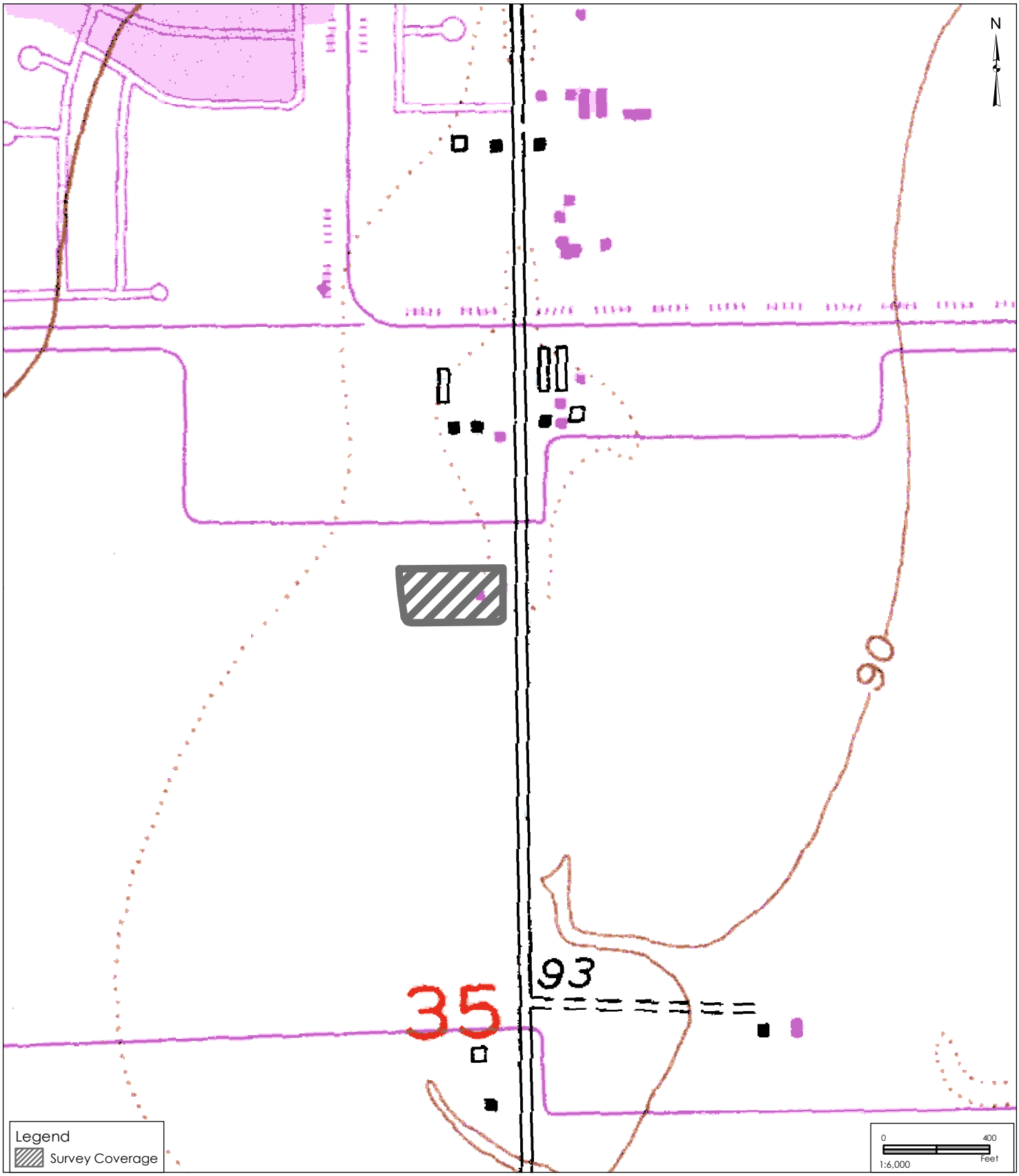

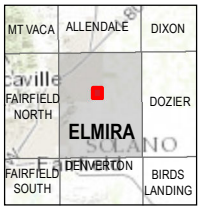

Stantec

Map Information:
Projection: UTM, NAD83 Zone 10 North
Topo Date: Linear Unit: Meter

Project Information:
PLSS: T6N, R1w, S4 and 5

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Vacaville, California

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Figure 3.5-4: Survey Coverage Map

Prepared: MNugent, 10/5/2016

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3.5.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact CUL-1 Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of one now demolished historic resource within the project area ("Farmstead One"). Furthermore, initial field review of the project area did not identify any potential historic resources within or adjacent to the project area, and did not identify any surface evidence of "Farmstead One" in the project area. Thus, the proposed project is not anticipated to have an impact on any known or potential historical resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered historical resources. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historic resources. With the implementation of Mitigation Measure CUL-1, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-1: If any cultural resource is encountered during ground disturbance or subsurface construction activities (e.g., trenching, grading), all construction activities within a 50 foot radius of the identified potential resource shall cease until a Secretary of the Interior qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation (DPR) 523 series forms. All forms and associated reports will be submitted to the NWIC of the CHRIS. The archaeologist shall determine whether the resource requires further study. If after the qualified archaeologist conducts appropriate technical analyses, the resource is determined to be eligible for listing on the California Register of Historical Resources or as a unique archaeological resource as defined in PRC Section 15064.5, the archaeologist shall develop a plan for the treatment of the resource. This shall contain appropriate mitigation measures, including avoidance, preservation in place, data recovery excavation, or other appropriate measures, as outlined in Public Resources Code Section 21083.2.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of no known prehistoric archaeological resources within or near the study area. However, the historic farm "Farmstead One" (c. 1937) was identified within the project area. However, initial field review of the project area did not identify any signs of previously unidentified subsurface archaeological resources within or adjacent to the project area. Thus, the proposed project is not anticipated to have an impact on any known or potential historical resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered unique archaeological resources. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique archaeological resources. With the implementation of Mitigation Measure CUL-1, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact CUL-3 Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of no known tribal cultural resources within or near the study area. Furthermore, initial field review of the project area identified that the project site is previously disturbed and did not identify any signs of previously unidentified subsurface tribal cultural resources within or adjacent to the project area. Thus, the proposed project is not anticipated to have an impact on any known or potential tribal cultural resources. Per the City's requirement of consultation under AB 52, the Yocha Dehe Wintun Nation was contacted in a letter dated September 2, 2016. In response to the Tribe's request, the City provided the Tribe with all available appropriate documentation[1]. The proposed project will change the land use on the previously disturbed

project site from commercial to residential. Thus, the proposed project is not anticipated to have an impact on any known or potential tribal cultural resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resource. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique tribal cultural resources. With the implementation of Mitigation Measure CUL-1, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact CUL-4 Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact Analysis

There are no known human remains within the project area, however, ground disturbance and subsurface construction activities such as trenching and grading associated with the proposed project could potentially disturb previously undiscovered human burial sites. Therefore, Mitigation Measure CUL-2 would be implemented to reduce impacts to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-2: If ground-disturbing activities uncover previously unknown human remains, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

There shall be no further excavation or disturbance of the area where the human remains were found or within 50 feet of the find until the Solano County Coroner and the appropriate City representative are contacted. Duly authorized representatives of the Coroner and the City shall be permitted onto the project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Sections 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to re-commence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any

death. If the Coroner determines the remains are Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the MLD does not make recommendations within 48 hours, the land owner shall reinter the remains in an area of the property secure from further disturbance. If the land owner does not accept the MLD's recommendations, the owner or the MLD may request mediation by NAHC.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

3.6 GEOLOGY AND SOILS

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

3.6.1 Environmental Setting

The City is located at the edge of two geographic provinces: the Sacramento portion of the Central Valley province and the Coast Ranges. Geologic conditions in this area are the result of activity occurring during the Mesozoic and Cenozoic eras. The physiography of the region is varied. Generally from west to east, landforms common to the Vacaville area are the low hills and uplands, low alluvial plains and fan, and flooded basins. Low hills and uplands are evident in the north from Vacaville to Putah Creek. The eastern two-thirds of the county is comprised mostly of low alluvial plains and fans ranging in elevation from about 100 feet at the edge of the Coast Ranges foothills to near sea level at the eastern border.

The City is vulnerable to seismic activity with several prehistoric earthquake faults in the area. A magnitude 6.4 earthquake on April 19, 1892 caused the destruction of most brick buildings in Vacaville (Stover and Coffman 1993). This earthquake was estimated to be a magnitude 6.5, and was followed by numerous aftershocks for the next several days. The source of the earthquake is unknown, but a possible source is an unrecognized or concealed fault located along the western margin of the Great Valley (Bennett 1987). The Vaca-Kirby Hills Fault system, which has not been active in the past 11,700 years but has shown displacement during the past 700,000 years, is the only fault system that passes through the City (General Plan 2015). The Vaca-Kirby Fault system is located approximately one mile southwest of the project site (California Geological Survey 1981).

The Green Valley Fault system, which lies 12 miles southwest of the project site, has been active within the past 200 years (General Plan 2015). While more likely than the Vaca Fault to have seismic impacts on Vacaville, the United States Geological Survey (USGS) estimates the probability of a magnitude 6.7 or greater earthquake along this fault prior to 2036 to be only three percent (General Plan 2015). The Rodgers Creek and Hayward Faults are located approximately 24 miles southwest of the City, and have an estimated 16 percent probability of producing a magnitude 6.7 or greater earthquake prior to 2036 (General Plan 2015).

Liquefaction and densification are phenomena associated with loose, cohesionless, sands and gravels subjected to ground shaking during earthquakes, and can result in unacceptable total and/or different settlements. The City is generally characterized by areas of very low, low, and moderate risk of liquefaction. According to the General Plan, the project site is located in an area with moderate liquefaction risk.

Landslides are a result of slope instability and characterized by the movement of soils and bedrock down steep slopes. Movement results from wet weather, seismic shaking, and/or improper construction, grading, and drainage. The majority of the City is described as flatland, with some areas having had small scattered landslides, specifically in the western region of the City in the Vaca Mountains and surrounding foothills. The topography of the project site is generally flat, and ranges from 90 feet to 94 feet above mean sea level. As such, the project site is located in an area where no landslides typically occur (General Plan 2015).

Certain types of soils have characteristics that make them more susceptible to erosion and expansion. The primary soil types in the City are silty, sandy, and clay loams. The soils at the

project site are comprised mainly of Capay silty clay loam, and Rincon clay loam; zero to one percent slope (USDA, NRCS 2016).

Subsidence is the downward shift of ground surface relative to sea-level. Subsidence typically occurs as a result of the dissolution of limestone, subsurface mining, extraction of natural gas, earthquakes, groundwater pumping, and fault rupture. Subsidence can occur in the City; however, typically occurs in areas where groundwater has been extracted. According to USGS Areas of Land Subsidence in California Map, no historic or current records of subsidence have been documented in the City (USGS 2016).

3.6.2 Methodology

Evaluation of potential geologic and soil impacts was based on a review of documents pertaining to the project site, including the General Plan, the General Plan EIR, Natural Resources Conservation Science Web Soil Survey, USGS earthquake seismic hazard maps, and USGS land subsidence in California Map, Southtown Project EIR, and Section 2.0, Project Description, of this ISMND. The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations, as well as the General Plan's goals, policies, and actions.

3.6.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact GEO-1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

Fault Rupture

The 1972 Alquist-Priolo Earthquake Fault Zoning Act required the State Geologist to establish regulatory "Earthquake Fault Zones" around the surface ruptures of active faults, in order to mitigate the hazard of surface fault rupture to structures for human occupancy. A fault is considered active if it has ruptured within the last 11,000 years. The project site is not located within or near an Alquist-Priolo Earthquake Fault Zone. According to the General Plan, there are no known active faults in the City. The closest Alquist-Priolo Earthquake Fault Zones are the Green Valley fault zone, located 13 miles southwest of the project site, and the Rodgers Creek and Hayward fault zones, located 24 miles southwest of the project site (General Plan 2015). Surface rupture is associated with being located close to an active fault, and because the nearest Alquist-Priolo Earthquake Fault Zone is approximately 30 miles from the project site, the risk of surface rupture near the project site is low. However, due to the sheer number of faults in the region, the possibility of a rupture in the future exists. The Southtown Project Area was previously studied under the Southtown Project EIR. Geotechnical investigations were previously submitted, evaluating the Southtown Project Area, including the general project vicinity. The proposed project would be required to comply with the latest adopted edition of the California Building Standards Code, and implement recommended design measures as outlined in the previous geotechnical reports. Therefore, impacts associated with fault rupture would be less than significant.

Ground Shaking

Strong ground shaking would likely occur at the project site during an earthquake, and because of the proximity of active faults in the region, there would be a strong potential for ground shaking. The Southtown Project Area was previously studied under the Southtown Project EIR. Geotechnical investigations were previously submitted, evaluating the Southtown Project Area, including the general project vicinity. The proposed project would be required to comply with the latest adopted edition of the California Building Standards Code, and implement recommended design measures as outlined in the previous geotechnical reports. Therefore, impacts associated with ground shaking would be less than significant.

Liquefaction

According to the General Plan Figure SAF-2, Liquefaction Potential, the potential for liquefaction to occur on the project site is moderate. According to the USGS maps, the project site is composed primarily of Capay silty clay loam, and Rincon clay loam; zero to one percent slope (USDA, NRCS 2016). These soils are typically found on basin rims, alluvial fans, deltas, and in basins. The Southtown Project Area was previously studied under the Southtown Project EIR. Geotechnical investigations were previously competed evaluating the Southtown Project Area, including the general project vicinity. The proposed project would be required to comply with the latest adopted edition of the California Building Standards Code, and implement design measures as outlined in the previous geotechnical reports. Therefore, impacts associated with liquefaction would be less than significant.

Landslides

The project area contains generally flat relief; therefore, the project site's potential for landslides to occur is low. As shown in Figure SAF-3, Historic Mapped Landslides, in the General Plan the project site is not located within an area identified as being susceptible to landslides. This condition precludes the possibility of landslides. No impacts from landslides would occur.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil?

Impact Analysis

Approximately 1.76 acres of the project site would be disturbed. Construction activities associated with the project site would include removal of vegetation, excavation, and grading; as such, there is potential for erosion to occur. Mitigation Measure HYD-1 is proposed requiring the implementation of standard stormwater pollution prevention measures to prevent erosion. With the implementation of mitigation, impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact GEO-3 Be located on strata or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact Analysis

Landslide

As discussed in Impact GEO-1, the project area contains generally flat relief; therefore, the potential for landslides to occur on or surrounding the project site is low. As shown in the General Plan, Figure SAF-3 Historic Mapped Landslides, the General Plan the project site is not located within an area identified as being susceptible to landslides (General Plan 2015). Therefore, no impact associated with landslides would occur.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits toward a stream bank, open side of a fill embankment, the side of a levee, or another open face; typically lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack will form. However, there are no open faces within 1,000 feet of the project site where lateral spreading could occur. Therefore, no impact associated with lateral spreading would occur.

Subsidence

Subsidence is most often attributed to human activity mainly from the removal of subsurface water. More than 80 percent of the identified subsidence in the United States is a result of exploitation of groundwater, with the increasing development of land water resources threatening to exacerbate existing land subsidence problems and initiate new ones (USGS 2013). According to USGS, Areas of Land Subsidence in California Map, no historic or current records of subsidence have been documented in the City (USGS 2016). Therefore, no impact associated with subsidence would occur.

Liquefaction

The project site is comprised of Capay silty clay loam and Rincon clay loam; zero to one percent slope (USDA, NRCS 2016). As described above in Impact GEO-1, the Southtown Project Area was previously evaluated under the Southtown Project EIR. Geotechnical investigations were previously submitted, evaluating the Southtown Project Area, including the general project vicinity. The proposed project would be required to comply with the latest adopted edition of the California Building Standards Code, and incorporate recommended design measures outlined in the previous geotechnical reports for the Southtown Project Area. As such, impacts associated with liquefaction would be less than significant.

Collapse

The project site is not underlain by natural or manmade subsurface features that are typically associated with collapse, including mining or extraction operations or karst topography. Therefore, no impact associated with collapse would occur.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GEO-4 Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial risks to life or property?

Impact Analysis

The soils at the project site are comprised mainly of Capay silty clay loam, and Rincon clay loam; zero to one percent slope (USDA, NRCS 2016). These soils are moderate to highly expansive surficial soils. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet, and are susceptible to soil expansion, and can threaten the stability of the proposed project without engineered foundations. The Southtown Project Area was previously evaluated under the Southtown Project EIR. Geotechnical investigations were previously completed, evaluating the Southtown Project Area, including the general project vicinity. The proposed project would be required to comply with the latest adopted edition of the California Building Standards Code, and incorporate recommended design measures, as outlined in the previous geotechnical reports. This would eliminate the potential for hazards associated with expansive soils to occur. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than Significant Impact.

Impact GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact Analysis

The proposed project would connect directly to the City's existing municipal sewer system and would not require septic tanks or any other alternative wastewater disposal system. Therefore, no impact would occur.

Level of Significance before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance after Mitigation

No Impact.

3.7 GREEENHOUSE GASES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

3.7.1 Environmental Setting

The issue of combating climate change and reducing greenhouse gas emissions (GHG) has been the subject of State legislation (AB 32 and Senate Bill [SB] 375). The Governor's Office of Planning and Research has adopted changes to CEQA Guidelines, and the environmental checklist which is used for Initial Studies such as this one. The changes to the checklist, which were approved in 2010, are incorporated above in the two questions related to a project's GHG impact.

The City of Vacaville adopted its General Plan Update and Energy and Conservation Action Strategy (ECAS) on August 11, 2015. The ECAS was created for Vacaville in compliance with State requirements that address the reduction of major sources of GHG emissions. The ECAS is a detailed, long-range strategy to reduce GHG emissions and achieve greater conservation of resources with regards to transportation and land use, energy, water, solid waste, and open space. Implementation of the ECAS is intended to guide Vacaville's actions through a series of communitywide and municipal GHG emissions reduction measures to decrease the city's contribution to GHG emissions. Communitywide GHG emission reduction measures are exclusively aimed to increase energy independence; reduce spending on gas, electricity, and water; and improve air quality from non-City operations. Municipal GHG emission reduction measures apply exclusively to City operations.

Greenhouse Gases (GHGs)

GHGs and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the U.S., respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the earth's atmosphere act as GHGs, as they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the earth's surface, some of it is reflected back into the atmosphere as infrared radiation (heat). GHGs

absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy from the sun to the earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide (CO2), methane [CH4], and nitrous oxide [N2O]), while others are exclusively human-made (like gases used for aerosols) (EPA 2014).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

Carbon Dioxide

CO2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane

CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

N_2O is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases

Hydrofluorocarbons (HFCs), perfluorinated chemicals (PFCs), and Sulfur hexafluoride (SF_6) are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential (GWP) gases.

Emissions Inventories and Trends

California is the second-largest contributor in the U.S. of GHGs and the sixteenth-largest in the world (CARB 2014a). According to the CARB's recent GHG inventory for the State, released May 2014, California produced 459 million metric tons of carbon dioxide equivalent (MTCO2e) in 2012 (CARB 2014a). The major source of GHGs in California is transportation, contributing 37 percent of the State's total GHG emissions in 2012.

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur/exacerbate environmental impacts, including, but not limited to, changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events (Moser et al. 2009). Cooling of

the climate may have the opposite effects. Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

In September 2006, then-Governor Arnold Schwarzenegger signed AB 32, which requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 delegated the authority for implementation to the CARB and directs the CARB to enforce the statewide cap. In accordance with AB 32, CARB prepared the Climate Change Scoping Plan (Scoping Plan) for California, which was approved in 2008. The Scoping Plan provides the outline for actions to reduce California's GHG emissions. Based on the reduction goals called for in the 2008 Scoping Plan, a 29 percent reduction in GHG levels relative to a Business-As-Usual (BAU) scenario would be required to meet 1990 levels by 2020. A BAU scenario is a baseline condition based on what could or would occur on a particular site in the year 2020 without implementation of a proposed project or any required or voluntary GHG reduction measures. A project's BAU scenario is project- and site-specific, therefore varies from project to project.

In 2011, the baseline or BAU level for the Scoping Plan was revised to account for the economic downturn and State regulation emission reductions (i.e., Pavley, Low Carbon Fuel Standard [LCFS], and Renewable Portfolio Standard [RPS]). Again, the BAU condition is project – and site-specific and varies. The BAU scenario is based on what could or would occur on a particular site in the year 2020 without implementation of a proposed project or consideration of any State regulation emission reductions or voluntary GHG reduction measures. Accordingly, the Scoping Plan emission reduction target from BAU levels required to meet 1990 levels by 2020 was modified from 29 percent to 21.7 percent (where BAU levels is based on 2010 levels). The amended Scoping Plan was re-approved August 24, 2011.

3.7.2 Methodology

As discussed in Section 3.3, the project is located within the YSAQMD, therefore the YSAQMD thresholds are the most appropriate to use for the project, however the YSAQMD has not established quantitative significance thresholds for GHGs. The YSAQMD recommends that Lead Agencies analyze GHGs for larger projects as a part of the full CEQA analysis. The SMAQMD, located within the same regional air basin, has established quantitative significance thresholds of 1,100 $MTCO_2e$ per year for the construction or operational phases of land use projects. Recommended thresholds were developed by the SMAQMD to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to GHG emissions reduction goals of AB 32 and the Scoping Plan (SMAQMD 2015). The BAAQMD

similarly established 1,100 $MTCO_2e$ for project operations as a screening level for ensuring 90 percent of the new GHG emissions would be reviewed and assessed for mitigation (BAAQMD 2010). Projects below the 1,100 $MTCO_2e$ would have a less than significant cumulative impact on GHGs. Additional discussion is provided in the Air Quality and Greenhouse Gas Assumptions Memorandum on the BAAQMD thresholds (Appendix A). It should also be noted that the project would not exceed the BAAQMD's preliminary operational screening threshold of 56 dwelling units; therefore it would not have the potential to exceed the BAAQMD's operational threshold of 1,100 $MTCO_2e$.

Construction-related and operations-related GHG emissions were estimated using the CalEEMod. Greenhouse gas emissions associated with project construction were estimated using CO_2e emissions as a proxy for all GHG emissions. The primary sources of proposed project-related GHG emissions are anticipated to be combustion of fossil fuels from the operation of internal combustion engines used during project construction (e.g., portable equipment, off road equipment, and vehicles) and VMT from operations. As discussed under Section 3.3 Air Quality, the baseline (i.e. existing condition) does not include a commercial use; therefore, the potential for VMT increase is already being experienced. The implementation of the proposed project with the land use change would reduce the City's ability to reduce future emissions in the cumulative context. However, the removal of this commercial site would not alter the conclusions of the Southtown Project EIR because the original South Town Project did not utilize local-serving retail as a mechanism for achieving vehicle trip reductions and thus VMT and emission reductions. The emissions estimates presented in the South Town EIR would not be increased through the removal of the commercial use of the site. Furthermore, the South Town EIR was prepared in 2003, when GHG emissions were not included in air quality model analyses, and there are no GHG estimates that were disclosed..

3.7.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

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

Impact Analysis

The proposed project may contribute to climate change impacts through its contribution of GHGs. The proposed project would generate a variety of GHGs during construction, including several defined by AB 32, such as CO2, CH4, and N2O from the exhaust of equipment, construction hauling trips, and worker commuter trips. The proposed project may also emit GHGs that are not defined by AB 32. For example, the proposed project may generate aerosols from diesel particulate matter exhaust. Aerosols are short-lived GHGs, as they remain in the atmosphere for approximately one week.

CalEEMod was used to estimate emissions from construction of the proposed project. Detailed information on the assumptions is included in Section 3.3 Air Quality. Modeling results are

included in this Initial Study as Appendix A. As mentioned above, the YSAQMD has not established quantitative GHG emissions thresholds.

Constructions Emission Inventory

Construction emissions would be generated from the exhaust of equipment and the exhaust of construction hauling trips and worker commuter trips. The construction phases included demolition, site preparation, site grading, paving, building construction, and architectural coating. $MTCO_2e$ emissions during construction of the project are presented in Table 3.7-1.

Table 3.7-1: Construction Greenhouse Gas Emissions

Construction Year	$MTCO_2e$
2017	**187**
2018	**31**
Total	**218**
SMAQMD construction significance thresholds	1,100
Potential to exceed recommended thresholds	None
Source: SMAQMD 2015	

During the construction of the project, approximately 218 $MTCO_2e$ would be emitted. Estimated construction emissions would not exceed the SMAQMD district recommended significance thresholds; therefore, impacts would be considered less than significant.

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. The operational emissions for the project are shown in Table 3.7-2. Sources for operational emissions include:

- Motor Vehicles: These emissions refer to greenhouse gas emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.
- Natural Gas: These emissions refer to the greenhouse gas emissions that occur when natural gas is burned on the project site. Natural gas uses include heating water, space heating, dryers, stoves, or other uses.
- Indirect Electricity: These emissions refer to those generated by offsite power plants to supply electricity required for the project.
- Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.

- Waste: These emissions refer to the greenhouse gas emissions produced by decomposing waste generated by the project. These include: waste removed from car interior during the cleaning process; waste generated in the restrooms; and/or waste generated from the operations of the facility.

The CalEEMod default assumptions were used for each of these sources of emissions. The operational emissions are shown in Table 3.7-2.

Table 3.7-2: Proposed Project Operational Greenhouse Gas Emissions

Source Category	MTCO2e
Area	50
Energy Consumption	59
Mobile	250
Solid Waste Generation	8
Water Usage	7
Total	**374**
SMAQMD Operational Thresholds	*1,100*
Potential to exceed recommend thresholds	None

As shown in Table 3.7-2, operation of the project would produce approximately 374 $MTCO_2e$ per year. Thus, the SMAQMD significance threshold of 1,100 $MTCO_2e$ per year is not exceeded. Accordingly, this impact would be less than significant.

In order to compare the proposed project with the previously contemplated commercial use of the site and the development of the other 2.0 acre commercial site as residential, two CalEEMod scenarios were run using the development potential for the sites as commercial uses and as 26 residential homes. (Ashton Place Unit 3's 15 homes and development of the 2.0 acre site at a density of 8.3 dwelling units per acre). Table 3.7-3 shows that the proposed project would generate fewer GHGs.

Table 3.7-3: GHG Emissions Comparisons between Residential and Commercial Use

Scenario	MTCO2e (Annual)	Annual VMT
Commercial Use (43,516 sf)	1,465	2,719,608
Residential Homes (32 du)	690	1,118,317
Increase or decrease as a result of the project	Decrease	Decrease
Cumulative change as a result of proposed project	Increase[1]	Increase[1]
Note:		

Scenario	MTCO2e (Annual)	Annual VMT
[1] The proposed project itself would not increase GHG emissions from baseline conditions (i.e. existing condition) does not include a commercial use; therefore, there is no potential for an emissions, but the removal of commercial uses from the South Town area would reduce the City's ability to reduce future emissions in the cumulative context. This cumulative increase would not alter the conclusions of the Southtown Project EIR, or result in a new impact because the original Southtown Project did not utilize local-serving retail as a mechanism for achieving vehicle trip reductions and thus VMT and emission reductions. The emissions estimates presented in the Southtown Project EIR would not be increased through the removal of the commercial use of the site.		

As shown in Table 3.3-3, the proposed project would generate fewer GHGs as a residential project compared to a commercial use. The project would change the commercial land use designation and remove the potential for the City to decrease VMT and GHG emissions in the future cumulative context, however, the project individually would not not alter the conclusions of the Southtown Project EIR, or result in a new impact exceeding a GHG threshold. Because the original Southtown Project EIR did not utilize local-serving retail as a mechanism for achieving vehicle trip reductions and thus VMT and emission reductions, the emissions estimates presented in the Southtown EIR would not be increased through the removal of the commercial use of the site. The impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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

Impact Analysis

The City of Vacaville has adopted its ECAS with the goal of reducing GHG emissions from communitywide and municipal sources. The ECAS is to be utilized for tiering and streamlining future development within Vacaville, pursuant to CEQA Guideline Sections 15152 and 15183.5.

The City of Vacaville established a GHG reduction target of 21.7 percent below Vacaville's 2020 BAU forecast. As discussed in the ECAS, in order to achieve the target of reducing 2020 BAU emissions by 21.7 percent, 2020 BAU GHG emissions in Vacaville must be reduced by 260,988 $MTCO_2e$ to achieve no more than 941,722 $MTCO_2e$ in total emissions in 2020. Federal and State regulations regarding fuel standards, renewable energy generation, energy conservation, and

green building materials will substantially reduce GHG emissions in Vacaville, regardless of actions by the City. After taking those reductions into account in the 2020 adjusted forecast, the 2020 emissions in Vacaville would be 940,780 $MTCO_2e$, just below the 941,722 $MTCO_2e$. As such, the federal and State regulations alone would achieve the City's GHG emissions reduction target. However, the City has identified additional measures to implement at the local level in order to further reduce GHG emissions in Vacaville and provide flexibility and assurances that the reduction target will be achieved. The City's measures are divided into nine sectors:

1. Transportation and Land Use
2. Green Building
3. Renewable Energy and Low Carbon Fuels
4. Energy Conservation
5. Water and Wastewater
6. Solid Waste
7. Parks, Open Space, and Agriculture,
8. Purchasing
9. Community Action

In order to demonstrate that an individual development project complies with the ECAS, the City developed a New Development Workbook to assist in the review process. Table 3.7-4 shows the project's compliance with applicable measures from the ECAS New Development Workbook.

Table 3.7-4: Proposed Project ECAS Compliance Determination

ECAS Reduction Measure #	ECAS Measure Description	Compliance Determination (Yes, No, Not Applicable)
Transportation and Land Use Measures		
LU-1	Encourage all new residential, commercial, and public buildings and places of assembly to include a principal functional entry that faces a public space such as a street, square, park, paseo, or plaza, in addition to any entrance from a parking lot. For other, less public buildings such as warehouses, manufacturing, and storage buildings, encourage entries to ancillary office, break room, or staff uses to face a public space.	Yes. The proposed project has been designed to maximize the use of the project site by creating a residential neighborhood complete with pedestrian-friendly walkways and direct access to an existing park.
LU-2	Require that new neighborhoods be based on traditional residential development patterns (i.e. interconnected streets or grid pattern) in a variety of densities with a pedestrian-friendly network of streets and parks, unless prohibited by topographical conditions or other site-specific constraints.	Yes. The project provides medium density housing opportunities with an interconnected street pattern and provides a pedestrian friendly neighborhood with rear entry garages.
LU-4	Require adequate pedestrian access to or through all new commercial, residential, and mixed-used development. New pedestrian infrastructure shall incorporate amenities such as trees to shade sidewalks, lighting, benches, signage, and pedestrian signalization at major transportation points to increase pedestrian convenience, comfort, and safety.	Yes, and No. The proposed project has been designed to maximize the use of the project site by creating a residential neighborhood complete with landscaping, pedestrian-friendly walkways, and street trees.

ECAS Reduction Measure #	ECAS Measure Description	Compliance Determination (Yes, No, Not Applicable)
		But, removes the close proximity of neighborhood commercial uses, therefore requires more driving.
LU-6	Encourage street and house orientation in new neighborhoods and roof types that maximize the south-facing exposure of new homes, unless prohibited by topographical conditions or other site-specific conditions.	Yes. The development provides for south facing exposure of new homes.
LU-8	Discourage density reductions on infill sites within 1/4 mile of retail and employment centers and transit routes.	Not Applicable. The proposed project does not include a density reduction. The project proposes medium density housing.
LU-9	Require development on infill sites within 1/4 mile of retail and employment centers, transit routes, and recreation areas to provide pedestrian and bicycle connections to those destinations.	Not Applicable. Future residents will be able to utilize existing sidewalks constructed in compliance with City requirements in this area. Future residents will also be near an existing Class II bikeway on Vanden Road.
TR-3	Revisit off-street parking ordinances to encourage shared parking and parking maximums. Reduce required parking as incentive for infill development and the installation of bikeways and bicycle parking.	Not applicable. This is a city-wide measure. The proposed project includes four parking stalls per dwelling unit in keeping with the parking standard for single-family homes on a private street. The proposed project provides 60 parking stalls (30 garage spaces along with 30 additional onsite spaces) for the 15 units. This provides a ratio of 4.0 parking stalls per unit, as required.
TR-11	Require the provision of secure bike parking, protected from the elements, for multi-unit residential developments that lack individual garages.	Not applicable. The proposed project is a single-family development.
TR-12	Require developments requiring specific plans to provide land for multi-use trails that connect to existing or future bikeways, according to the adopted bikeway plan.	Not applicable. The proposed project is not a specific plan.
Renewable Energy and Low Carbon Fuels		
RE-2	Encourage residential projects of ten units or more to participate in the California Energy Commission's New Solar Home Partnership, which provides rebates to developers of six units or more who offer solar power in 50 percent of new units, or similar programs with equal or greater requirements.	Not applicable. This is a city-wide measure. And this is at developer discretion.
RE-5	Require that new buildings be constructed to allow for easy, cost-effective installation of future solar energy	Yes. The single-family homes will be developed in accordance

ECAS Reduction Measure #	ECAS Measure Description	Compliance Determination (Yes, No, Not Applicable)
	systems, unless prohibited by topographical conditions or other site-specific constraints	with California Building Standards requiring solar-ready roofs.
RE-6	Encourage the installation of solar photovoltaic arrays in new parking lots and replacement in existing parking lots.	Not applicable. The parking lot would be a shared lot without the ability to designate the generated energy to a single-user.
Water and Wastewater		
WW-1	Sub A. Support conservation measures outlined in the City's Urban Water Management Plan. For all new development, require all water use and efficiency measures to comply with City Codes.	Yes. The proposed project would comply with applicable City codes.
Energy Conservation		
EC-1	Mandate the use of energy-efficient appliances in new development that meet Energy Star standards and the use of energy-efficient lighting technologies that meet or exceed Title 24 standards.	Yes. The proposed project would include energy-efficient appliances and would be required to meet the most current Title 24 requirements at time of construction.
EC-3	Require all new development and major rehabilitation projects to incorporate strategies to reduce heat gain for 50 percent of the non-roof impervious site landscape including roads, sidewalks and parking lots.	Yes. MM GHG-1 would require the project to incorporate strategies such as providing shade within five years of occupancy, using paving materials with a Solar Reflective Index (SRI) of at least 29, using an open grid pavement system, incorporating parking under a roof, and requiring any roof used to shade or cover parking to have an SRI of at least 29. SRI is defined as a measure of the roof's ability to reject solar heat, as shown by a small temperature rise.
EC-4	Require street lights with LED, induction, or other energy efficient lighting in new development.	Yes. The proposed project would comply with City standards for LED street lights.
Solid Waste		
SW-1	Sub A. Continue to require at least 50 percent diversion of non-hazardous construction waste from disposal, consistent with CalGreen. Sub B. Require all new and existing multi-family developments that are redeveloping or remodeling to provide recycling areas for their residents. Allow a reduction in the parking requirement of necessary to allow adequate space for the recycling area.	Yes. The proposed project would comply with City requirements for the diversion of non-hazardous construction waste. Not applicable.

ECAS Reduction Measure #	ECAS Measure Description	Compliance Determination (Yes, No, Not Applicable)
Green Building		
GB-1	Allow greater permitting-related development flexibility and other incentives for LEED-Silver, Built It Green, Green Point or equivalent rating; for example, by giving green projects priority in plan review, and field inspection services.	Not applicable. The proposed project is not proposed as a "Green" project.
GB-2	Require measures that reduce energy use through solar orientation by taking advantage of shade, prevailing winds, landscaping, and sun screens, unless prohibited by topographical conditions or other site-specific constraints.	Yes. The proposed project takes into account solar orientation and provides landscaping to reduce energy use.
GB-5	Develop a "heat island" mitigation plan that includes guidelines for cool roofs, cool pavements, and strategically placed shade trees.	Not applicable. This is a City-wide measure, however, the proposed project will comply with Southtown Project EIR mitigation measures requiring the use of reflective roofing materials, such as EPA Energy Star roofing materials. Additionally, the proposed project will comply with the City's land use code to reduce heat gain through the use of paving materials with a Solar Reflective Index of at least 29. The proposed project also includes landscaping and shade trees.
Source of Measures: City of Vacaville ECAS 2015. Source of Compliance Determination: Stantec, 2016.		

The proposed project would be subject to Title 24 energy efficiency standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. The project will comply with the California Green Building Standards Code, which includes requirements to increase recycling, reduce waste, reduce water use, increase bicycle use, and other measures that will reduce greenhouse gas emissions. Motor vehicle emissions associated with the project would be reduced through compliance with state regulations on fuel efficiency and fuel carbon content. The regulations include the Pavley fuel efficiency standards that require manufacturers to meet increasing stringent fuel mileage rates for vehicles sold in California and the Low Carbon Fuel Standard that requires reductions in the average carbon content of motor vehicle fuels. Emissions related to electricity consumption by the project would be reduced as the electric utility complies with the Renewable Portfolio Standard, which requires utilities to increase its mix of renewable energy sources to 33 percent by 2020. As discussed in the Scoping Plan Update prepared by CARB in 2015, California is on track to meet the 2020 goal of reducing GHG emissions back to 1990 levels by 2020 with GHG reduction measures implemented by the State. The ECAS acknowledges that federal and State regulations alone would achieve the City's GHG

emissions reduction target. Nevertheless, the City has identified additional measures to implement at the local level in order to further reduce GHG emissions in Vacaville. The project has complied with applicable local measures.

In summary, although the proposed project would generate temporary GHG emissions during construction and increased GHG emissions during operation when compared to existing conditions, as discussed in Impact GHG-1, emissions from the project would not exceed the SMAQMD significance thresholds nor would they exceed BAAQMD thresholds. The proposed project is located within the Sacramento region and the SMAQMD has established recommended thresholds to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to GHG emissions reduction goals of AB 32 and the Scoping Plan. Additionally, as shown in Table 3.7-3, the proposed project would be in compliance with applicable ECAS measures through the incorporation of features that minimize GHG emissions. These mitigation measures and features are consistent with project-level strategies identified in the ECAS and the CARB's Scoping Plan. As such, the proposed project would not conflict with an applicable plan; therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM GHG-1: Prior to construction, the project plans shall demonstrate that the project incorporates strategies such as providing shade of sidewalks, paved areas, and common areas within five years of occupancy, using paving materials with a Solar Reflective Index (SRI) of at least 29, using an open grid pavement system, incorporating parking under a roof, and requiring any roof used to shade or cover parking to have an SRI of at least 29 in order to minimize heat gain.

MM GHG-2: Prior to construction, the project applicant shall demonstrate that the homes would be constructed with solar ready roofs in accordance with California Green Building Standards.

MM GHG-3: Prior to occupancy, the project applicant shall demonstrate that the residences are equipped with energy-efficient appliances that meet Energy Star standards and with energy-efficient lighting technologies that meet or exceed Title 24 standards.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely-hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to *Government Code Section 65962.5* and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

3.8.1 Environmental Setting

Hazardous materials, as defined by the California Code of Regulations (CCR), are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – Causes Human Health Effects
- Ignitable – Has the Ability to Burn
- Corrosive – Causes Severe Burns or Damage to Materials
- Reactive – Causes Explosions or Generates Toxic Gases

Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Government Code, Title 22, Sections 66261.20–24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

California Government Code, Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to compile, maintain, and update specified lists of hazardous material release sites. The CEQA (California Public Resources Code, Section 21092.6) requires the Lead Agency to consult the lists compiled pursuant to California Government Code, Section 65962.5 to determine whether the proposed project and any alternatives are identified on a federal or State listing database. The required lists of hazardous material release sites are commonly referred to as the "Cortese List" after the legislator who authorized the legislation. Since the statute was enacted more than 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases; the information required in the Cortese List does not exist. Those requesting a copy of the

Cortese List are now referred directly to the appropriate information resources contained on internet websites hosted by the boards or departments referenced in the statute, including the online EnviroStor database from the Department of Toxic Substances Control (DTSC) and the online GeoTracker database offered by the State Water Resources Control Board (SWRCB). These two databases include hazardous material release sites, along with other categories of sites or facilities specific to each agency's jurisdiction.

Federal regulations and regulations adopted by the YSAQMD apply to the identification and treatment of hazardous materials during demolition and construction activities. Failure to comply with the regulations respecting asbestos and dust control may result in a Notice of Violation being issued by the YSAQMD (YSAQMD 2015), civil penalties under State and/or federal law, and possible action by the EPA under federal law. Federal law covers a number of different activities involving asbestos, including demolition and renovation of structures (40 CFR § 61.145). The California Department of Conservation (CDC) and California and US Geologic Surveys (CGS, USGS) map naturally-occurring asbestos (NOA) areas throughout the State of California for research purposes.

The undeveloped project site is bordered to the north by residential developments; to the south by Cogburn Circle, beyond which lies VFD Station 75 and Magnolia Park; to the west by Vega Way, beyond which lies residential developments; and to the east by Vanden Road, beyond which lies undeveloped land. The project site is not included on a list of hazardous materials sites compiled pursuant to California Government Code, Section 65962.5 and the project site is not known or expected to contain any existing contaminated soils. A search of EnviroStor, GeoTracker and NOA maps in September 2016 revealed no listings within the project site, (CDC 2011; CGS 2011; USGS 2011). The project site is void of development, eliminating the possibility of structural asbestos onsite.

The nearest public airports to the project site are the Nut Tree Airport and the Travis Air Force Base Airport, located approximately 3.5 miles northwest and approximately 3.8 miles south from the project site, respectively. There is one private airport, Vaca Valley Hospital Heliport, located approximately 2.02 miles northwest of the project site (Tollfree 2015). The project site falls outside the Area of Influence of the Nut Tree Airport as defined in the Nut Tree Airport Land Use Compatibility Plan and presented in the City's General Plan (Solano County 1988). The project site is located within land use Zone D of the Travis Air Force Base Land Use Compatibility Plan (Solano County 2002). Zone D includes all locations beneath any of the Travis Air Force Base airspace protection surfaces delineated in accordance with Federal Aviation Regulations Part 77. Compatibility Zone D does not place any restrictions on the types of land uses allowed, with the exception of land uses that could cause hazard to flight, such as physical, visual, and electric forms of interference and land uses that attract birds. Any object over 200 feet tall requires airspace review. Though the project site is located beyond the Area of Influence of the Nut Tree Airport, it is located within land use Zone D of the Travis Air Force Base Airport; thus, the proposed project would be subject to a determination of consistency from the Solano County Airport Land Use Commission (ALUC) to ensure the proposed project is compatible with the ALUC Plan, in accordance with California State Public Utility Code, Section 21670 et seq. (Solano County 1988). The Solano County ALUC guides airport development in the County and governs the area surrounding airports to prevent issues relating to noise and safety.

There are no wildlands located within the City. CAL FIRE evaluates fire hazard severity risks according to areas of responsibility (i.e., federal, State, and local). According to CAL FIRE, there are no very high fire hazard severity zones within the Local Responsibility Area on or near proximity to the proposed project. Likewise, there are no moderate, high, or very high fire hazard severity zones in the State Responsibility Areas located in the vicinity of the proposed project (CAL FIRE 2007).

3.8.2 Methodology

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from the proposed project and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks. Local and State agencies would be expected to continue to enforce applicable requirements to the extent that they do so now.

The following reports documenting potential hazardous conditions at the project site were reviewed for this analysis: preliminary site plan for the proposed project; available literature, including documents published by federal, State, and local agencies; applicable chapters from the General Plan, General Plan EIR, the Southtown Project EIR; and Section 2.0, Project Description. The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental impacts. In determining the level of significance, the analysis assumes that development of the project site would comply with relevant federal, State, and local ordinances and regulations.

3.8.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact Analysis

The project site is currently zoned CN which allows for uses which generally provide goods and services in small retail centers intended to accommodate a neighborhood area. Permitted uses under CN zoning include such uses as food stores and restaurants and conditional uses including convenience markets and service stations. Solano County has prepared and adopted a Hazardous Materials Business Plan (HMBP) Program for all waste projected to be generated in the County. State law requires all businesses to prepare an inventory of hazardous materials they use and store. The Solano County Department of Environmental Management (SCDEM) is the State Certified Unified Program Agency (CUPA) for Solano County. As the Solano County CUPA, SCDEM oversees the HMBP Program, inspects businesses, and enforces State requirements for hazardous materials usage and storage. A HMBP is required for any site that handles any individual hazardous material or mixture in excess of any of the following quantities: 55 gallons (liquid); 500 pounds (solid); or 200 cubic feet (gases). Commercial uses on the project site would

have a higher likelihood to routinely transport, use, or dispose of hazardous materials than residential uses on the project site.

The proposed project consists of the development of the 1.76 undeveloped project site as a 15 lot single-family subdivision. Residential uses would not involve the regular use, storage, transport, or disposal of significant amounts of hazardous materials. Construction of the proposed project would involve the minor routine transport and handling of hazardous substances such as diesel fuels, lubricants, solvents, asphalt, paints, building materials, finishing materials, pesticides, and fertilizers. Handling and transportation of these materials could result in the exposure of workers to hazardous materials. However, the proposed project would not create a significant hazard to the public or the environment, because project construction and operation would be in compliance with applicable federal, State, and local laws pertaining to the safe handling and transport of hazardous materials. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact Analysis

A search of EnviroStor, Geotracker, and NOA maps in September 2016 revealed no listings within the project site; the potential for NOA due to geologic fault lines in the City is confined to rifts located remotely from the proposed project, to the southwest (CDC 2013; CGS 2010; USGS 2011). The project site is void of development, eliminating the possibility of structural asbestos onsite.

As previously noted in Impact HAZ-1, the proposed project would involve the minor use of hazardous materials, including fuels, lubricants, solvents, paint, finishing materials, pesticides, and fertilizers. The use of these substances is not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset or accident. Furthermore, all project construction and operation activities would be in compliance with applicable federal, State, and local laws pertaining to the safe handling and transport of hazardous materials. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-3 Emit hazardous emissions or handle hazardous or acutely-hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact Analysis

There are no schools within 0.25 mile of the project site. Additionally, the proposed project would not involve the use of significant quantities of hazardous materials, and therefore would not have the potential to expose any school to such substances. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HAZ-4 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact Analysis

Pursuant to CEQA, the California DTSC maintains a Hazardous Waste and Substances Sites List (Cortese List). As part of the Cortese List, DTSC also tracks "Calsites," which are mitigation or brownfield sites (previously used for industrial purposes) that are not currently being worked on by DTSC. Before placing a site on the backlog, DTSC ensures that all necessary actions have been taken to protect the public and environment from any immediate hazard posed by the site. The proposed project is not included in the DTSC Cortese List and according to the State Water Resources Control Board "Geotracker," an online hazardous materials database, the project site is not listed as a hazardous materials site. No commercial or industrial land use activities have occurred previously onsite. As such, no impacts would occur.

Level of Significance before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance after Mitigation

No Impact.

Impact HAZ-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Impact Analysis

The proposed project is not within two miles of a public airport. The closest public airport, Nut Tree Airport, is located approximately 3.5 miles to the northwest of the proposed project, and does not encompass the project site in its airport influence area, as shown in the relative Nut Tree Airport Land Use Compatibility Plan (Solano County 1988). Travis Air Force Base Airport is located 3.8 miles southeast of the project site. The project site is within land use Zone D of the Travis Air Force Base Land Use Compatibility Plan (Solano County 2002). Limitations on the height of structures are the only compatibility factors within this zone. As the proposed homes will be 23 feet to 25 feet tall, the proposed project is anticipated to comply with the Travis Air Force Base Land Use Compatibility Plan.

Though the project site is located beyond the Area of Influence of the Nut Tree Airport, it is located within land use zone D for the Travis Air Force Base Airport; thus, the proposed project would be subject to a determination of consistency from the Solano County ALUC to ensure the proposed project is compatible with the ALUC Plan, in accordance with California State Public Utility Code, Section 21670 et seq. (Solano County 1988). For the reasons outlined above, the proposed project is anticipated to be consistent with the Solano County ALUC.

Although the proposed project is located within an airport land use plan, the proposed project is not anticipated to result in a safety hazard for people residing or working in the project area due to the proposed homes ranging from 23 feet to 25 feet. Therefore, the proposed project would result in a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-6 For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Impact Analysis

A private airstrip occurs within the vicinity of the proposed project. There is one private airport, Vaca Valley Hospital Heliport, located approximately 2.02 miles northwest of the project site (Tollfree 2015). The proposed project would not include any improvement that would occur at a height that could potentially interfere with air traffic patterns. Therefore, no impacts associated with private airstrip hazards would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HAZ-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact Analysis

The VFD Station 75 is located directly south of the project site, on Cogburn Circle. The VFD considers its service levels adequate for existing developments and response areas; the proposed project would not alter or interfere with the provision of emergency services or existing evacuation plans to these existing developments and response areas. The proposed project would not result in the blocking or changing of any roadways. As such, the proposed project would have a less than significant impact to emergency service plans and no mitigation would be required.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact Analysis

There are no wildlands within the City. According to the Solano County Fire Hazard Severity Zone Maps of State and Local Responsibility Areas, the proposed project is located in an Unzoned Area, indicating no moderate, high, or very high fire hazard severity surrounds the proposed project or vicinity of the proposed project (CAL FIRE 2007). The proposed project is located in a residential area and is surrounded by residential and community development and infrastructure. These land use types are not associated with wildland fires and preclude the possibility of exposure thereof. Therefore, impacts from wildland fires would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.9 HYDROLOGY AND WATER QUALITY

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☒	☐	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f)	Otherwise substantially degrade water quality?	☐	☒	☐	☐

	Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.1 Environmental Setting

The following paragraphs describe the hydrologic and water quality setting within the City of Vacaville.

Climate and Precipitation

Vacaville's climatic conditions are consistent with the temperate conditions that dominate the Sacramento Valley. The summers are hot and dry, and the winters cool and moist. Average monthly temperatures range from lows in the 40s and highs in the 50s during the winter months, to lows in the 60s and highs in the 100s during the summer months. The predominant rainfall season is from November through April, with the heaviest storms occurring from December through February. Spatial rainfall distribution over the Vacaville area consists of higher intensities and volumes in the upper elevations of the western portion of the Ulatis Creek watershed and lower intensities and volumes to the east. Mean annual precipitation varies from 45 inches at the ridgeline of the Vaca Mountains to 23 inches in the flat southeastern portion of the watershed near Elmira.

Topography

Topography of most of the city is relatively flat. The relief of the project site is less than four feet, ranging from approximately 90 feet to 94 feet. The United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) Web Soil Survey classifies the project site with a NRCS Hydraulic Soil Group "C" designation, which has a low permeability and moderately high runoff rate (USDA 2016).

Watershed and Regional Drainage

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. The City of Vacaville contains four watershed areas, being the Alamo Creek, Ulatis Creek, Horse Creek, and Gibson Canyon Creek watersheds, all of which are part of the larger, 150-square mile Ulatis Creek watershed. The Southtown Project Area is located in the Alamo Creek watershed because the area is located immediately south of the realigned Alamo Creek. According to the Southtown Project EIR, surface runoff within the project site drains into the Brazelton Drain, located south of the project site and immediately south of the Southtown Project Area. The Brazelton Drain drains in a southeastern direction discharging into Barker Slough and ultimately into the Sacramento River. The major stream courses in the City include the following: Alamo Creek, including tributaries Laguna Creek and Encinosa Creek; Ulatis Creek; Horse Creek, including its tributary Pine Tree Creek; and Gibson Canyon Creek.

Onsite Drainage

The project site is located in the southeast part of the City and is served by the City's storm drain system, maintained by the City. Proposed stormwater runoff from the project site would be directed to proposed area drains. These area drains would be connected to two12 inch and one 10 inch proposed onsite storm drain lines with laterals to area lines. The three onsite storm drain lines would then connect to the existing 18 inch public storm drain line located on the north side of Cogburn Circle. The stormwater would then be conveyed through existing public storm drain lines to the existing detention basin on the east side of Leisure Town Road. The proposed project would be served with drainage service by the City of Vacaville.

Groundwater

The City owns and operates twelve permitted municipal groundwater wells with very high quality groundwater, drawing water from the deep aquifer in the basal zone of the Tehama Formation. Most City wells are located in the Elmira well field with new wells being sited further north, near Interstate-80. As documented in groundwater monitoring reports for various sites on GeoTracker in the regional vicinity of the project site, approximate depth to groundwater in the area has been encountered at depths varying from 16 to 23 feet below ground surface (bgs) (GeoTracker 2016).

Water Quality

Under Section 303(d) of the 1972 Clean Water Act, States, territories, and authorized tribes are required to develop a list of waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. According to the 2006 list, Alamo Creek, Brazelton Drain, and Barker Slough are not listed under the Clean Water Act 303(d).

Flooding

Flood hazard zones are areas subject to flood hazards that are identified on an official Flood Insurance Rate Map (FIRM), issued by the Federal Emergency Management Agency (FEMA). Flooding can be earthquake induced or the result of intense rainfall. Areas within a 100-year floodplain have a one percent probability of flooding in a given year. The project site is located within a 100-year Zone X floodplain, as defined by FEMA, and depicted on FIRM #06095C0279E. FEMA defines Zone X floodplain as "areas of 0.2 percent annual chance flood; areas of one percent annual chance flood with average depths of less than one foot or with drainage areas less than 1 square mile; and areas protected by levees from one percent annual chance flood."

The California Office of Emergency Services has compiled inundation maps for most dams, showing areas within the potential dam failure inundation zone. According to the General Plan, the northeastern portion of the City is subject to potential dam inundation by the Monticello Dam. Constructed between 1953 and 1957 in Napa County, the Monticello Dam forms Lake Berryessa, which stores over 1.6 million acre-feet of water when full. The project site is located over five miles southwest of the boundary of the potential Monticello Dam inundation area, and therefore is not considered to be at risk from dam flooding.

The California Department of Water Resources (DWR) has an Awareness Floodplain Mapping program to identify pertinent flood areas not mapped under the FEMA National Flood Insurance Program with the intent of identifying all pertinent flood hazard areas by 2015. The State has deemed the areas mapped as prone to flooding. The designation is advisory only and not subject to federal or State regulations. The project site is not located within an awareness floodplain area and therefore, is not considered to be at risk from flooding.

The project site and the City are more than 10 miles away from Suisin Bay, the nearest large body of water, and is therefore is not at risk of tsunamis.

Seiches are waves that oscillate in landlocked water bodies, such as reservoirs, lakes, ponds, swimming pools. There no major landlocked bodies of water within the City or nearby, therefore, the project site is not at risk from seiches.

3.9.2 Methodology

Evaluation of potential hydrologic and water quality impacts was based on a review of FEMA Flood Insurance Rate Maps of the project site, General Plan, General Plan EIR, Southtown Project EIR, and the ECAS. The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations.

3.9.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact HYD-1 Violate any water quality standards or waste discharge requirements?

Impact Analysis

Development of the proposed project would result in the conversion of approximately 0.40 acres of undeveloped, permeable land, resulting in a largely impervious surface with the potential to result in an increased volume and velocity of surface water runoff.

Construction Impacts

Construction activities could result in the degradation of water quality, releasing sediment, oil and greases, and other chemicals to nearby water bodies. Construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Refueling and parking of construction vehicles and other equipment onsite during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, the proposed project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit (GCP), as well as prepare a Storm Water Pollution Prevention Plan (SWPPP) that requires the incorporation of Best Management Practices (BMPs) set forth by the City's Stormwater Management Plan to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The SWRCB mandates that projects that disturb one or more acres must obtain coverage under the Statewide GCP. Since the proposed project would involve development of 1.76 acres, it would be subject to these requirements. The GCP also requires that prior to the start of construction activities the Applicant must file Permit Registration Documents (PRDs) with the SWRCB, which includes a Notice of Intent (NOI), risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations.

In addition, the proposed project must comply with the City's Grading, Erosion, and Sediment Control Ordinance. A Stormwater Control Plan and Grading Plan would be prepared and submitted to the City for review and approval, which would satisfy all City requirements and meet or exceed all requirements in order to reduce impacts from impervious surfaces. Furthermore, the selection, sizing, and preliminary design of stormwater treatment, and other control measures would be required to comply with the requirements of the Regional Water Quality Control Board (RWQCB) Order R2-2009-0074 and Order R2-2011-0083.

Therefore, implementation of Mitigation Measure HYD-1 would reduce the temporary, short-term construction-related drainage and water quality impacts to a less than significant level.

Operational Impacts

Runoff from residential developments typically contain oils, grease, fuel, byproducts of combustion (such as lead, cadmium, nickel, and other metals), roofing, gutter, and trim runoff, as well as fertilizers, herbicides, pesticides, and other pollutants associated with landscaping.

In order to control runoff from roofs, asphalt pavement, concrete curbs, sidewalks, patios and driveways, integrated management practices (IMPs) would be implemented. The proposed project would implement BMPs to provide small-scale treatment, retention, and/or detention is

integrated into site layout, landscaping, and drainage design. Additionally, Section DS 4-13 of the City's Storm Drain Design Standards provides requirements for water quality control. This section requires that storm drain system improvements be designed to prevent any net detrimental change in runoff quality resulting from new development and requires that BMPs be implemented with development projects. Due to the size of the proposed project, the project site would require treatment and source control measures as well as hydrologic modification. Surface flows would be graded to the onsite storm drains which connect to the onsite storm drain lines, and then discharged to the City maintained storm drain system located within Cogburn Circle and then Vanden Road.

With the implementation of the proposed site designs and BMPs the potential operational impact to water quality would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HYD-1: Prior to the issuance of any construction related permits, the City would prepare and submit an NOI to the State Water Board and prepare a SWPPP in compliance with the NPDES GCP requirements. The final drainage plan shall demonstrate the ability of the planned onsite storm drainage to adequately collect onsite stormwater flows in accordance with all applicable standards and requirements by: minimizing impervious surfaces, and directing flows to BMPs; integrating appropriately sized BMPs to minimize impact on local water quality by controlling runoff from erosion and potential contaminants; and incorporating dispersion of runoff in combination with site planning to meet Low Impact Development (LID) requirements.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Impact Analysis

New construction could result in impacts related to groundwater if areas currently available for the infiltration of rainfall runoff are reduced and permeable areas are replaced by impermeable surfaces. The proposed project would result in the development of 1.36 acres of impermeable surface consisting of 15 single-family detached residential units. The proposed project would provide permeable landscaped areas and open land in order for some groundwater recharge to continue.

According to the General Plan, the City's water supply comes from both surface water and groundwater, and is drawn from a variety of reserves. Therefore, the City would serve the project

site with potable water sourced from groundwater supplies. Water supply and water demand for the Southtown Project Area was previously evaluated under the Southtown Project EIR in 2003. Since the 2003 evaluation of the Southtown Project Area, the City's Urban Water Management Plan (UWMP) was updated in July 2015. The 2015 UWMP evaluates the past, current, and projected water use, along with water supply projections through 2040. According to the 2015 UWMP, future water supply will be adequate to offset future water demands during normal, single-dry, and multi-dry years (UWMP 2015).

The City's current water use is less than half of the City's total water allocation. Residential uses make up the vast majority of water use in the City (approximately 70 percent) (General Plan 2015). Based on the US Census Average Household Size estimate of 2.71 persons per household in the City, the proposed project would generate approximately 41 residents.. Therefore, the increased population of approximately 41 residents associated with the proposed project is not anticipated to be a substantial additional source to substantially deplete groundwater supplies, or substantially interfere with groundwater recharge. Impacts would be less than significant.

Level of Significance before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation necessary.

Level of Significance after Mitigation

Less Than Significant Impact.

Impact HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Impact Analysis

The proposed project does not involve alteration of any natural drainage channels or any watercourse. The proposed project would involve site improvements that would require grading and soil exposure during construction. If not controlled, the transport of these materials into local waterways could temporarily increase suspended sediment concentrations. In order to minimize such impacts, implementation of Mitigation Measure HYD-1 would control the treatment and flow of site drainage prior to discharge into the City storm drain system. Therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measures HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Impact Analysis

The proposed project would result in the development of 15 single-family residential units on a 1.76 acre undeveloped lot. The proposed project would result in approximately 1.36 acres of impermeable surface, increasing stormwater runoff. The proposed project would implement Mitigation Measure HYD-1 for treatment and flow of site drainage prior to discharge into the City storm drain system. Treated runoff would be discharged from the BMPs to the existing storm drain on Cogburn Circle. No runoff would be directly discharged to the drainage systems outside of the project site. Therefore, with the implementation of Mitigation Measure HYD-1 and BMPs the proposed project would not substantially increase the rate or amount of surface runoff which would result in flooding on or off-site. Therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Impact Analysis

As required by the City and County stormwater management guidelines, BMPs would be implemented across the project site, during both the construction and operational phases. These BMPs would control and prevent the release of sediment, debris, and other pollutants from entering the storm drain system.

As described in Impacts HYD-1, HYD-2, and HYD-3 above, construction generated runoff would be required to comply with all of the requirements in the State GCP, including preparation of PRDs and submittal of a SWPPP to the SWRCB prior to the start of construction activities. All operational project-generated runoff would be treated prior to discharge from the permanent

BMPs to the storm drain line on Cogburn Circle. No runoff would be directly discharged to the drainage systems outside of the project site.

As part of the Southtown Project EIR, stormwater drainage capacity was assessed. The project site is zoned for CN and originally intended for commercial use. The Applicant is requesting a zone change from CN to RM, and would develop 15 two-story detached residential units. Commercial projects typically result in a greater increase in impermeable surface area, compared to residential land uses, and as a result generate greater surface water runoff. The proposed project would not exceed the surface water runoff volumes previously considered in the Southtown Project EIR (pers. comms. Thomas Phillippi 2016).

The stormwater drainage facilities would be designed to meet all applicable requirements and performance standards as outlined in the City's Stormwater Management Plan. During the City's Design Review of the proposed project, the Applicant would submit Stormwater Drainage Plans for review prior to the issuance of building permits to ensure all storm drains are designed to meet the City's performance standards. In addition, the proposed project would comply with the requirements of the Regional Water Quality Control Board (RWQCB) Order R2-2009-0074 and Order R2-2011-0083.

As a result, with implementation of Mitigation Measure HYD-1 and BMPs, the proposed project is not anticipated to be a substantial additional source of polluted runoff. Therefore, impacts would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact HYD-6 Otherwise substantially degrade water quality?

Impact Analysis

Implementation of BMPs during construction would be in accordance with the provisions of the SWPPP, as identified in Mitigation Measure HYD-1. Implementation of BMPs would minimize the release of sediment, soil, and other pollutants. Operational BMPs would be required to meet the standards set forth by the City's Stormwater Management Plan. The Applicant would be required to submit a SWPPP to the City for approval prior to the start of construction. These requirements include the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system. As such, with the implementation of Mitigation Measure HYD-1 the proposed project would not result in substantial degradation of water quality. Therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Impact Analysis

FIRM Map #06095C0279E indicates that the project site is located in Zone X, which is defined as areas outside of a 100-year flood hazard zone. Alamo Creek is located approximately 0.5 mile north of the project site, and located within a 100-year floodplain. However, the floodplain is contained within the Realigned Alamo Creek channel and does not extend onto the project site. Therefore, the proposed project would not be placed within a 100-year flood zone and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Impact Analysis

The project site is located outside of an identified Flood Hazard Area (either a one percent or 0.2 percent annual chance for flooding), according to FIRM Map #06095C0279E prepared by FEMA. Alamo Creek is located approximately 0.5 mile north of the project site, and located within a 100-year floodplain. However, the floodplain is contained within the Realigned Alamo Creek channel and does not extend onto the project site. As a result, although the proposed project would include 15 residential units, these improvements would not impede or redirect flood flows. Therefore, no impacts associated with placing structures within a 100-year flood hazard area would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Impact Analysis

The northeastern portion of the City is subject to potential dam inundation by the Monticello Dam. The project site is located over five miles southwest of the boundary of the potential Monticello Dam inundation area as shown in the General Plan and therefore, would not be subject to flooding as a result of failure of a dam. The project site is located outside of a 100-year floodplain, as defined by FEMA and depicted on the FIRM Map #06095C0279E. Therefore, no impacts associated with flooding would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-10 Inundation of seiche, tsunami, or mudflow?

Impact Analysis

The project site, primarily because of its location and topographical characteristics, would not be susceptible to seiche, tsunami, or mudflow. Seiche effects locations adjacent to larger water bodies such as lakes or reservoirs; the project site is not located near any such water body. The project site is located over 45 miles from the Pacific Ocean, and over 10 miles from Suisin Bay, which substantially reduces the potential for impacts from tsunami. In addition, based upon the gently sloping topography of the project site, as well as the lack of adjacent hillsides and embankments, the potential for mudflow on the project site would also be greatly minimized. Therefore, no impacts associated with seiche, tsunami, or mudflow would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation necessary.

Level of Significance After Mitigation

No Impact.

3.10 LAND USE AND PLANNING

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

3.10.1 Environmental Setting

Land Use

The proposed project is located in the Southtown Area in southeast Vacaville. The project site is located in a suburban residential community on the northwest corner of the intersection of Vanden Road and Cogburn Circle. With the exception of a temporary trailer, masonry walls, and a power pole, there are no other existing structures on the project site. The project site is a relatively flat undeveloped lot, with a gentle upslope gradient trending toward the eastern portion of the project site. Most of the project site consists of non-native vegetation, grasses, and low-lying plants within the masonry walls that have been maintained for weed abatement. In addition, ornamental trees and low-lying plants have been planted along the public streets within the public right of way on the east, south, and west potions of the project site. There is a six foot decorative masonry wall constructed along the north, east, and west property lines of the project site. The surrounding development is primarily residential with the exception of the project site and the parcel to the east, both designated for neighborhood commercial with requests to change to residential.

Surrounding Area

North
Single-family residences lie immediately north of the project site.

South
Cogburn Circle, a public residential collector street, forms the southern boundary of the project site and separates the project site from the VFD Station 75 and Magnolia Park

West
Vega Way, a public standard residential street, forms the western boundary of the project site with additional single-family residential homes.

East
Vanden Road, a two-lane collector street, forms the eastern boundary of the project site. Undeveloped land lies on the other side for approved commercial as part of Southtown Phase 3.

Land Use Designations

The City of Vacaville General Plan and Zoning Ordinance designate the project site as CN. The Solano County Water Association (SCWA) has prepared a draft Solano Multispecies HCP that covers the project site, but has not been adopted. The draft plan identifies the project site as Urban Zone.

3.10.2 Methodology

Evaluation of potential land use impacts are based on a review of documents pertaining to the proposed project, including the General Plan, the City's Municipal Code, and the Southtown Project EIR, and Section 2.0 - Project Description of this ISMND. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant State and local ordinances and regulations, as well as the City's General Plan goals, policies, and actions.

3.10.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact LU-1 Physically divide an established community?

Impact Analysis

The proposed project consists of abandoning 0.43 acres of City Right of Way to add to an existing 1.33 acre parcel to create the 1.76 acre undeveloped project site, then subdividing and developing the site with 15 single-family residential units and one common parcel. Development of the proposed project would not create any new roadways that would divide existing or proposed communities. The project site is surrounded by three roadways that would connect the proposed project to adjacent neighborhoods thereby, becoming an extension of the existing residential developments surrounding the project site. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact LU-2	**Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

Impact Analysis

The proposed development of single-family detached homes on the site, requires a General Plan Amendment to re-designate the project site from CN to RMD in order to change the zoning from CN to RM. Additionally, a text amendment to General Plan Policy LU-P23.1 is necessary to be consistent with the General Plan. The following discussion evaluates the consistency with proposed amendments and land use compatibility.

General Plan Amendment

The proposed project conflicts with the current General Plan Land Use Designation of Commercial Neighborhood and is proposing to redesignate the project site to RMD. The RMD designation allows for multi-family and single-family housing with the base density of 8.1 units per gross acre, and the maximum potential density of 14.0 units per gross acre. The proposed project would develop 15 units on 1.76 acres resulting in a density of 8.52 units per gross acre, which is within the allowed density range. The proposed residences would be compatible with the surrounding land uses that include residential to the north and west, and a park and fire station to the south. The parcel east of the project site is currently zoned CN. A General Plan amendment application from CN to RMD is underway for this parcel. The parcel could be developed as intended with neighborhood commercial, or residential development if the City Council approves the project. The proposed project would be compatible with either of the land uses. A detailed policy consistency determination is provided in Table 3.10-1.

Zoning Amendment

Development of single-family detached homes in a RM Density district is a Conditional Use that requires a Planned Development (PD) Application for development standards. The proposed project would be subject to the development standards established in the City's municipal code, Residential Development Standards in the Land Use and Development Code (Code Standards) and the Residential Design Requirements for New Single-Family Development. Considering the small size of the parcel, the proposed project requests for deviations from the City's development standards for the RM zoning district with the PD.

The project requests deviations from minimum setbacks, site coverage, and exemption from 1-story home requirements set in the Code Standards for RM zoning district. The site plan includes

the dedication of existing landscaped portions of the public right-of-way along Cogburn Circle, Vega Way, and Vanden Road from the City to the Applicant, in order to provide some additional land for the project to use as onsite setback area. Table 3.10-1 discusses the proposed project's development standards and provides analysis for differing from the zoning standards for residential development.

Table 3.10-1: Municipal Code Requirements and Planned Development

Setback	Municipal Code Requirements (Conditional Use)	Planned Development	Consistency Analysis
Minimum Lot Size	12,000 square feet	57,934.8 square feet Request additional 18,730.8	Consistent. However, subdivided lots range from 1,736 sq. ft. to 2,254 sf. ft
Minimum Front Yard	20 feet	≥ 21.5 feet, with approval of ROW dedication	Privately owned lots do not include front yards. Request setbacks to be measured from the back of the curb to the foremost plane of the structure. Interior units measured by distance from eachother.
Side Yard	20 feet + 5 feet for each additional story	5 feet and 10 feet	Request to meet the side yard setback of the adjacent lots for compatibility.
Site Width	300 feet	>300 feet	Consistent.
Site Depth	100 feet	>100 feet	Consistent.
Max. Building Height	40 feet	29'-7"	Consistent.
Distance Between Structures	10 feet	15 feet	Consistent. Request to meet the side yard setbacks of

Setback	Municipal Code Requirements (Conditional Use)	Planned Development	Consistency Analysis
			the adjacent lots for compatibility.
Rear Yard	20 feet	0 feet	Privately owned lots do not include front yards. Request setbacks to be measured from the back of the structure to the back of the curb on the internal shared/common driveways.
Private Open Space	400 square feet	≥ 400 square feet	Consistent.
Housing mix	Mix of one- and two- story	All two-story	A two-story structure would provide more floor area considering the smaller lot sizes.
Max Site Coverage	30%	33% of entire project site	Request to determine lot coverage based on percent of entire 1.76 acres that is covered by structures (homes plus patios), similar to that of a multifamily site.
Notes: Setbacks are calculated from the face of the curb.			

The project site is a suitable location for a residential development. Similar residential uses currently exist within close proximity of the project site. However, because the site is small, the proposed project requests the City to abandon public right of way and requests variations to the development standards to be able to fit 15 single-family detached homes. Pursuant to Municipal Code 14.09.111.060, the Planned Development application allows the project to make such requests as follows:

A. Alternate standards may be approved if such standards are offset by the application of other improvements or increased standards elsewhere in the project which results in an overall benefit to the project.

1. Standards which may be modified include, but are not limited to, site area and minimum lot dimensions, site coverage, yard area and setbacks, heights of structures, distances between structures, off-street parking, off-street loading facilities, and landscaping.

Policy Consistency

The proposed project would preclude commercial development at the site, and develop lots smaller than the adjacent residences; thereby, conflicting with the General Plan Policy LU-P23.1. Amendments to Policy LU-P23.1 have been proposed to remove the commercial requirement and to exempt the project site from compliance with lot size requirements for new development that would meets/exceed standards of adjacent development. A detailed policy consistency determination is provided in Table 3.10-2.

Energy and Conservation Action Strategy

The City of Vacaville has adopted its ECAS as means of providing mitigation measures to be applied to projects with the goal of reducing GHG emissions from communitywide and municipal sources. The ECAS is to be utilized for tiering and streamlining future development within Vacaville, pursuant to CEQA Guideline Sections 15152 and 15183.5. In order to demonstrate that an individual development project complies with the ECAS, the City developed a New Development Workbook to assist in the review process. Refer to Section 3.7, Greenhouse Gases for proposed project's consistency with applicable measures in the ECAS. With the stated mitigation measures GHG-1 through GHG-3, from AIR and GHG sections, and LU-1, the proposed project would not conflict with an applicable plan and ECAS policies; therefore, impacts would be considered less than significant.

Table 3.10-2: General Plan and ECAS Consistency Analysis

General Plan Element	Goal, Policy, or Action	Consistency Analysis Summary
Land Use	**Goal LU-1.** Preserve, promote and protect the existing character and quality of life within Vacaville	The proposed project would provide a high-quality, well planned residential development that will be compatible with the surrounding residential uses. This is consistent with the objective of preserving and promoting the existing character of the neighborhoods and the City.
	Policy LU-P1.5. With the exception of Priority Development Areas, require that infill projects be designed to complement	The project site is surrounded by residential development. The proposed project would develop

General Plan Element	Goal, Policy, or Action	Consistency Analysis Summary
	the neighborhood and surrounding zoning with respect to the existing scale and character of surrounding structures, and blend, rather than compete, with the established character of the area.	residential uses on a site previously planned for neighborhood commercial uses. The proposed houses will be two stories and would be designed to be compatible with the adjacent developments. This will ensure consistency with this policy of compatibility with surrounding neighborhood.
	Goal LU-23.1. Require that the South Vanden Area, including the Southtown and Moody Project Areas, facilitate the development of a range of housing densities and opportunities, pedestrian and bicycle friendly design, ~~neighborhood commercial sites,~~ and recreational and neighborhood facilities, by including the following requirements: • A network of landscaped pedestrian/bike corridors shall connect key elements of the area, such as the community park and arterial streets. • New development adjacent to existing homes within the city limits shall match or exceed the size, character, and quality of adjacent homes and lots. This applies only to the exterior of the Southtown and Moody projects and not internally within said projects. • All new residential development shall conform to the Residential Design Requirements for New Single Family Development. • The Southtown project area will include a range of housing types and densities and attached, detached, and cluster housing. • Land shall be reserved for community uses such as private schools, membership organizations, day care centers, and senior centers. • A financing mechanism for all public facility improvements shall be established before	The proposed project would develop 15 residential units and will be consistent with this policy as explained below: • The proposed project would install landscaping for the front yard and corner lot street side yard for all residential units to enhance the project site. Final Landscape Plans would be reviewed and approved by the Community Development Director. This will ensure consistency with this policy. • Four of the proposed lots on the northern boundary are smaller than the adjacent residential lots to the north. However, the policy has been amended to exclude development within the Southtown Area from this requirement. Therefore, the proposed project is not inconsistent with this policy. • The proposed project has been designed in compliance with the new residential development standards as described in Section 2.0, Project Description, and therefore, is consistent with this policy. • The proposed project would develop 15 detached single-family homes and the scale

General Plan Element	Goal, Policy, or Action	Consistency Analysis Summary
	development occurs. • Nut Tree Road and Vanden Road shall be widened to the City standard width through the project sites for all projects that front on these streets. • Leisure Town Road shall be widened and improved to the standards for the Jepson Parkway along the frontage of all projects that abut Leisure Town Road. • Foxboro Parkway shall be extended between Nut Tree Road and Vanden Road. The extension will be completed prior to the reconstruction and reconfiguration of Vanden Road. • A 1-acre site for a future fire station site shall be reserved within the Southtown project area. • A site within the Vanden Road loop shall be reserved for a park. • ~~A multi-family project on Leisure Town Road shall begin construction in the first phase of development within the Southtown project area.~~ • Public areas adjacent to Alamo Creek shall be landscaped to enhance the view of the creek channel, within the requirements of Solano County Water Agency. • Different development projects within the Southtown project area shall coordinate their respective roads, bike paths, landscape corridors, and design standards to create a unified sense of place and identity. • ~~Commercial buildings shall be no more than an average of 30 feet in height, and be designed to front on the sidewalk, with parking at the rear of the property, when feasible, so as to enhance neighborhood aesthetics and to encourage pedestrian-friendly design.~~ • Infrastructure master plans for	of the project does not allow for variation in density, or housing configuration. However, the project is part of the Southtown Area and would add to range of housing types in the Southtown Area. • Not applicable. • The Applicant would be required to pay a development impact fee for public facilities and will be consistent with this policy. • Not applicable. • Not applicable. • Not applicable. • Not applicable. • Not applicable. • The project site does not lie adjacent to Alamo Creek. • The proposed project will adhere to development standards and municipal code and will be subject to design review and approval of a landscape plan. • The proposed project would not require any new infrastructure master plan and would connect to existing utilities in the project area. The Applicant will submit Stormwater Drainage Plans prior to the issuance of building permits to ensure all storm drains are designed to meet the City's performance standards. • See above Not applicable

General Plan Element	Goal, Policy, or Action	Consistency Analysis Summary
	sewer, water, storm drain, and traffic improvements shall be prepared prior to or in conjunction with the processing of subdivision maps for all development within the South Vanden areas, including the Southtown and Moody project areas. • Prior to the approval of any subdivision applications, the developers shall assure that all required domestic water supply and distribution systems, wastewater collection and treatment facilities, stormwater management facilities, and roadway segment and intersection improvements will be incorporated into the final project plans. • The lands to the south of the Southtown and Southtown Commons project areas will be subject to subsequent General Plan Amendments, Prezonings, and other prerequisites to annexation.	
Parks and Recreation	**Goal PR-1**. Develop and maintain a high-quality public park system that provides varied recreational opportunities for city residents, workers, and visitors.	Project is part of the Southtown developer and would be subject to the standard park DIF fees and Southtown assessment and maintenance districts. Additionally, the project requests to pay an additional fee for increased enhancements to Magnolia Park in lieu of providing onsite recreation/open space.
Notes: 1. The consistency determination only includes policies provided by the City.		

Although the proposed project would have different setbacks than that required under the RM zoning district and that from the adjacent zoning, the proposed project would be generally compatible with the intent of the proposed General Plan and Zoning designations. A design review is required for the house plans and would help the project's compatibility with applicable zoning and General Plan requirements. Therefore, the proposed project's conflicts with the land

use plan, policy, and regulation would be less than significant with the approval of the variations to development standards through the Planned Development application.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM LU-1: Implementation of the following multi-part mitigation measure is required to reduce the GHG emissions and be consistent with the applicable plan and policies.

- Prior to construction, the project Applicant shall demonstrate that all water use and efficiency measures comply with City Codes.
- During construction, the Applicant shall ensure that at least 50 percent diversion (i.e. reuse or recycling) of non-hazardous construction waste from disposal, consistent with CALGreen - the Statewide Green Building code is implemented.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact LU-3 Conflict with any applicable habitat conservation plan or natural communities conservation plan?

Impact Analysis

The City falls within the jurisdiction of the Solano Multispecies HCP. CN. The SCWA is currently preparing the Solano Multispecies HCP that covers the project site. The draft plan identifies the project site as Urban Zone but it has not been officially adopted. Based on the review of the draft HCP, the project site is not located within a protected conservation area. Refer to Section 3.4, Biological Resources, for further discussion. As such, impacts would be less than significant. CN.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.11 MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.11.1 Environmental Setting

According to the U.S. Geological Survey, the Vacaville Planning Area contains limited mineral resources that are being extracted. Southwest of the project site in the vicinity of Cement Hill, limestone deposits show evidence of some historic use. Stone quarries in the Vaca Mountains produced dimensioned and ornamental stone. The western hills contain sandstone and conglomerates that may be used for sands, gravel, and stone; however, none of these resources are currently being mined (General Plan 2015).

3.11.2 Methodology

The following analysis is based on a review of the General Plan, General Plan EIR, and available maps and documents published by the CDC Office of Mines Reclamation Map Viewer. The following impact discussions consider the effect of the proposed project related to mineral resources.

3.11.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact MIN-1 Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?

Impact Analysis

No mineral extraction activities exist on or near the project site and mineral extraction is not included as a part of the proposed project. According to the CDC Office of Mine Reclamation Map Viewer and the General Plan, the project site does not contain any known mineral resources. Additionally, the CDC Mineral Resources Map classifies the project site as a MRZ-1

indicating no known valuable minerals or other natural resources that would be of value to the region are located on or near the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact MIN-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Impact Analysis

As mentioned in Impact MIN-1, the project site is not identified in the General Plan or by the CDC as containing valuable mineral resources. The proposed project includes a land use designation from CN to RM, neither of which allow for mineral resource recovery. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.12 NOISE

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

3.12.1 Environmental Setting

Characteristics of Noise

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as

this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for a number of various sound level metrics, including the day/night sound level (Ldn) and the Community Noise Equivalent Level (CNEL), both of which represent how humans are more sensitive to sound at night. In addition, the equivalent continuous sound level (Leq) is the average sound energy of time-varying noise over a sample period and the Lmax is the maximum instantaneous noise level occurring over a sample period.

Existing Ambient Noise Levels

The existing noise environment in a project area is characterized by the area's general level of development due to the high correlation between the level of development and ambient noise levels. Areas which are not urbanized are relatively quiet, while areas which are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities. According to Table 3.12-1 and Figure 3.12-1, given the residential nature of the project area, ambient noise levels are expected to be in the range of 50 to 60 Ldn.

The City of Vacaville is exposed to noise generated by traffic on Interstate 80 and Interstate 505. To a lesser extent, noise is also generated along major arterial roads such as Elmira Road, Vaca Valley Parkway, Alamo Drive, Peabody Road, and Browns Valley Road. Traffic noise depends primarily on traffic speed (tire noise increases with speed) and the proportion of truck traffic (trucks generate engine, exhaust, and wind noise in addition to tire noise). Changes in traffic volumes can also have an impact on overall traffic noise levels. For example, a doubling of traffic volumes results in a 3 dB increase in noise levels. Existing roadway noise contours are shown in Figure 3.12-1. As shown in Figure 3.12-1, the existing noise levels at the proposed project site are below 60 Ldn (City of Vacaville 2015).

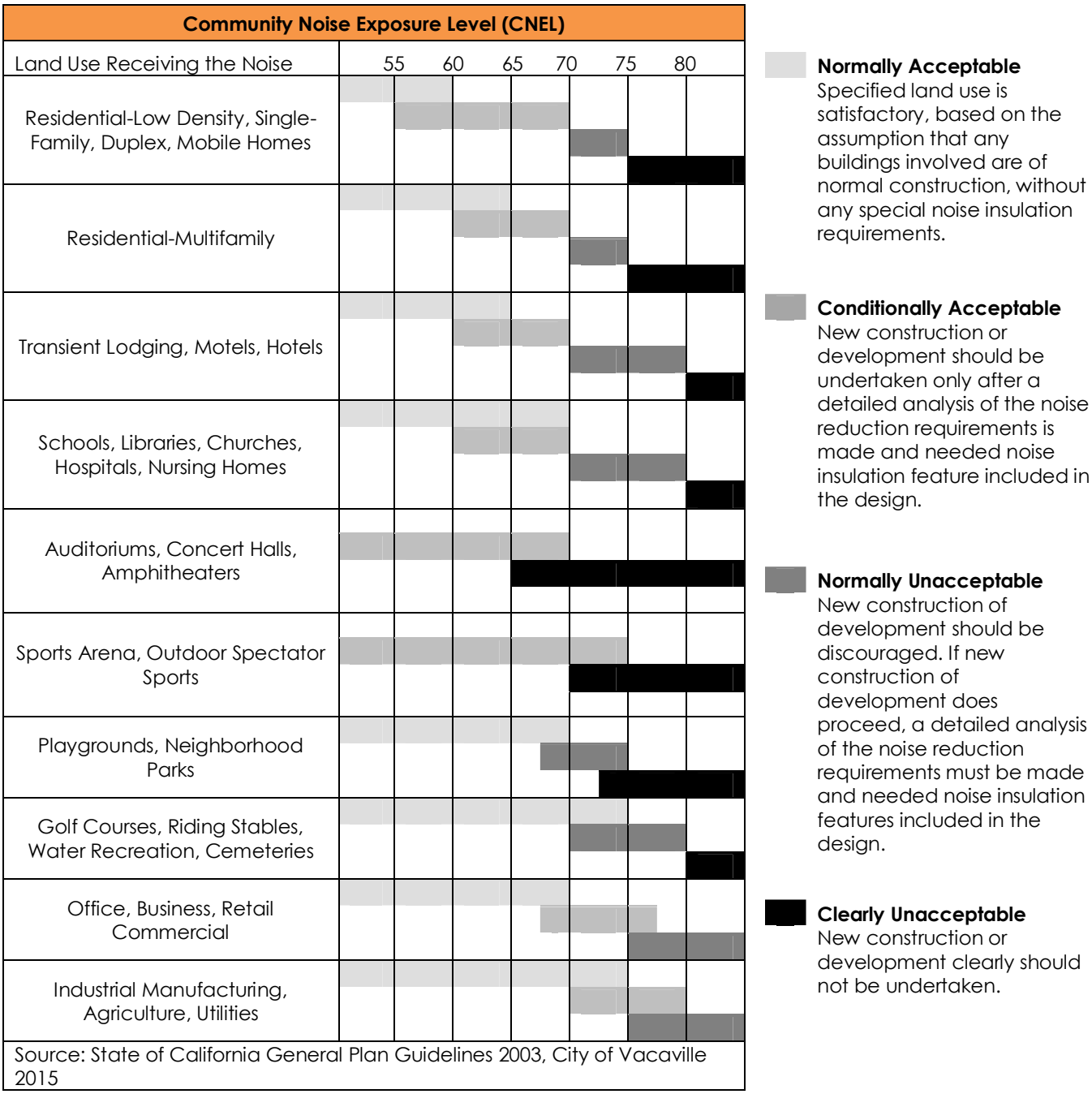
Rail operations are a source of noise in Vacaville. Factors that influence the overall impact of railroad noise on adjacent uses include the distance of buildings from the tracks, surrounding land topography, frequency of train operations, and the lack or presence of sound walls or other barriers between the tracks and adjacent uses.

According to the City of Vacaville General Plan, the train activity along the Union Pacific rail line bordering the southeast portion of the city includes Amtrak passenger trains and freight trains. Noise from existing train operations are estimated to be up to 76 dBA Ldn at 50 feet from the railroad centerline without warning horns, and up to approximately 91 dBA Ldn at 50 feet from at-grade railroad crossings when warning horns are sounded. The contributions to the existing noise contours from current rail operations are shown in Figure 3.12-1. The proposed project is located outside the 60 – 65 Ldn noise contours generated by the Union Pacific rail line.

For this project site, another noise generator will be from the fire station directly across Cogburn Circle. This is an unusual noise generator in that noise will be intermittent as emergency calls for service require.

Aircraft overflights contribute to the ambient noise levels from the Travis Air Force Base in the project area. However, the project site is outside the significant noise contours, per the General Plan Figure NOI-2.

Table 3.12-1: Noise and Land Use Compatibility Matrix



Source: State of California General Plan Guidelines 2003, City of Vacaville 2015

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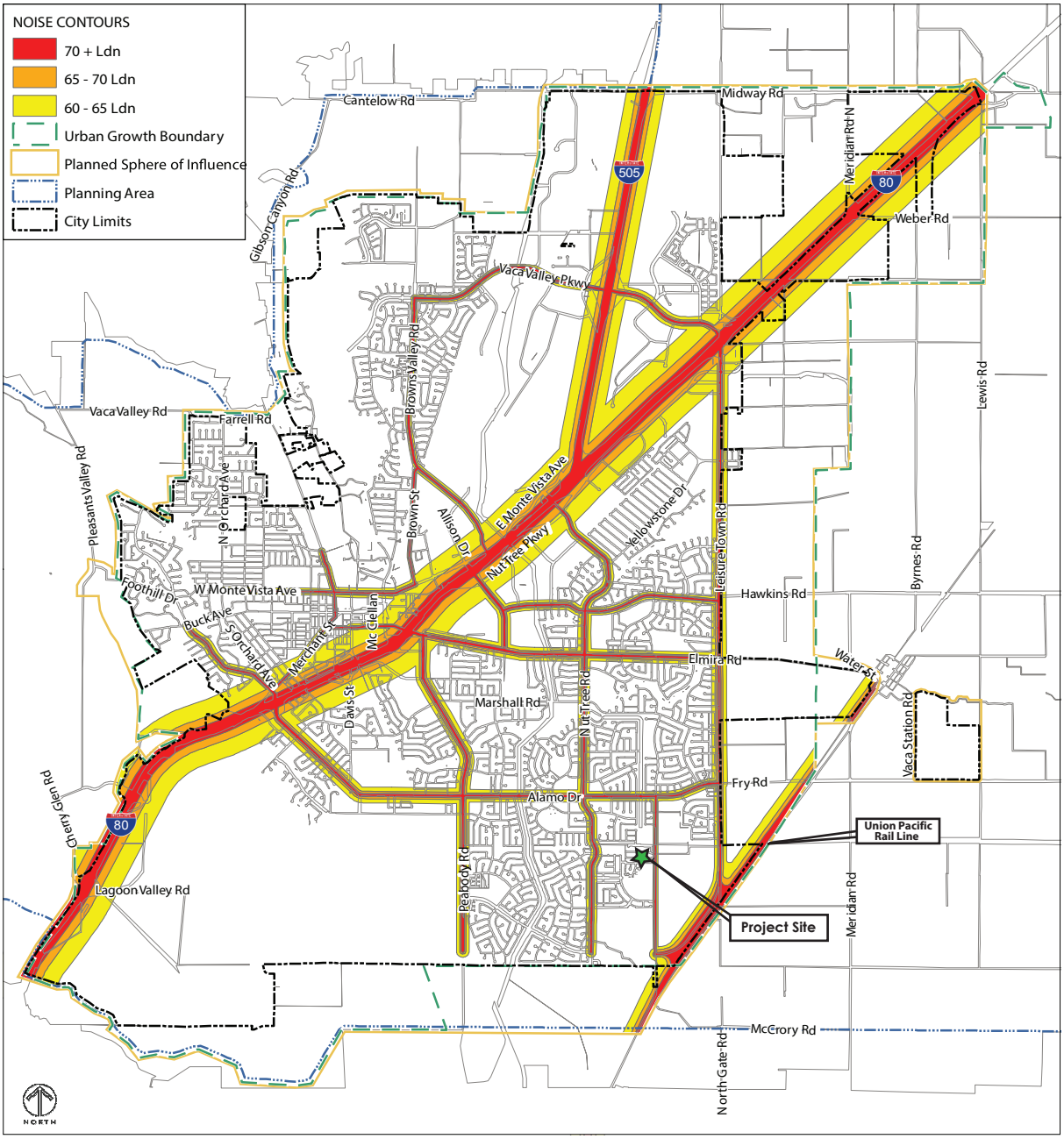

Source: LSA Associates, 2012.

Note: Noise Contour data provided by the City of Vacaville, General Plan. Not to Scale

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Vacaville, California

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Figure 3.12-1. Existing Noise Contours

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Vibration Standards

Vibration is like noise such that noise involves a source, a transmission path, and a receiver. While related to noise, vibration differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system that is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities. The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and proposed project operations are addressed as potential noise impacts associated with the proposed project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.12-2 summarizes the general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v. Table 3.12-3 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v).

Table 3.12-2: Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: California Department of Transportation 2004.

Table 3.12-3: Guideline Vibration Damage Potential Criteria

Structure and Condition	Maximum PPV (in/sec)	Transient Sources Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structure	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: California Department of Transportation 2004.

Noise Regulatory Framework

The Noise Element of the City of Vacaville General Plan identifies land use compatibility noise standards for noise-sensitive land uses affected by transportation and non-transportation noise sources. As shown in Table 3.12-1, for noise sensitive land uses, including residential land uses, that are affected by transportation noise sources, the "normally acceptable" exterior and interior noise level is 60 dBA Ldn/CNEL and 45 dBA Ldn /CNEL, respectively. Exterior noise levels of up to 75 dBA Ldn /CNEL for residential land uses is considered "conditionally acceptable" provided needed noise mitigation measures have been incorporated and interior noise levels are maintained within "normally acceptable" levels. The City's exterior noise standards for residential uses exposed to non-transportation noise sources are 50 dBA Leq and 70 dBA Lmax during daytime hours and 45 dBA Leq and 65 dBA Lmax during nighttime hours. Maximum acceptable interior noise standards for residential uses exposed to non-transportation noise sources are 45 dBA Leq during the daytime hours and 35 dBA Leq during the nighttime hours (General Plan 2015). The City has adopted policies in the General Plan to reduce exposure of unacceptable noise levels to the residents of the City. The following policies are applicable to the proposed project:

Policy NOI-P4.1 Preclude the generation of annoying or harmful noise through conditions of approval on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

Policy NOI-P4.2 Require the following construction noise control measures:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Limit hours of operation of outdoor noise sources through conditions of approval.

City of Vacaville Noise Ordinance Chapter 8.10.030 Nuisance 20. Noise from Construction Activities.

"No construction or grading equipment shall be operated nor any outdoor construction or repair work shall be permitted within 500 feet from any occupied residence between dusk (one-half hour after sunset) and 7:00 a.m. Monday through Saturday, and no such construction or grading activities shall be allowed on Sundays or holidays except as provided for herein:

> *c. A request for an exception to the permitted construction hours and days may be granted by the Director for emergency work, to offset project delays due to inclement weather, for 24-hour construction projects, or other similar occurrences."*

Sensitive Receptors

The closest noise receptors consist of residential properties located immediately adjacent to the north and west of the project site.

3.12.2 Methodology

Potential noise impacts associated with the proposed project were calculated and analyzed using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). The RCNM is used as the FHWA's national standard for predicting noise generated from construction activities. The RCNM analysis includes the calculation of noise levels (Lmax and Leq) at incremental distances for a variety of construction equipment. The spreadsheet inputs include acoustical use factors, Lmax values, and Leq values at various distances depending on the ambient noise measurement location (Appendix G). For this analysis, it was assumed that a worst-case noise scenario for construction activity would entail the operation of the three noisiest pieces of equipment (grader, dozer, and compactor) simultaneously. Noise generated from operational activities would be attributed to similar equipment used during construction, such as pneumatic tools and air compressors, fork lifts, welders, and flatbed trucks. Therefore, the RCNM results were used to estimate noise generated from operational activities.

Additionally, vehicular noise along major roadways was modeled to estimate existing noise levels from mobile traffic. The existing roadway noise levels were assessed using the FHWA TNM. The FHWA model is based upon reference energy mean emission levels (REMELS) for automobiles, medium trucks (two axles) and heavy trucks (three or more axles), with

consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The estimated trip generation rates based off of the vehicle counts calculated during the traffic survey were entered into the FHWA TNM in order determine the existing noise conditions at sensitive receptors identified along each of the roadway segments. Additional information regarding the methods of the traffic survey can be found in Section 3.16, Transportation and Traffic.

3.12.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact NOI-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact Analysis

Short-Term Construction Noise Impacts

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project site. The associated short-term noise increase along Vanden Road and at the nearest sensitive receptors would be perceptible; however, such a noise increase would be instantaneous and short-term. Based on the CalEEMod default values used in the Air Quality modeling for the proposed project, see Section 3.3, it was assumed that construction activities would generate approximately 35 vehicle trips per day, this includes a combination of automobiles, medium trucks, and heavy trucks. The roadway noise levels from construction workers and equipment hauling were assessed using the FHWA TNM, these were then compared to the existing roadway noise levels to determine potential impacts from construction traffic noise, see Table 3.12-4. As shown in Table 3.12-4, the noise increase from construction traffic for the proposed project is estimated to be approximately 0.7 dBA. As discussed in Section 3.12.1, Environmental Settings, audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments; therefore an increase in traffic noise of 0.7 dBA would not change the existing traffic noise conditions. Short-term, construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant.

Table 3.12-4: Construction Traffic Noise along Vanden Road

Roadway	Existing Traffic Noise Levels	Project Construction Traffic Noise Levels	Change in Noise Levels
Vanden Road (between Project site and Alamo Drive)	61.6 dBA	62.3 dBA	**0.7**

The second type of short-term noise impact is related to noise generated during construction. Construction activities would include excavation activities and grading, foundation work, building construction, and paving. Each construction stage has its own mix of equipment and, consequently, its own noise characteristics. These various construction operations would change the character of the noise generated at the project site and, therefore, the ambient noise level as construction progresses. The loudest phases of construction include excavation, building construction, and grading phases, as the noisiest construction equipment is earthmoving and grading equipment. Throughout construction, the following types of equipment would be used (with their estimated maximum operational noise level measured at 25 feet from the operating equipment).

Table 3.12-5: Summary of Federal Highway Administration Roadway Construction Noise Model

Source	Distance to Nearest Sensitive Receptor	Sound Level at Residence		
		Lmax	Acoustical Use Factor (%)	Leq
Backhoe	25 feet	83.6	40	79.6
Compactor (ground)	25 feet	89.3	20	82.3
Crane	25 feet	86.6	16	78.6
Concrete Mixer Truck	25 feet	84.8	40	80.8
Compressor (air)	25 feet	83.7	40	79.7
Bulldozer	25 feet	87.7	40	83.7
Excavator	25 feet	86.7	40	82.8
Front End Loader	25 feet	85.1	40	81.2
Flat Bed Truck	25 feet	80.3	40	76.3
Generator	25 feet	86.7	50	83.6
Grader	25 feet	91	40	87
Paver	25 feet	83.2	50	80.2
Pickup Truck	25 feet	81	40	77
Pneumatic Tools	25 feet	91.2	50	88.2
Welder / Torch	25 feet	80	40	76
Tractor	25 feet	90	40	86

Source	Distance to Nearest Sensitive Receptor	Sound Level at Residence		
		Lmax	Acoustical Use Factor (%)	Leq
Source: Stantec 2016, Federal Highway Administration 2006				

A reasonable worst-case noise condition for general construction activity is that a grader, pneumatic tools, and tractor would operate simultaneously. This represents a conservative scenario, as it assumes that all three pieces of equipment would be operating at the same time and same place. Construction would occur in sequential phases. Thus, in reality, it is not likely that the three loudest pieces of equipment would be operating simultaneously at the exact location of the project site closest to the nearest residence. Nevertheless, the RCNM calculated that this scenario would result in a combined noise level of 91.2 dBA-Lmax and 92.0 dBA-Leq at 25 feet.

Mitigation Measure NOI-1 would be implemented to reduce construction noise in the proximity of sensitive receptors. This would include the construction of temporary barriers where construction noise levels have the potential to exceed the maximum exterior residential noise standard. Specifically, barriers would be installed along the north boundary of the project site where the nearest sensitive receptors are located, approximately 25 feet from construction activities. Although noise levels could range into the clearly unacceptable range, as defined on Table 3.12-1, increases in noise levels from construction activities would be temporary and construction activities would be limited between 7:00 a.m. and 6.00 p.m., Monday through Friday, on weekdays within 300 feet of occupied dwellings between 8:00 am and 5:00 p.m., and between 9:00 a.m. and 5:00 p.m. on weekends, in accordance with the City's Municipal Code.

In conclusion, construction noise would be short-term and intermittent. Furthermore, implementation of Mitigation Measure NOI-1 would ensure compliance with the City's construction noise standards (including construction BMPs and restrictions on permissible hours of construction); therefore, impacts would be less than significant with mitigation incorporated.

Long-Term Operational Noise Impacts

As part of the proposed project, the Applicant is proposing to change the General Plan designation of the project property from Neighborhood Commercial to Residential Medium Density. As shown in Table 3.12-2, the normally acceptable community noise exposure level for residential, single-family is 60 dBA, whereas the normally acceptable community noise exposure level for commercial properties is 70 dBA. Therefore, changing the land use designation of the proposed project parcel would significantly decrease the future potential for noise exposure to the surrounding existing residential properties.

It is not anticipated that noise levels at the project site would expose the future residents to noise levels exceeding the City threshold of 60 dB Ldn for exterior noise. The proposed project would be located outside the 60-65 dBA noise level contours of typical noise generating uses, including outside the noise contours for the Union Pacific rail line, as identified by the City of Vacaville in the General Plan, Figure 3.12-1. Substantial noise would be generated by the fire station located across Cogburn Road from the proposed project. The operation of emergency vehicles would generate temporary noise impacts of 95 dBA when the sirens are on. The National Fire Protection Associated (NFPA) sets a maximum of 122.2 dBA for fire sirens as needed at times of emergency. However, this noise would be intermittent and the operation of emergency vehicles is expected as a part of safety services for urban development. The City has established a threshold of 45 dBA Ldn for indoor noise levels for designated residential land uses. Modern construction materials, consistent with the California Building Code (CBC), typically provide an exterior-to-interior noise level reduction of 25 to 30 dB with all exterior openings sealed (California Department of Transportation 2013). Therefore, based on the construction design, it is not anticipated that interior noise levels would exceed the City's threshold, resulting in a less than significant impact.

Additionally, the proposed project's contribution to traffic noise increase is predicted to be minimal. The traffic study prepared by Stantec, indicates that the existing average daily traffic (ADT) volume on Vanden Road is approximately 4,700 vehicles (calculated based on intersection counts), and the existing peak hour traffic volume is approximately 400 to 600 vehicles per hour. As discussed in Section 3.16, Transportation and Traffic, a total of 183 weekday daily trips would be generated by the operation of the proposed project. Of that total, 20 trips (5 inbound and 15 outbound) would be generated during the a.m. peak hour and 19 (12 inbound and 7 outbound) trips would be generated during the p.m. peak hour. The data was used as an input to the FHWA TNM to assess potential long-term increases in traffic noise from the proposed project. The results of the model indicated that traffic noise from the proposed project would increase by 0.1 dBA, see Table 3.12-6. As discussed above, a noise level increase of 0.1 dBA would be inaudible to the human and it is anticipated that impacts from traffic noise would be less than significant.

Table 3.12-6: Operational Traffic Noise along Vanden Road

Roadway	Existing Traffic Noise Levels	Project Operational Traffic Noise Levels	Change in Noise Levels
Vanden Road (between Project site and Alamo Drive)	61.6 dBA	61.7 dBA	**0.1 dBA**

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM NOI-1: Implementation of the following multi-part mitigation measure is required to reduce the potential construction period noise impacts.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Construction activities shall be limited to daylight hours between 8 a.m. and 6 p.m. Limit hours of operation of outdoor noise sources through conditions of approval.
- If construction activities are required outside of the daytime working hours allowed within the conditions of approval, the City would notify residents 48 hours in advance. If after-hour construction is required due to an emergency, the City would notify nearby residents immediately.
- The construction contractor would prohibit unnecessary idling of internal combustion engines.
- Where necessary noise-reducing enclosures or temporary barriers would be used around noise-generating equipment. Where feasible existing barrier features (terrain, structures) would be used to block sound transmission especially where sensitive receptors are located less than 50 feet from construction activities and construction noise levels are expected to exceed the maximum exterior noise standard.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact NOI-2 Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Impact Analysis

During construction of the proposed project, equipment such as cranes, excavators, graders, loaders, backhoes, and bulldozers may be used as close as 50 feet from the nearest sensitive receptor. Construction equipment that would be used during project construction would generate vibration levels between 0.003PPV and 0.089 PPV at 25 feet, as shown below in Table 3.12-7. All of the groundbourne vibration levels are below the Federal Transit Administration (FTA) vibration threshold at which human annoyance could occur of 0.10 PPV. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. Therefore, construction vibrations are not predicted to cause damage to

existing buildings or cause annoyance to sensitive receptors. As such, implementation of the proposed project would have a less than significant impact related to vibration.

Table 3.12-7: Vibration Source Levels for Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 Feet	Peak Particle Velocity at 50 Feet	Peak Particle Velocity at 100 Feet	Threshold at which Human Annoyance Could Occur	Potential for Proposed Project to Exceed Threshold
Large Bulldozer	0.089	0.031	0.011	**0.10**	**None**
Loaded Trucks	0.076	0.027	0.010	**0.10**	**None**
Small Bulldozer	0.003	0.001	0.000	**0.10**	**None**
Auger/Drill Rigs	0.089	0.031	0.011	**0.10**	**None**
Jackhammer	0.035	0.012	0.004	**0.10**	**None**
Vibratory Hammer	0.070	0.025	0.009	**0.10**	**None**
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006					

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact NOI-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact Analysis

As discussed in the long-term operational impact discussion in Impact NOI-1, it is not anticipated that implementation of the proposed project would expose future residents to noise levels exceeding the City threshold of 60 dB Ldn for exterior noise. Additionally, the proposed project's contribution to traffic noise is predicted to be minimal and would not permanently result in an increase in ambient noise levels within the project vicinity. Traffic noise after implementation of the proposed project would not result in a perceptible permanent increase in ambient noise

levels at the project site. Therefore, noise levels with implementation of the proposed project would result in a less than significant impact. Periodic noise increases associated with construction of the proposed project are discussed in Impact NOI-1 and Impact NOI-4.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact NOI-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact Analysis

During the construction of the proposed project, including grading and building construction, noise from construction activities would add to the noise environment in the project area. Table 3.12-4 lists equipment that is expected to be used along with noise levels generated from the FHWA RCNM (Federal Highway Administration 2006). Lmax sound levels at the nearest sensitive receptor (25 feet) are shown along with the typical acoustic use factor. The acoustical use factor is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its loudest condition) during construction and is used to estimate Leq values from Lmax values. For example, the Leq value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the Lmax value.

The nearest sensitive receptors to the project site are single-family residences located approximately 25 feet north of the project site. Due to the close proximity of the residences, the residents could potentially be affected by construction noise, or by operational noise levels generated by the proposed project construction above the City noise standard. Mitigation Measure NOI-1 would be implemented to minimize impacts from construction generated noise. Therefore, impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure NOI-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact NOI-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Impact Analysis

The nearest public airports to the project site are the Nut Tree Airport and the Travis Air Force Base Airport, located approximately 3.5 miles northwest and approximately 3.8 miles south from the project site, respectively. There is one private airport, Vaca Valley Hospital Heliport, located approximately 2.02 miles northwest of the project site (Tollfree 2015). The project site falls outside the Area of Influence of the Nut Tree Airport as defined in the Nut Tree Airport Land Use Compatibility Plan and presented in the City's General Plan (Solano County 1988). The project site is located within land use Zone D of the Travis Air Force Base Land Use Compatibility Plan (Solano County 2002). Zone D includes all locations beneath any of the Travis Air Force Base airspace protection surfaces delineated in accordance with Federal Aviation Regulations Part 77. Compatibility Zone D does not place any restrictions on the types of land uses allowed, with the exception of land uses that could cause hazard to flight, such as physical, visual, and electric forms of interference and land uses that attract birds. Any object over 200 feet tall requires airspace review. Although the project would be located in the Travis Air Force Base Land Use Compatibility Plan Zone D, it is located outside of the noise level contours developed for the Travis Air Force Base. Therefore, it is not anticipated that the future residents would be impacted by noise generated from the Travis Air Force Base.

Though the project site is located beyond the Area of Influence of the Nut Tree Airport, it is located within land use Zone D of the Travis Air Force Base Airport; thus, the proposed project would be subject to a determination of consistency from the Solano County Airport Land Use Commission (ALUC) to ensure the proposed project is compatible with the ALUC Plan, in accordance with California State Public Utility Code, Section 21670 et seq. (Solano County 1988). The Solano County ALUC guides airport development in the County and governs the area surrounding airports to prevent issues relating to noise and safety.

As such, the proposed project would not expose persons residing or working in the project vicinity to excessive aviation noise. Impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than Significant Impact.

Impact NOI-6 For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Impact Analysis

A private airstrip, Vaca Valley Hospital Heliport, is located approximately 2.02 miles northwest of the project site (Tollfree 2015). It is not anticipated that the people residing at the project site would be exposed to excessive noise levels generated by emergency helicopters accessing the hospital. The project site is not located within the boundaries of an airport land use plan. As such, the proposed project would not expose persons residing or working in the project vicinity to excessive aviation noise. No impacts would occur.

Level of Significance Before Mitigation

Less than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than Significant Impact.

3.13 POPULATION AND HOUSING

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

3.13.1 Environmental Setting

Over the past several decades, Vacaville has grown from a small, rural town into a moderate-sized city. According to the U.S. Census, the City had a population of 92,428 in 2010, making it the third largest city in Solano County (U.S. Census Bureau 2016). This population has grown by 5.07 percent since 2010 to a total number of 97,114 people (Vacaville 2016). Association of Bay Area Governments (ABAG) projects that Vacaville's population will grow to a total of 111,100 by 2035, consistent with the overall growth rate projected for Solano County (General Plan 2015). Based on the most recent General Plan Update for the City, a citywide population growth of 26,045 is projected for 2035 under the General Plan, which exceeds the ABAG population growth projection of 11,400 (City of Vacaville 2015). The projected population growth for 2035 accounts for the reduction in population due to amendments to the General Plan and General Plan EIR.

The project site is located in the Southtown Project Area, considered a new residential growth area to accommodate approximately 1,410 housing units. Based on the Southtown Project EIR, development of the Southtown Project Area will result in an approximately 3,500 to 3,900 person increase in the population of the Vacaville area.

3.13.2 Methodology

The following analysis is based on general descriptions in the General Plan, General Plan EIR, Southtown Project EIR, and Section 2.0, Project Description, of this ISMND. Evaluation of potential population, housing, and employment impacts of the proposed project was based on data obtained from the U.S. Census, the California Department of Finance, and documentation from the City. The following impact discussions consider the effect of the proposed project related to employment, population and housing in the City.

3.13.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact POP-1 Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact Analysis

The proposed project would involve the development of 15 two-story single-family residential units. Using the U.S. Census average household size of 2.71 persons per dwelling unit in the City, the proposed project would increase the population by as much as 41 persons. This represents an increase of approximately one percent over the population estimated in the Southtown Project. Because the proposed project would result in a small incremental amount of growth, compared with growth in the neighborhood and the City, the impact of population growth generated by the increase in the number of residential units on the project site is not considered to be substantial. Additionally, there have been numerous revisions to the originally proposed land uses in the Southtown Project Area, with nearly all of the changes resulting in a reduction in the number of units, therefore, the one percent increase is further inconsequential.

Rezoning of the project site from CN to RM may result in similar rezoning of surrounding properties, thereby inducing population growth. However, the project site is surrounded by residential development to the north, and west, Magnolia Park on the south, and an undeveloped parcel zoned CN to the east. An application has been submitted to the City requesting an amendment to the General Plan and Zoning to build 17 dwelling units on the parcel to the east. The project site is located in the Southtown Project Area and both existing and proposed land uses surrounding the parcel are primarily residential. Therefore, implementation of the proposed project would not directly induce substantial population growth. The proposed project would also not indirectly induce substantial population growth in the project area because it would not involve any new extensions to area roads or other infrastructure that could enable additional development in currently undeveloped areas not planned for growth and development in the Southtown Project EIR.

Although the proposed project could incrementally increase the population at the project site, compared with existing conditions, project-specific population impacts would not be significant because they would be small relative to the number of area-wide residents in the project vicinity. The proposed project would not directly or indirectly induce substantial population growth and would result in a less than significant population impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact POP-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Impact Analysis

The project site is currently undeveloped and does not contain existing housing. Development of the proposed project would not result in any housing displacement that would necessitate the construction of replacement housing elsewhere. Therefore, the proposed project would have no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact POP-3 Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

Impact Analysis

Construction of the proposed project would not result in the displacement of any people, either for short-term construction or permanently as a result of project implementation that would necessitate the construction of replacement housing elsewhere. Therefore, the proposed project would have no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.14 PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

3.14.1 Environmental Setting

Fire Protection

The VFD provides fire and emergency medical services to approximately 28 square miles within the City, as well as provides emergency medical services to approximately 160 square miles of unincorporated county land surrounding the City (General Plan 2015). The VFD responds to calls for fires, hazardous materials emergencies, certain technical emergencies, vehicle accidents and extrication incidents, and first responder and transport services. Fire-related calls for VFD service include: structure, nuisance, vehicle, and vegetation fires; hazardous materials emergencies; technical emergencies such as trench, water, and confined space rescues; and vehicle accidents and extrication incidents involving automobiles, motorcycles, tractor trailers, and airplanes. For emergency medical service, VFD provides Advanced Life Support (ALS) first responder and ALS transport services, as well as Emergency Medical Service (EMS). These services include responding to minor injury and major traumatic injury incidents, as well as to general and major medical incidents (General Plan 2015). VFD responds to mass casualty incidents within its larger response area as part of a countywide mutual aid system for ambulances. The VFD response time goal is to be on scene within seven minutes or less, starting from receipt of a 9-1-1 call, 90 percent of the time (Vacaville Fire Department 2016).

The VFD is funded by the City's General Fund, ambulance transport fees, Special Paramedic tax, Inspections fees, impact fees from new development, and from public safety Community

Facilities Districts, which have been formed for new development areas to offset the cost of providing public safety services to such areas through the levy of special taxes (General Plan 2015). The proposed project would be part of the City's Southtown Public Safety Community Facilities District #11 (CFD #11).

The VFD has five existing fire stations in the City, Stations 71, 72, 73, 74, and the newly constructed and operation 75. In addition, the City plans to develop two new fire stations, and relocate one existing fire station. The two fire stations include Station 76, and Station 77 (General Plan 2015). . Station 75 is located at 111 Cogburn Circle, directly across from the proposed project site. Station 75's area of response includes the Southtown Area and project site.

Police Protection

The Vacaville Police Department (VPD) provides law enforcement service to the City. Responsibilities of VPD include a 24/7 communication center, crime suppression and prevention, investigations, traffic patrol, and emergency service (General Plan 2015). There is one main VPD police station located at 660 Merchant Street, adjacent to Vacaville City Hall. The VPD is located approximately 4.3 miles northwest of the project site. The VPD has adopted standards for average response times. For Priority I calls, identified as the highest priority and involve crimes in progress or people in physical jeopardy, the adopted response time standard is six minutes one second. For Priority II calls, which are calls that do not need immediate response, the adopted average response time standard is 16 minutes and 28 seconds (General Plan EIR 2013). According to the General Plan, the VPD is currently meeting or exceeding its adopted standards for response times.

The VPD employs 150 full time employees (Vacaville Police Department 2016). The VPD does not have a standard for staffing levels. As of 2013, the current ratio of officers per 1,000 residents is 1.12 (General Plan EIR 2013). This is lower than the Federal Bureau of Investigations recommended standard of two officers per 1,000 residents. Public safety CFDs have been formed to fund the increased staffing needs from new development to help maintain existing levels of service. Recent new development projects and the anticipated staffing needs are listed below; the additional staffing would be funded through the CFDs (General Plan EIR 2013):

- North Village (CFD #8): Five additional staff.
- Portofino (CFD #9): One additional staff.
- Rice McMurtry (CFD #10): Two additional staff.
- Southtown (CFD #11): Four additional staff.
- Lagoon Valley (future CFD): 8.6 additional staff.
- Residential Infill Sites (CFD #12): Two additional staff.

As the City experiences additional growth and annexations, there would be an increased call volume for Police Department services, which are funded through the City's General Fund. Additional sworn staff would continue to be provided as necessary to keep pace with development and meet the needs of the community. Increased costs associated with providing police services to new annexation areas is sometimes paid by project applicants, as negotiated with development agreements (General Plan EIR 2013).

Schools

The City is served by four school districts: Vacaville Unified School District (VUSD), Travis Unified School District (TUSD), Dixon Unified School District (DUSD), and Fairfield-Suisun Unified School District (FSUSD). The City is largely served by the VUSD and the TUSD. The project site is located within the TUSD. The TUSD consists of five elementary schools (kindergarten through sixth grade), one middle school (seventh grade through eighth grade), and one high school (ninth grade through twelfth grade) (Travis Unified School District 2016). There is one planned elementary school, Vanden Meadows Elementary School, proposed southwest of the project site, between Nut Tree Road and Leisure Town Road. The nearest school to the project site is the Cambridge Elementary School, located approximately one mile northeast of the project site.

Parks

City residents have access to a variety of City-owned and operated parks and recreational facilities. The City owns and operates three categories of parks: neighborhood, community, and regional parks. In addition, the City owns and operates accessible open space, special purpose facilities, and trails. The City has over 2,700 acres of parks and open space, including seven community parks, 25 neighborhood parks, 22 accessible open spaces, and one regional park (General Plan 2015). The nearest park is a neighborhood park, Magnolia Park, located directly across the street from the southern boundary of the project site (General Plan 2015). Magnolia Park is approximately 5.9 acres. Magnolia Park is a neighborhood park and is intended to serve the recreation needs of residential areas within 0.50 mile of the park. Magnolia Park includes a multipurpose playfield, a playground, a basketball court, and picnic facilities. In addition to Magnolia Park, the proposed project is located approximately 0.40 mile northwest from South Town Park, and approximately 0.60 mile west from Cannon Station Park.

Under the parks standards outlined in the Parks and Recreation Element of the General Plan, the City aims to provide 1.8 acres of neighborhood parkland, 1.7 acres of community parkland, and one acres of regional parkland per 1,000 Vacaville residents, for a total of 4.5 acres of developed parkland per 1,000 Vacaville residents (General Plan 2015). The City does not have standards established for trails and open space (General Plan 2015).

Other Facilities

There are two libraries located in the City, and are both maintained by the Solano County Library System in cooperation with the VUSD. The Town Square branch of the Vacaville Public Library is located at 1 Town Square Place. The Cultural Center branch is located at 1020 Ulatis Drive. Both libraries feature a meeting room, a study room, and a computer center, as well as additional equipment and technological amenities (General Plan 2015).

3.14.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the Public Facilities and Services Element of the General Plan, Parks and Recreation Element of the General Plan, the General Plan EIR, the City's Municipal Code, Southtown Project EIR, and Section 2.0; Project Description, of this ISMND. Additional information related to fire protection,

and police services was obtained from the City of Vacaville Infrastructure, Facilities, and Services Status Report. Review of other public facilities was based on the Solano County Library Facilities Master Plan.

3.14.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact PUB-1	**Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:** **Fire protection?** **Police protection?** **Schools?** **Parks?** **Other public facilities?**

Impact Analysis

Fire protection

The VFD Station 75 is the nearest fire station, located directly across the street from the southern boundary of the project site, and would serve the project site. The proposed project would develop approximately 15 single-family detached residential units, and would increase demand for fire protection service. As required by California Fire Code, the proposed project would be required to include site specific design features such as ensuring appropriate emergency access, and requiring structures to be built with approved building materials. Conformance with this code reduces risks associated with fire hazards. The proposed project would provide adequate emergency access to the project site, and include 20 feet by 60 feet fire department hammerheads at the end of each private street entrance for vehicle turn-arounds (Figure 3.14-1). Additionally, the proposed project would construct an onsite fire hydrant to support fire suppression in case of emergency. Conditions of the project would include a notice of disclosure to the new residents citing their acknowledgement of the close proximity of Fire Station 75 and the noise and light impacts associated with the operations.

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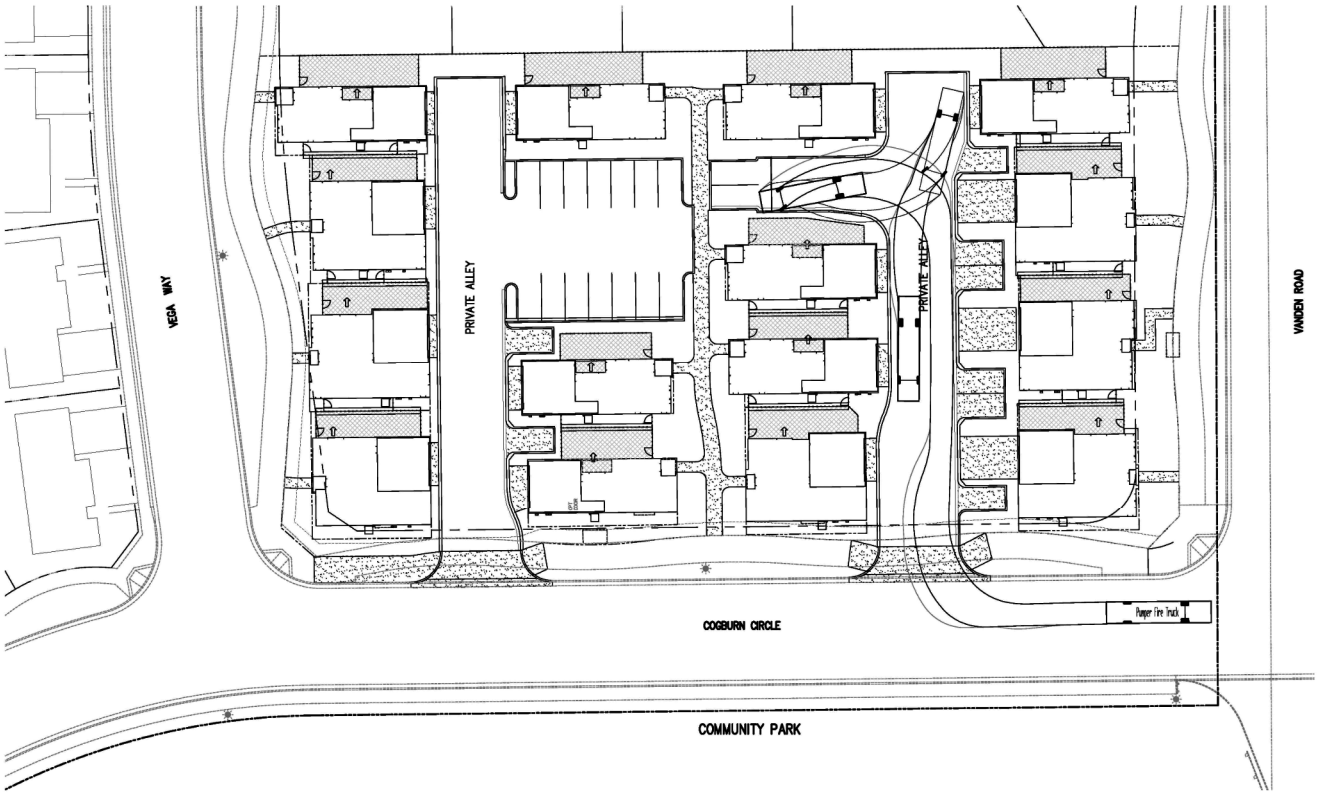

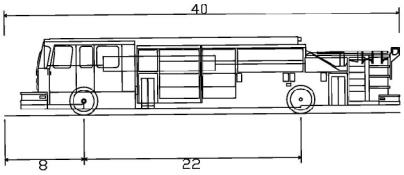

Pumper Fire Truck	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.14-1. Emergency Access

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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As identified in the General Plan, the proposed project is located within CFD #11. The CFDs were formed for new development areas to offset the cost of providing public safety services to such areas through the levy of special taxes. Therefore, in accordance with the City Municipal Code 11.01, Development Impact Fees, the Applicant would be required to pay a public facilities impact fee. The public facilities impact fee is to provide fire protection and paramedic services by providing for the cost associated with fire stations, firefighting, and paramedic equipment to serve the additional demands for fire services from new development (City of Vacaville Municipal Code 2016). Public facilities impact fees are necessary in order to maintain adequate levels of fire protection, suppression, paramedic activities, and response times to the area served. As such, with the payment of public facilities impact fees for fire protection services, no new or physically altered fire protection facilities would be required. Impacts would be less than significant.

Police Protection

The VPD is located approximately 4.3 miles northwest of the project site. The proposed project would develop approximately 15 detached residential units, and would increase demand for police protection service. According to the Vacaville General Plan, the VPD is currently meeting its response time goals. The proposed project would include motion activated exterior lighting, and lighted addresses would be displayed on the front and rear of each unit to promote onsite safety and security. The City's development review process would ensure that areas of the site are safe and well-lit in conformance with the Design Guidelines and in coordination with the VPD. In addition, in accordance with the City's Municipal Code the Applicant would be required to pay a public facilities impact fee to offset additional demand for police services. The public facilities impact fee for police services are necessary in order to maintain existing levels of police and safety services (City of Vacaville Municipal Code 2016). As such, with the payment of public facilities impact fees for police protection services, no new or physically altered fire protection facilities would be required. Impacts would be less than significant.

Schools

The proposed project would develop 15 detached single-family residential units. Based on the US Census average household size of 2.71 persons per dwelling unit in the City, the proposed project would increase the population by as much as 41 persons. According to the US Census data for the City of Vacaville, approximately 28.5 percent of the population is between the ages of six and 17 years old, the average school age. Therefore, it is assumed approximately 12 of the 41 residents generated from the proposed project would be between the ages of six and 17 years old. This would directly increase the student enrollment in the Travis Unified School District (TUSD). Students would likely attend Cambridge Elementary School (Kindergarten through sixth grade), Golden West Middle School (seventh grade through eighth grade), and Vanden High School (ninth grade through twelfth grade). During the 2014-2015 school year approximately 569 students were enrolled at Cambridge Elementary School, approximately 828 students were enrolled at Golden West Middle School, and approximately 1,633 students were enrolled at Vanden High School (California Department of Education 2013).

In 1998, Senate Bill 50 was approved by the California Legislature and funded by Proposition 1A. Senate Bill 50 limits the power of Vacaville or any other City or county to require fiscal mitigation

on home developers as a condition of approving new development, and provides for a standardized developer fee for schools (General Plan 2015). As outlined in the City's Municipal Code, Chapter 3.28, the City has received, reviewed, and approved a large number of development projects in the boundaries of the TUSD and VUSD, and are expected to generate extensive economic and population overload impacts upon the TUSD and VUSD. As such, any developer who is issued a building permit for a project within the TUSD or VUSD is subject to pay school development impact fees. The school development impact fees would be used for mitigation of overcrowded classroom facilities (City of Vacaville Municipal Code 2016). Assuming payment of fees pursuant to the City's Municipal Code is complete, the proposed project's level of impact to schools would be less than significant.

Parks

The proposed project would result in the development of 15 new single-family detached residential units. The proposed project is located directly across the street from Magnolia Park. The proposed project is designed with small lots that provide for the minimum of 400 sf of private open space. However, the Residential Design Requirements require the single-family developments on lots less than 4,500 sf include onsite common recreation/open space equal to that of 200 sf per unit. The intent of this provision is that the common recreation area would provide recreation opportunities in lieu of those that would be provided in a standard rear yard. However, if the decision maker finds that the provision of common open space within the project site is not feasible or desirable, and alternative may be requested. By not providing adequate recreation/open space, residents are likely to rely more on nearby parks for outdoor recreation. An adopted alternative to onsite space allows for the developer to install additional improvements to off-site recreational facilities when certain triggers are met. The projects meets the triggers with Magnolia Park, however as the park it new, the project has proposed to pay a fee equivalent to the cost of installation instead. The cost for this "in-lieu" fee is based on actual per acre cost of the development of Magnolia Park. Therefore, with the collection of in-lieu fees, the proposed project's increase in population would be self-mitigated to decrease previously unforeseen impacts to the existing park and would not result in the need for other new parks and recreation facilities. Impacts would be less than significant.

Other Public Facilities

The proposed project would develop 15 new single-family detached residential units, which would directly increase population growth and potentially increase the use of other public facilities. The Solano County Library System in cooperation with the VUSD maintains the two public libraries located in Vacaville. According to the Solano County Library 2001 Facilities Master Plan, existing library facilities are inadequate to meet community needs due to the increased population growth in Solano County over the past decade. As a result, this has placed a tremendous strain on the library's ability to provide adequate services in existing library facilities (Solano County 2001). The Solano County Library Facilities Master Plan identifies needed facilities and services in general to meet the community's needs. Solano County Library has identified several funding strategies to improve and expand existing facilities. Funding strategies might include development impact fees, general obligation bonds, certificates of participation,

benefit assessment districts, parcel taxes, Mello-Roos special tax bonds, and Proposition 14- State Library Bond (Solano County 2001).

The proposed project is subject to the payment of development impact fees for other governmental services, such as public libraries. Therefore, with the payment of development impact fees, impacts associated with other public facilities, including public libraries, would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.15 RECREATION

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

3.15.1 Environmental Setting

Parks

City residents have access to a variety of City-owned and operated parks and recreational facilities. The City owns and operates three categories of parks: neighborhood, community, and regional parks. In addition, the City owns and operates accessible open space, special purpose facilities, and trails. The City has over 2,700 acres of parks and open space, including seven community parks, 25 neighborhood parks, 22 accessible open spaces, and one regional park (General Plan 2015). The nearest park is a neighborhood park, Magnolia Park, situated on 5.9 developed acres and located directly across Cogburn Circle, and south of the project site. Two additional neighborhood parks are located in the project vicinity; Little Oak Park located 0.40 mile west of the project site, and Cannon Station Park located 0.70 mile southwest of the project site (General Plan 2015).

Under the parks standards outlined in the General Plan, the City aims to provide 1.8 acres of neighborhood parkland, 1.7 acres of community parkland, and one acre of regional parkland per 1,000 Vacaville residents, for a total of 4.5 acres of developed parkland per 1,000 Vacaville residents (General Plan 2015). Currently, the City is deficient in meeting the service standard for neighborhood parks and community parks, but exceeds the standard for regional and total parkland categories (General Plan 2015).

3.15.2 Methodology

The following analysis is based on a review of the General Plan, the General Plan EIR, and Section 2.0, Project Description, of this ISMND. Additional information was obtained during the field review of the project site and surrounding area. The following impact discussions consider the effect of the proposed project as it relates to recreation.

3.15.3 Environmental Impact Analysis

This section discusses potential impacts to recreational facilities associated with the proposed project and provides mitigation measures where necessary.

Impact REC-1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Impact Analysis

The proposed project would involve the development of a maximum of 15 two-story single-family detached residential units on 1.76 acres on a site currently planned for commercial uses. Therefore, the residents of the proposed units would use the existing neighborhood park. The proposed project provides an average usable private yard area of 453 sf, with a 400 sf minimum. . The proposed project is designed with small lots that provide for the minimum of 400 sf of private open space. The Residential Design Requirements require the single-family developments with lots less than 4,500 sf include onsite common recreation/open space equal to that of 200 sf per unit. The intent of this provision is that the common recreation area would provide recreation opportunities in lieu of those that would be provided in a standard rear yard. However, if the decision maker finds that the provision of common open space within the project site is not feasible or desirable, and alternative may be requested. By not providing adequate recreation/open space, residents are likely to rely more on nearby parks for outdoor recreation. An adopted alternative to onsite space allows for the developer to install additional improvements to off-site recreational facilities when certain triggers are met. The projects meets the triggers with Magnolia Park, however as the park it new, the project has proposed to pay a fee equivalent to the cost of installation instead. The cost for this "in-lieu" fee is based on actual per acre cost of the development of Magnolia Park. Therefore, with the collection of in-lieu fees, the proposed project's increase in population would be self-mitigated to decrease previously unforeseen impacts to the existing park and would not result in the need for other new parks and recreation facilities. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact REC-2 Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Analysis

Under the parks standards outlined in the General Plan, the City aims to provide 1.8 acres of neighborhood parkland, 1.7 acres of community parkland, and one acre of regional parkland per 1,000 Vacaville residents, for a total of 4.5 acres of developed parkland per 1,000 Vacaville residents (General Plan 2015). Currently, the City is deficient in meeting the service standard for neighborhood parks and community parks, but exceeds the standard for regional and total parkland categories (General Plan 2015).

The proposed project is located directly north of Magnolia Park, an existing neighborhood park situated on 5.9 acres across Cogburn Circle. The proposed project does not involve the construction or expansion of recreational facilities. Therefore, there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.16 TRANSPORTATION AND TRAFFIC

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

3.16.1 Environmental Setting

The existing regional and local roadway network in Vacaville is a hierarchical system of highways and local streets developed to provide regional traffic movement and local access. The following provides a description of the functional classification of the facilities within the project area.

Traffic impacts are evaluated by determining the number of new trips that the proposed project would be expected to generate, distributing these trips to the surrounding street system based on existing or anticipated travel patterns specific to the project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments.

Roadway System

The City contains a hierarchy of roadways that serve different functions, ranging from the highway system to arterial, collector, and local streets. A subset of these roads are designated as regionally significant routes and are subject to regional policy considerations, as described in the sections below that summarize the Solano County Comprehensive Transportation Plan and Congestion Management Program.

Highways

Vacaville is served by two freeways, Interstate 80 and Interstate 505, which are part of the interstate highway network. Interstate 80 primarily has four travel lanes in each direction in the Vacaville area. It extends southwest through Fairfield and Vallejo, crosses the Carquinez and Oakland Bay Bridges, terminating at Highway 101 in San Francisco. It also extends northeast through Dixon and Davis, over the Sacramento River to Sacramento and beyond. Interstate 505 links Interstate 80 with Interstate 5, a major north-south freeway serving the west coast of the United States. Interstate 505 has two travel lanes in each direction.

These freeways and their associated interchanges define the regional context, which affects the local access and circulation within Vacaville.

Local Street and Roadway System

The local street and roadway system is composed of a hierarchy of streets with varying functions. The classifications within this hierarchy are explained in detail in the Roadway Classifications and Standards section below. Arterial roads range from six-lane arterials, such as portions of Elmira Road, to four lane arterials, such as Peabody Road and Nut Tree Road. Two-lane roads can also be designated as arterial roads. Collectors, which have two travel lanes, include Orchard Avenue, Marshall Road, and Vanden Road. Local streets are primarily found in residential neighborhoods, carry little through traffic, and generally have the lowest traffic volumes. Collector routes funnel traffic from local roadways to the arterial roadway network.

Project Intersection LOS

The levels of service (LOS) for the intersections that were identified as having the potential of being affected by the proposed project are shown below:

<u>Alamo Drive at Nut Tree Road: Signalized Intersection</u>

Peak Hour- AM: LOS C; Average Delay: 28.5
Peak Hour – PM: LOS C; Average Delay: 32.4

Alamo Drive at Vanden Road: Signalized Intersection

Peak Hour- AM: LOS C; Average Delay: 21.2
Peak Hour – PM: LOS C; Average Delay: 28.4

Alamo Drive at Leisure Town Road: Signalized Intersection

Peak Hour- AM: LOS C; Average Delay: 26.9
Peak Hour – PM: LOS C; Average Delay: 29.2

Given the nature of the use and the location of the project site, the impacts associated with the proposed project were evaluated based on the City's General Plan EIR. The Levels of Service presented above were calculated based on traffic volumes collected in Spring of 2016 for the Roberts Ranch Specific Plan EIR.

3.16.2 Methodology

Stantec prepared a Traffic Memorandum for the proposed project (Appendix H). Traffic impacts associated with the proposed project, if any, would be primarily related to trips made by the project residents. This traffic assessment focuses on traffic impacts associated with the project-related traffic in the surrounding street system with the implementation of the proposed project. Additional discussion is provided in the Traffic Assumptions Memorandum included in Appendix H.

In addition, the potential impacts of the proposed project on the transit network, bicycle network and pedestrian facilities in the vicinity of the project site were qualitatively assessed.

Trip Generation

The Institute of Transportation Engineers (ITE) has compiled the results of trip generation research from over 4,250 individual land use studies throughout the United States and Canada. The 9th edition of the *Trip Generation* contains trip generation rates for over 140 different land use codes. Trip generation rates for the proposed project are based on data published in this manual. ITE Land Use Code 942 (Automobile Care Center) was used for the trip generation calculation.

The City of Vacaville has its own model for trip generation. The Vacaville Citywide MINUTP Model results (obtained from the Southtown Project EIR) were compared to the ITE trip generation results for the proposed land use. Because the ITE trip rates were more conservative, they were used for the analysis.

3.16.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact TRANS-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Impact Analysis

Traffic Generation

The proposed project's trip generation during the weekday a.m. and p.m. peak hours are presented in Table 3.16-1. As shown, a total of 183 weekday daily trips would accompany these uses. Of that total, 20 trips (5 inbound and 15 outbound) would be generated during the a.m. peak hour and 19 (12 inbound and 7 outbound) trips would be generated during the p.m. peak hour.

Also shown is the approved land use from the Southtown Project EIR. The approved land use resulted in an estimated 55 p.m. peak hour person-trips. The proposed change in land use is expected to generate 36 fewer trips than the approved land use during the p.m. peak hour. It would likely also generate fewer trips for the a.m. and daily periods as well.

Shown below the proposed project proposed and approved usage is the approved commercial usage for the full Southtown Project development. The Southtown Project development had planned for 3 acres of commercial use, which would result in 32 residential units 1,200 daily trips, 36 a.m. peak hour trips, and 98 p.m. peak hour trips. Removal of this commercial use is estimated to reduce the number of trips generated in the Southtown Area.

Table 3.16-1: Trip Generation Summary

Land Use (ITE Code)	Size		Daily		a.m. Peak Hour				p.m. Peak Hour			
			Rate/ Equ	Total	Rate/ Equ	In	Out	Total	Rate/ Equ	In	Out	Total
Proposed Project: Single-Family Detached Housing (210)	15	units	Equ A	183	Equ B	5	15	20	Equ C	12	7	19
Proposed Project: Approved Neighborhood Commercial*	1.33	acres	400	532	3% of Daily	10	6	16	32.9*	14	30	44
DIFFERENCE			**-**	**349**	**-**	**-5**	**+9**	**+4**	**-**	**-2**	**-23**	**-25**
Anticipated Conversion from Policy Change: Residential Conversion of Additional 2.0 acre parcel	17	units	Equ A	206	Equ B	6	16	22	Equ C	18	8	21
Anticipated Conversion from Policy Change: Total Approved Neighborhood Commercial	3	acres	400	1200	3% of Daily	22	14	36	32.9*	31	67	98

Notes:
Equ A: Ln (T) = 0.92 Ln (X) + 2.72
Equ B: T = 0.70 (X) + 9.74
Equ C: Ln (T) = 0.90 Ln (X) + 0.51
Source: For Single Family Detached Housing: ITE Trip Generation, 9th Edition; Stantec August 2015

Source for approved neighborhood commercial: SANDAG Traffic Generation Rates (specialty retail, strip commercial), April 2002

*Trip generation rate from the 2003 Southtown Project EIR

Source: Stantec 2016

The proposed project trips were distributed to the transportation network and study intersections proportionately based on current travel patterns. The existing ADT volume on Vanden Road is approximately 4,700 vehicles (calculated based on intersection counts), and the existing peak hour traffic volume is approximately 400 to 600 vehicles per hour. According to the Vanden Meadows Specific Plan and Development Project, Vanden Road north of Leisure Town Road is currently operating at LOS C or better, which is an acceptable LOS according to the General

Plan. Similarly, Alamo Drive is also operating at LOS C or better. Therefore, due to the current traffic volumes and the low proposed project inbound and outbound trips on Alamo Drive and Vanden Road during both the a.m. and p.m. peak hours, the proposed project inbound and outbound trips are not expected to cause any significant impact. Additionally, numbers are anticipated to decrease further when Vanden Road is permanently closed Cogburn Circle and the park. This would encourage through traffic to use Nut Tree Road to Foxboro Parkway or Leisure Town Road to Vanden Road; as was intended in the traffic circulation design of the General Plan for the major arterial roadways.

Additionally, the project site is served by both local and regional public transit. As described in more detail later, the City Coach buses would provide local transit service to the project area, with one bus route, Route 8, which currently operates along Vanden Road, Alamo Drive, and Nut Tree Road, 0.6 miles north of the project site or 0.5 miles west of the project site. The City Coach bus service provides residents a connection to Soltrans and Yolobus regional providers, and multiple Park and Ride locations within the City. Due to the relatively small size of the proposed project, the project generated transit person trips would be accommodated by the existing transit system.

Furthermore, there are limited bike facilities in the immediate project vicinity. There is a striped shoulder on Vanden Road adjacent to the project site which is not identified as a bike lane but could be used as such. This facility connects to the bike lane on Redstone Parkway, which provides east-west access to Leisure Town Road. The proposed land use is not expected to negatively impact bicycle facilities and the relatively small size of the proposed project is not expected to generate excessive bicycle trips.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact Analysis

Level of Service (LOS)

The Solano Transportation Authority (STA) serves as the Congestion Management Agency (CMA) for Solano County. As the CMA, the STA must, under State law, prepare a Congestion Management Program (CMP) and update it every two years. The CMP is meant to outline the STA's strategies for managing the performance of the regional transportation within the County. A CMP must contain several components: traffic LOS standards for State highways and principal arterials; multi-modal performance measures to evaluate current and future systems; a seven-year capital program of projects to maintain or improve the performance of the system or mitigate the regional impacts of land use projects; a program to analyze the impacts of land use decisions; and a travel demand element that promotes transportation alternatives to the single-occupant vehicle.

According to the General Plan, the City's goal is to maintain a "mid-range D" LOS at signalized intersections, but the City may allow temporary exceedance of this standard if future programmed improvements would improve performance (General Plan 2015). As discussed in the previous section, the study intersections currently operate at LOS C with and without the proposed project, which is acceptable.

Vanden Road between Leisure Town Road and Peabody Road is part of the CMP System and currently operates at LOS C (Solano CMP), which meets the General Plan's LOS threshold. Similarly, according to the Vanden Meadows Specific Plan and Development Project, Vanden Road north of Leisure Town Road is currently operating at LOS C or better and Alamo Drive is also operating at LOS C or better. Given the current volume of existing traffic on the roadways surrounding the project site, additional traffic generated during construction and operation of the proposed project would not cause an exceedance of LOS C on City roadways. As such, the proposed project would not conflict with the provisions of a CMP; therefore, impacts would be less than significant.

Vehicle Miles Traveled (VMT)

The project will result in an increase in VMT when compared to the planned commercial land use. This impact is also a cumulative impact for the Southtown Project Area and Vanden Meadows development projects.

The current Solano CMP states a goal of reducing Vehicle Miles Traveled (VMT) by 10 percent. The previously approved commercial land use would have provided service facilities such as retail services designed to meet the daily needs of local residents, allowing for short (potentially non-automobile) trips. Currently, for a single-family home, the average trip length is estimated to be 7.48 miles (Metropolitan Transportation Commission 2008). For an estimated 12 trips a

weekday for five weekdays a week, the VMT for a single household would be calculated as 450 (see Appendix H for details).

The planned commercial land use had potential to reduce the VMT of the surrounding area by providing the residences with close-by services. The project site is located about 2.1 miles from the commercial area located at the Peabody Drive and Alamo Drive intersection which provides these services. Accounting for subsections of the Southtown Project development, on average Southtown Area residents will need to travel 2.22 miles for services at Peabody Drive/Alamo Drive location. The previously approved land use would have allowed for a reduction in VMT for the Southtown Area residents providing these services at an average distance of 0.48 miles. On average the previously approved land use would have provided a reduction in trip length of about 1.74 miles for trips associated with the assumed commercial use. Assuming three trips a weekday/household associated with the previously approved land use, VMT may have been reduced by 5.2 miles a week per household, or 1.2 percent of the current estimated VMT. Additionally, based on the air emissions modeling and traffic analysis previously completed for the Southtown Project EIR, the proposed project is anticipated to result in a 5.3 percent increase in VMT. As presented in Section 3.3, Air Quality Impact-2, the analysis reflects a conservative estimate related to the proposed project's VMT evaluation.

Although there are fewer trips generated for the proposed residential land use than the approved commercial land use, there would be no reduction in VMT as would have been possible with the commercial land use. However, the estimated increase in VMT is not a significant amount. For this reason, the project is not expected to have a significant impact.

As was previously noted, with the proposed residential use, Southtown Area residents living next to the commercial site would be subject to an average 2.2 mile trip to the nearest commercial service rather than an average 0.48 mile trip, which would be across the street or within walking distance to the project site. However, as 1.2 miles is less than the average trip length of 7.48 miles, this distance is presumed to be insignificant.

It is important to note that the VMT reduction would only apply to the future scenario in which commercial space were built rather than residential space. Residents do not currently experience trip length reduction as the commercial space has not been built and residents will not experience a change from current trip length in the future as a result of this land use change. The land use change simply limits the ability of the City to reduce future trip length for Southtown Area residents.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-3 Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Impact Analysis

The Nut Tree Airport is located approximately 3.5 miles northwest of the project site and the Travis Airforce Base is located approximately 3.8 miles southeast of the project site. As such, the proposed project would not result in any changes to air traffic patterns and would not result in any associated safety risks. No impact would occur as the proposed project would not involve use of air transit, nor is it expected to cause any change in air traffic patterns.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact TRANS-4 Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis

The proposed project would be compatible with the surrounding residential developments in the project vicinity. Magnolia Park is located to the south of the project site, which attracts recreational use and pedestrian trips. Neighborhood residents are concerned about pedestrian safety with increased traffic and increased on-street parking from the development. In order to ensure safe pedestrian access, Mitigation Measure TRANS-1 would be incorporated. Mitigation Measure TRANS-1 would require that the Applicant submit a site design plan to the City for review and approval prior to the issuance of building permits, to ensure clear sight lines for all project driveways, crosswalks, bicycle crossings, trails, and retaining walls are established. Therefore, with implementation of Mitigation Measure TRANS-1, implementation of the proposed project would not create a transportation hazard as a result of design features.

Additionally, the proposed project is planned to incorporate sufficient parking to meet the estimated parking demand, which should result in limited resident reliance on on-street parking. Therefore, with implementation of Mitigation Measure TRANS-1 the proposed project would provide adequate vehicular and pedestrian safety and ensure that no hazardous transportation

design features would be introduced by the proposed project. Therefore, impacts would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM TRANS-1: Prior to the issuance of building permits, the Applicant shall prepare a detailed site design plan to the City for review and approval that demonstrates that all project driveways, crosswalks, and bicycle crossings would provide clear sight lines and pedestrian safety features. The approved plan shall be incorporated in the proposed project.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact TRANS-5 Result in inadequate emergency access?

Impact Analysis

The VFD Fire Station 75 is located immediately south of the project site. Construction of the proposed project could potentially affect streets or otherwise affect emergency access routes as the driveways are adjacent to the fire station. In order to assure that the construction and operation do not have a significant impact, Mitigation Measure TRANS-2 would be incorporated. Mitigation Measure TRANS-2 would require that the contractor submit a construction plan for approval which would show that construction would not interfere with traffic flow or emergency vehicle access or exit from the fire station. The proposed project would be designed to incorporate all required Solano County Fire and Police Department standards to ensure that implementation of the proposed project would not result in hazardous design features or inadequate emergency access to the project site or areas surrounding the project site. Furthermore, the proposed project would not generate significant traffic volumes during construction or operation. Therefore, with implementation of Mitigation Measure TRANS-2, impacts would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM TRANS-2: To assure adequate emergency access to/from the fire station during construction, the contractor shall submit a construction plan showing that traffic flow would not be substantially impacted and that the fire station driveways shall not be obstructed during construction.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

Impact TRANS-6 Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Impact Analysis

City Coach provides public transit service throughout the City. There is one bus route, Route 8, which currently operates along Vanden Road, Alamo Drive, and Nut Tree Road, 0.6 miles north of the project site or 0.5 miles west of the project site, and ultimately provides a connection to the Vacaville Transportation Center (with connection to regional service provided by Soltrans and Yolobus), Vacaville Transit Plaza, and three Park and Rides. Due to the relatively small size of the proposed project, the generated transit person trips would be accommodated by the existing transit system. Therefore, impacts related to alternative transportation would be less than significant.

Additionally, all dwelling units would have garages and other interior spaces suitable for storing bicycles. The internal streets within the proposed project and in the Southtown Project Area would be suitable for travel by bicycle. There is a striped shoulder on Vanden Road adjacent to the project site which is not identified as a bike lane but could be used as such. This facility connects to the bike lane on Redstone Parkway, which provides east-west access to Leisure Town Road. The proposed project would provide an internal pedestrian network that would connect to existing sidewalks along Cogburn Circle and Vega Way.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.17 TRIBAL CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code section 21047 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.17.1 Environmental Setting

The project site is within the ethnographic territory of the Southern Wintun or Patwin, who are members of the widespread Penutian language family, which was prevalent throughout California during the late prehistoric and historic era (e.g., A.D. 1800) (Johnson 1978). Patwin were organized into tribelets, which were usually composed of a principal village and a few satellite settlements. Tribelets were small, autonomous, and sometimes bounded by the limits of a small drainage. Patwin subsistence relied on hunting, fishing, and gathering a wide variety of plant resources that were located within their territory. Acorns were a major part of their diet, and were obtained from hill and mountain oaks communally owned by the tribelet (Johnson 1978:355). Patwin manufactured a variety of utilitarian and ceremonial/luxury items, including baskets, stone tools, mortars and pestles, shell beads, and clothing. Shell beads were manufactured for personal adornment and as a medium of exchange. River Patwin also built tule balsa boats to facilitate river travel and acquisition of fish resources (Johnson 1978). Patwin traded for various commodities and subsistence resources using clamshell disc beads as a medium of exchange (Hughes 1994, Kehoe 1981). The first documented European expedition within the vicinity of the proposed project was the Pedro Fages expedition of 1772, which reached the Carquinez Strait and as followed four years later by the Anza expedition which was searching for a land route to Point Reyes. The first crossing of the strait did not occur until 1810 when Gabriel Moraga led a raid against the Suisun tribe. This initial entry into the region culminated with the establishment of Mission San Francisco Solano, located in Sonoma, in 1823 (Hoover et al. 2002). Mission records show that between 1815 and 1822, a total of 280 Ululato (a Patwin village southeast of Vacaville) people were baptized at Mission San Francisco, and between 1824 and 1833 another 67 were baptized at Mission San Francisco Solano (Milliken 1995).

The project site and its surroundings were originally part of the Los Putos Rancho (established in 1843), which encompassed approximately 44,000 acres and sprawled across the rolling hills and plains of the Vaca Valley. The majority of the rancho land was primarily used for stock-raising, with cattle and sheep predominating. In 1850, Manuel Cabeza Vaca deeded nine square miles of land to William McDaniel, establishing the town of Vacaville. By 1869, Vacaville was connected to a number of agricultural markets and shipping points, with the development of the Vaca Valley Railroad extending from the mainline of the California Pacific Railroad in Elmira to Vacaville, and later Winters and Madison in Yolo County (Munro-Fraser 1879, Gregory 1912, Wichels 1964). By the early 1900s, the population of Vacaville and its immediately surrounding environs was approximately 1,200. The region continued to be dominated by agricultural production, with orchards predominating throughout the immediate area and in greater Solano and Yolo counties.

As California underwent sustained population growth during and following World War II, the Vacaville region's proximity to major transportation corridors and adjacency to growing defense and industrial sectors translated to a massive population increase. With a population of only 1,600 in 1940, by 1970 Vacaville housed nearly 22,000 residents. At present, Vacaville has a population of nearly 100,000 (US Federal Census 1940–2010). This population growth has translated to substantial modification of the agricultural landscape, with the formerly compact town sprawling in a ring surrounding its original dimensions. In large, light industrial and

commercial development has grown around the area's major transportation corridors, including Interstate 80 and Interstate 505 and the area surrounding the project site. In addition, the immediate environs have been developed with water-related infrastructure from the 1950s Solano Project. In this manner, Vacaville and its immediate surroundings continues to reflect an evolving landscape of both agricultural and increasingly metropolitan development.

Assembly Bill (AB) 52 Consultations

Per the City's requirement of consultation under AB 52, the Yocha Dehe Wintun Nation was contacted in a letter dated September 2, 2016. Per the statute, no correspondence had been received from the Tribe within the 30 day window. Subsequently, the Tribe requested additional information from the City. In response to the Tribe's request, the City provided the Tribe with all available appropriate documentation. At the time of this document, the Tribe has not further engaged in consultation for the proposed project[1].

3.17.2 Methodology

In order to identify tribal cultural resources within the project area, the following was conducted: records search results were reviewed from a records search conducted at the Northwest Information Center (NWIC) for the City of Vacaville's Southtown Project (State Clearinghouse Number 2003062071) (Cotton/Bridges/Associates 2004; McElroy 2003), a pedestrian survey was conducted within the project area in September 2016, background information and literature was consulted, and the City conducted AB 52 tribal outreach by sending a Tribal Consult letter on September 2, 2016.

The record search included a review of all cultural resources and reports within a 0.5 mile of the project area. The records search was conducted by reviewing the OHP records, base maps, historic maps, and literature for Solano County on file at the office. Other sources reviewed included the OHP Historic Properties Directory, California Inventory of Historical Resources, Caltrans Bridge Survey, ethnographic information, and soil survey maps.

The Tribal Cultural Resources methodology is further detailed in Section 3.5, Cultural Resources, Methodology.

3.17.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact TRIB-1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code Section 21047 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of no known tribal cultural resources within or near the study area. Furthermore, initial field review of the project area identified that the project site is previously disturbed and did not identify any signs of previously unidentified subsurface tribal cultural resources within or adjacent to the project area. Thus, the proposed project is not anticipated to have an impact on any known or potential tribal cultural resources. Per the City's requirement of consultation under AB 52, the Yocha Dehe Wintun Nation was contacted in a letter dated September 2, 2016. In response to the Tribe's request, the City provided the Tribe with all available appropriate documentation[1]. The proposed project will change the land use on the previously disturbed project site from commercial to residential. Thus, the proposed project is not anticipated to have an impact on any known or potential tribal cultural resources.

However, subsurface construction activities such as trenching and grading associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resource. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique tribal cultural resources. With the implementation of Mitigation Measure CUL-1, potential impacts would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact With Mitigation.

3.18 UTILITIES AND SERVICE SYSTEMS

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

3.18.1 Environmental Setting

Wastewater Collection/Treatment

The City owns and operates the wastewater collection system in Vacaville. The Easterly Waste Water Treatment Plant (WWTP), located east of the City, near Elmira, provides treatment of wastewater from residential, commercial, and industrial dischargers throughout the City. Effluent from the WWTP is discharged into Old Alamo Creek adjacent to the WWTP site. Current wastewater flows are within the design capacity of the WWTP.

The WWTP has a design flow capacity of 15 million gallons per day (mgd) sanitary base flow (SBF), considered dry weather flow, and 55 mgd peak hour wet weather flow (PHWWF). SBF is defined as the monthly flow in October when infiltration and inflow is minimal. PHWWF is defined as the maximum one-hour flow during the wet season.

The existing SBF at the WWTP is approximately 8.36 mgd, below its design flow capacity of 15 mgd (General Plan EIR 2013). The PHWWF is dependent on baseline sanitary flow conditions, as well as rainfall intensity and preceding rainfall conditions. The measured PHWWF at the WWTP has exceeded 40 mgd on two occasions in the past ten years: once in December 2005 (42.5 mgd) and once in October 2009 (41.3 mgd), thus the PHWWF has been below the design flow capacity for PHWWF of 55 mgd (General Plan EIR 2013).

Based on anticipated development in 2035 under the General Plan and standard flow factors, it is projected that the SBF in 2035 would be 16.2 mgd (City of Vacaville 2013). This flow would exceed the current treatment plant capacity by about eight percent (General Plan EIR 2013). Per State mandates, the City is in the process of constructing improvements to the WWTP to meet recently-implemented NPDES permit requirements. Construction of these improvements would not increase or decrease the existing design flow capacities.

The proposed project includes two proposed onsite eight inch sanitary sewer lines which would connect with the existing eight inch sewer line located in Cogburn Circle which then connects to the 24 inch sewer line in Vanden Road. Lot 1 would connect to the existing six inch sewer stub previously installed to the project site. With a project area of 1.76 acres, the total sewer effluent discharge units (EDUs) from the proposed project is 15 EDUs (1 EDU per unit). A Sewer Calculation Memorandum (Sewer Calculations Memo; Appendix D) was prepared on October 21, 2016 by Phillippi Engineering Inc., to evaluate the projected sewer flows from the Ashton Place Units 1-3, Potters Place, and Park Parish properties as originally intended (CN and RM) versus the proposed sewer flows which would result from the conversion of these parcels to Single Family Residential (RMD).. As noted in the Southtown Project EIR, sewer capacity issues exist north of the Southtown Project Area. The sewer capacity has been analyzed by the City of Vacaville and it has been determined that sewer improvements are required. To analyze the changes in the projected sewer flows the original Master Plan projections were compared with the Proposed Revisions which include the approved and existing uses. Sewershed ST1848 includes the area known as Ashton Place Unit 3 and total projected sewer flow, per the Master Plan, from ST 1848 was calculated at 30,020 gpd (Phillippi 2016a). With Approved and existing projects and the proposed Ashton Unit 3 revision, the total projected flow from Sewershed ST1848 is 27,420 gpd. Sewer flow in Sewershed ST1848 is reduced from the original Master Plan by 2,600 gpd (Phillippi

2016a). The Master Plan for Sewershed ST09, the area that includes Ashton Place Unit 1 and 2 and Potters Place is reduced by 960 gpd with existing projects, approved projects, and the proposed revision (Phillippi 2016a). Sewershed ST04 is the area that includes Park Parish and total projected sewer flow, per the Master Plan, from ST04 was calculated at 38,150 gpd, resulting in a reduction of 710 gpd in Sewershed ST04 (Phillippi 2016a). The proposed project would be served with sewer service by the City of Vacaville (Figure 3.18-1).

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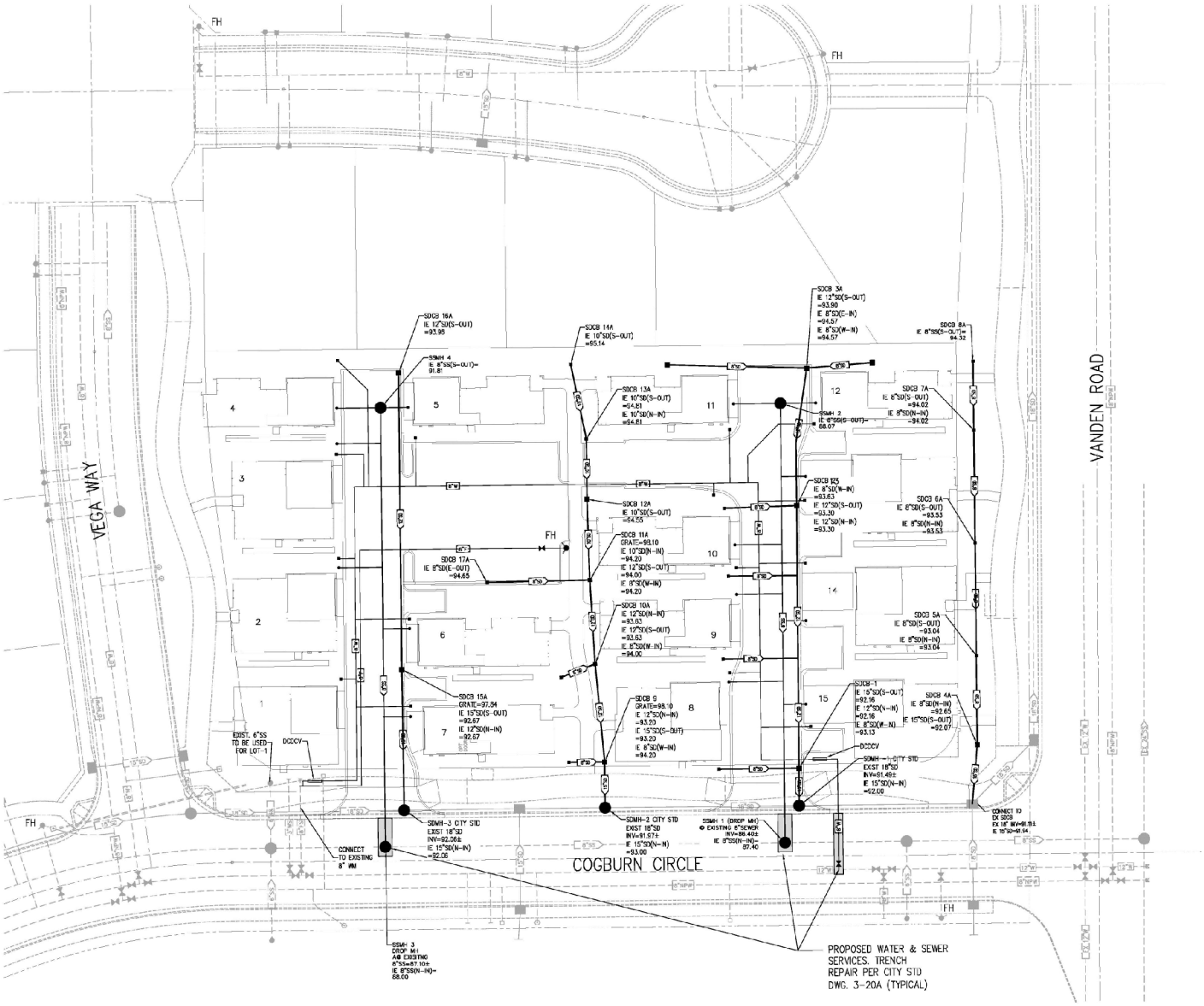

Note: Utility Plan data provided by Phillippi Engineering (PEI)

Not to Scale

Stantec

Ashton Place Unit 3 Project
Vacaville, California

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure 3.18-1. Utility Plan

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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Stormwater Management

Municipalities are required to proactively control and regulate pollution from their municipal storm sewer systems in order to mitigate the potential detrimental impacts of urban runoff.

The Clean Water Act prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a NPDES permit. The SWRCB is responsible for issuing NPDES permits to cities and counties through the RWQCB. Permittees must develop and implement a Stormwater Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. The City is considered a permittee under the statewide general permit.

In addition to the NPDES statewide general permit, the Vacaville Municipal Code contains regulations related to stormwater management in Title 14 of the Municipal Code. Furthermore, the State of California's Porter-Cologne Water Quality Control Act of 1969 and other State legislation require municipalities to protect water quality.

Surface water flows from the project site would be directed to proposed area drains. These area drains would be connected to two 12 inch and one 10 inch proposed onsite storm drain lines with laterals to area lines. The three onsite storm drain lines would then connect to the existing 18 inch public storm drain line located on the north side of Cogburn Circle. The stormwater would then be conveyed through existing public storm drain lines to the existing detention basin on the east side of Leisure Town Road.

A Storm Drain Runoff Comparison Commercial vs. Residential Memorandum (Storm Drain Memo; Appendix E) was prepared on October 20, 2016 by Phillippi Engineering Inc., to evaluate the projected stormwater runoff for the project site at 1.76 acres, developed both commercially and residentially, stormwater runoff for the project site at 1.33 acres, developed both commercially and residentially, and stormwater runoff for the adjacent CN 2.0 acre parcel, developed both commercially and residentially. According to the Storm Drain Memo, conversion of the project site from commercial development to residential development would result in 44 percent reduction in stormwater runoff in a 10 year storm event; the reduction is directly related to the coefficient of runoff, which is 44 percent higher for commercial developments over residential developments (Phillippi 2016b). The proposed project would be served with drainage service by the City of Vacaville (Figure 3.18-1).

Water Supply

The City provides potable water to users within the city limits via a network of water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatment plants. The City of Vacaville has three water supply sources. Two are surface water sources, the Solano Project and the State Water Project, that require treatment prior to distribution. The third source is from groundwater wells, which only require disinfection at the wellhead prior to distribution.

Vacaville's water supply sources include water from the Solano Project, which consists of Monticello Dam, Lake Berryessa, Lake Solano, and the Putah South Canal. The primary storage reservoir of the Solano Project is the Lake Berryessa reservoir, which has a large storage capacity

(1.6 million AF), but a relatively small watershed (576 square miles). This type of reservoir provides good drought protection if the reservoir is near full when the drought starts. Solano Project water is treated at the North Bay Regional Water Treatment Plant, a Joint Powers of Authority project between the cities of Vacaville and Fairfield, or at the City's Diatomaceous Earth Water Treatment Plant located at the City's Corporation Yard. In addition to its direct entitlement, Vacaville entered into an agreement with the Solano Irrigation District (SID) that augments the City's allocation of Solano Project water (General Plan 2015).

Pursuant to agreements with the SCWA and the Kern County Water Agency, surface water received from the State Water Project is delivered through the North Bay Aqueduct (NBA) to the City of Vacaville from the Sacramento Delta. Because the NBA is part of the entire State Water Project, any shortages occurring in the State Water Project impact the water availability from the NBA, making it a less reliable source than the Solano Project (General Plan 2015).

In calendar year 2014 there was a 95 percent reduction imposed on State Water Project contractors throughout California due to the extended drought of 2012 through 2014. This reduction in State Water Project supply was the most severe in the history of the State Water Project.

Part of the State Water Project is "settlement water". The California Water Code includes area-of-origin statutes, which state that an area shall not be deprived of the prior right to water reasonably required to adequately supply the beneficial needs of the area. In settlement of area-of-origin water right applications by the cities of Fairfield, Benicia, and Vacaville, the DWR provides "Settlement Water" to Vacaville. This is part of the State Water Project.

The third water supply source is groundwater from 11 City wells. The City draws groundwater from a deep aquifer located under the northeastern part of Solano County in the Vacaville/Dixon area. Vacaville's groundwater extraction in recent years has been maintained at about 5,000 - 6,000 acre feet per year (AF/YR), with the maximum safe yield determined to be over 8,000 AF/YR. Vacaville continues to explore well field expansion as a means of maintaining adequate water supply. Areas outside the City limits are generally agricultural and/or rural residential and rely on private groundwater wells and/or potable water service from the SID.

In accordance with State law, the City has adopted an Urban Water Management Plan (UWMP), which compares projected water use to available water supply sources over the next 20 years. The UWMP is updated every five years. The most recent UWMP is the July 2015 UWMP and an Urban Water Shortage Contingency Plan, an amendment to the UWMP, was adopted in January 1991 and revised August 2014.

Water supply and water demand for the Southtown Project Area was previously evaluated under the Southtown Project EIR in 2003. Since the 2003 evaluation of the Southtown Project Area, the City's UWMP was updated in July 2015. The 2015 UWMP evaluates the past, current, and projected water use, along with water supply projections through 2040. According to the 2015 UWMP, future water supply will be adequate to offset future water demands during normal, single-dry, and multi-dry years (UWMP 2015).

A proposed eight inch onsite water pipe system would branch from the existing 12 inch water main pipe located in Cogburn Circle to provide water to the project site. A Water Supply Calculations Memorandum (Water Supply Memo; Appendix F) was prepared on October 21, 2016 by Phillippi Engineering Inc., to compare the projected potable water requirements for the Ashton Place Units 1-3, Potters Place and Park Parish properties as originally intended (CN and Townhouses) versus the proposed potable water requirement which would result from the conversion to Single Family Residential (RM). According to the Water Supply Memo, there is a net reduction of 3 residential units (60 less townhouses, 64 additional RMD single family and 7 less single family) for the Southtown and Southtown Commons areas when comparing against the original Tentative Map Approvals. In addition, there is a net reduction of 3.33 acres of CN land, resulting in a total overall reduction of water demand of 6,378 gpd (Phillippi 2016c). The proposed project would be served with water service by the City of Vacaville (Figure 3.18-1).

Solid Waste

The City contracts with a private waste collection company to provide weekly solid waste, green waste, and recyclable material collection to Vacaville residents and commercial businesses. The California Department of Resources Recycling and Recovery (CalRecycle) has allocated the City with a disposal rate target of 6.5 pounds of waste per person per day (General Plan 2015). In 2010, the City of Vacaville's disposal rate was 4.9 pounds of waste per person per day, which was well below the CalRecycle target (General Plan 2015).

Recyclable material can also be taken to several drop-off recycling centers throughout the City, including a recycling center located at 855½ Davis Street. Recyclable material collected by the private waste collection company is sent to a material recovery facility. Solid waste collected from Vacaville is deposited at the Hay Road Landfill. In 2009, the landfill received 126,000 tons of solid waste, of which 48 percent was from Vacaville residents and businesses. The total capacity of the landfill is 37 million cubic yards. As of 2012, it is projected that the landfill will reach capacity in 2069 (General Plan 2015). Division 8.08 (Solid Waste, Yard Waste, and Household Hazardous Waste) of the Vacaville Municipal Code regulates the collection and disposal of solid waste, yard waste, and household hazardous materials (City of Vacaville Municipal Code 2016).

All Vacaville residents must pay to have their solid and yard waste collected. In addition, the Land Use and Development Code (Division 14.09 of the Municipal Code) requires that residential, commercial, business, industrial, and public districts provide areas for the collection of recyclable material and solid waste.

3.18.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, the General Plan EIR, the 2015 UWMP, the Urban Water Shortage Contingency Plan, the ECAS, Southtown Project EIR, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the impacts of the proposed project related to utilities and service systems in the City.

3.18.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact UTIL-1 Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Impact Analysis

The proposed project would involve the development of 15 single-family detached residential units. Based on anticipated development in 2035 under the General Plan and standard flow factors, it is projected that the SBF in 2035 would be 16.2 mgd (General Plan EIR 2013). This flow would exceed the current treatment plant capacity by about eight percent (General Plan EIR 2013).

Wastewater generated by the proposed project would be treated by the WWTP, which operates according to regulations by the Central Valley RWQCB and the Clean Water Act of 1972. The WWTP currently operates below its designed flow capacity of 15 mgd for SBF and 55 mgd during PHWWF. The most recent calculation was completed in June 2011 and determined that the theoretical SBF in 2010 was 8.36 mgd (General Plan EIR 2013). To analyze the changes in the projected sewer flows the original Master Plan projections were compared with the Proposed Revisions which include the approved and existing uses. Sewershed ST1848 includes the area known as Ashton Place Unit 3 and total projected sewer flow, per the Master Plan, from ST 1848 was calculated at 30,020 gpd (Phillippi 2016a). With Approved and existing projects and the proposed Ashton Unit 3 revision, the total projected flow from Sewershed ST1848 is 27,420 gpd. Sewer flow in Sewershed ST1848 is reduced from the original Master Plan by 2,600 gpd (Phillippi 2016a). The Master Plan for Sewershed ST09, the area that includes Ashton Place Unit 1 and 2 and Potters Place is reduced by 960 gpd with existing projects, approved projects, and the proposed revision (Phillippi 2016a). Sewershed ST04 is the area that includes Park Parish and total projected sewer flow, per the Master Plan, from ST04 was calculated at 38,150 gpd, resulting in a reduction of 710 gpd in Sewershed ST04 (Phillippi 2016a). In summary, comparing the projected sewer flows from the Ashton Place Units 1-3, Potters Place and Park Parish properties as originally intended versus the proposed sewer flows which would result from the conversion to Single Family Residential, sewer flow in Sewershed ST1848 has been reduced by 2,600 gpd from the original Master Plan; Sewer flow in Sewershed ST09 has been reduced by 960 gpd from the original Master Plan; and, sewer flow in Sewershed ST04 has been reduced by 710 gpd from the original Master Plan. . As such, the proposed project would not substantially increase current operating conditions; therefore, associated impacts related to wastewater treatment requirements would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-2 Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

Impact Analysis

As discussed in Section 2.0, Project Description, of this ISMND, the proposed project would construct an eight inch onsite water pipe system from the existing 12 inch water main pipe located in Cogburn Circle to provide water to the project site. In addition, the proposed project would construct two onsite eight inch sanitary sewer lines, which would connect to the existing eight inch sanitary sewer system along Cogburn Circle, where it would then be directed to the City's existing 24 inch sanitary sewer system in Vanden Road. Lot 1 would connect to the adjacent existing six inch sewer stub previously installed to the project site.

Wastewater Treatment Facilities

The WWTP has an average designed flow capacity of 15 mgd for SBF and 55 mgd during PHWWF. According to the General Plan EIR, the most recent calculation was completed in June 2011 and determined that the theoretical SBF in 2010 was 8.36 mgd, therefore the WWTP has approximately 6.6 mgd in unused capacity. As part of the Southtown Project development the project site is zoned CN, and was originally intended to be occupied by commercial uses. The Applicant is requesting to rezone the project site from CN to RM, and develop 15 two-story single-family residences. In order to assess the difference in projected sewer flows for the originally intended commercial use of the project site versus the proposed residential use, a Sewer Calculations Memo was prepared on October 21, 2016 (Appendix D).

The Sewer Calculations Memo utilized the Average Dry Weather Sewer Flow Rates from the City of Vacaville Standard Specifications with Revisions through 2012 (Table DS 6-1). According to the City's Standard Specifications, the Average Dry Weather Sanitary Flow Criteria indicates that the flow for service commercial and retail sales equals 1,900 gpd/acre. (Appendix D) (Phillippi 2016a). Sewershed ST1848 includes the proposed project. This area, previously designated as neighborhood commercial is being converted to 15 RMD housing units. For this shed area, the original Master Plan envisioned 114 residential units, 1.4 acres commercial and 7.0 acres of park. The proposed revisions along with the approved and existing uses would yield 108 residential units, 5.9 acres of park, and 1.0 acres of Public Use (Fire Station), for a total projected sewer flow of 30,020 gpd. With approved and existing projects and the proposed Ashton Place Unit 3 revision, total projected flow from Sewershed ST1848 is 27,420 gpd (Phillippi 2016a). There is a reduction of 2,600 gpd in Sewershed ST1848, therefore, impact to Sewershed ST1848 is less than significant.

The Master Plan for Sewershed ST09, which includes Ashton Place Unit 1 and 2 and Potters Place, envisioned 138 residential units in the original Master Plan. With existing projects, approved projects and the proposed revision, the total number of residential units is reduced to 134. The

sewer flow in Sewershed ST09 is reduced by 4 residential units times 240 gpd/du or 960 gpd, therefore impacts to Sewershed ST09 are less than significant.

Sewershed ST04 is the area that includes Park Parish. The Master Plan total projected sewer flow from Sewershed ST04 was calculated at 38,150 gpd (Phillippi 2016a). With approved and existing projects and the proposed Park Parish revision, total projected sewer flow from Sewershed ST04 is calculated at 37,440 gpd. In summary, there is a reduction of 710 pdg in Sewershed ST04; therefore, impacts are less than significant.

The proposed project would consist of 10 three-bedroom homes and 5 four-bedroom homes. Based on the City's specifications, it is assumed the average dry weather sanitary sewer flow rate for a three bedroom home is 200 gpd/du and the Average Dry Weather Sewer Flow rate for a four bedroom home is 240 gpd/du. The total projected Average Dry Weather Sewer Flow rate for the proposed project would equal:

(10 dwelling units X 200 gpd/du) + (5 dwelling units X 240 gpd/du) = 3,200 gpd

The proposed project would represent 0.05 percent of the 6.6 mgd in unused capacity at the WWTP. Thus, the proposed project's wastewater flows would represent only a nominal increase in the total daily amount of wastewater treated at the WWTP, and would be within the facility's permitted capacity. Therefore, impacts associated with the construction, or expansion of existing wastewater treatment facilities would be less than significant.

Water Treatment Facilities

The 2015 UWMP calculates the City's past, current, and projected water use and water supply through 2040. According to the UWMP, future water supply will be adequate to offset future water demands during normal, single-dry, and multi-dry years through 2040 (UWMP 2015). The City presently has a contracted water supply of 34,273 AF/YR (UWMP 2015). The City estimates future water use demand based on housing projections, using a water use factor of 183 gallons per capita per day. The potential water consumption for the proposed project, assuming 2.71 residents per dwelling unit, would be approximately 7,438.95 gpd or 8.33 AF/YR. Water consumption for the proposed project would represent approximately 0.024 percent of the City's potable water supply. The incremental water consumption associated with the proposed project would not represent a significant decrease in available water supply. In comparing the projected potable water requirements of the Ashton Place Units 1-3, Potters Place and Park Parish properties as originally intended (CN and Townhouses) versus the proposed potable water requirement which would result from the conversion to Single Family Residential (RMD), there is a net reduction of 3 residential units (60 less townhouses, 64 additional RMD single family and 7 less single family) for the Southtown and Southtown Commons areas when comparing against the original Tentative Map Approvals. In addition, there is a net reduction of 3.33 acres of CN land, resulting in a total overall reduction of water demand of 6,378 gpd (Phillippi 2016c). As such, the proposed project would not require the construction of new water treatment facilities or expansion of existing facilities; therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-3 Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

Impact Analysis

Surface water runoff from the project site would be directed to proposed area drains. These area drains would be connected to two12 inch and one 10 inch and one eight inch proposed onsite storm drain lines. The four onsite storm drain lines would then connect to the existing 18 inch public storm drain line located on the north side of Cogburn Circle. The stormwater would then be conveyed through existing public storm drain lines to the existing detention basin on the east side of Leisure Town Road.

It is assumed the top two feet of the project site would be graded 100 percent, and surface water flow would be directed to the onsite storm drains which connect to the onsite storm drain lines, and then discharged to the City maintained storm drain system located within Cogburn Circle (Figure 3.18-2). In addition, the project site would consist of 0.40 acre of landscaped areas. Where possible some runoff would be directed to landscaped areas for filtration and infiltration. As part of the Southtown Project EIR, stormwater drainage capacity was assessed. The project site is zoned for CN and originally intended for commercial use. The Applicant is requesting a zone change from CN to RM. Compared to residential uses, commercial uses typically generate greater surface water runoff due to the increase in impermeable surface area. The proposed project would not exceed the surface water runoff volumes previously considered in the Southtown Project EIR (pers. comms. Thomas Phillippi 2016). According to the Storm Drain Memo, conversion of the project site from commercial development to residential development would result in 44 perfect reduction in stormwater runoff in a 10 year storm event; the reduction is directly related to the coefficient of runoff, which is 44 percent higher for commercial developments over residential developments (Phillippi 2016b).

The stormwater drainage facilities would be designed to meet all applicable requirements and performance standards as outlined in the City's Stormwater Management Plan. During the City's Design Review of the proposed project, the Applicant would submit Stormwater Drainage Plans for review prior to the issuance of building permits to ensure all storm drains are designed to meet the City's performance standards. In addition, the proposed project would comply with the requirements of the Regional Water Quality Control Board (RWQCB) Order R2-2009-0074 and Order R2-2011-0083. As such, the construction of new or expansion of existing offsite stormwater

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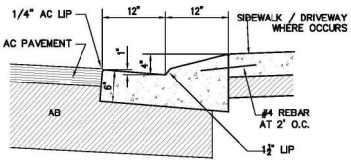

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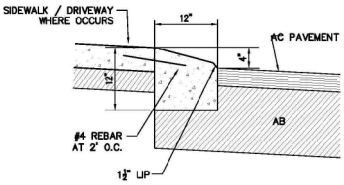

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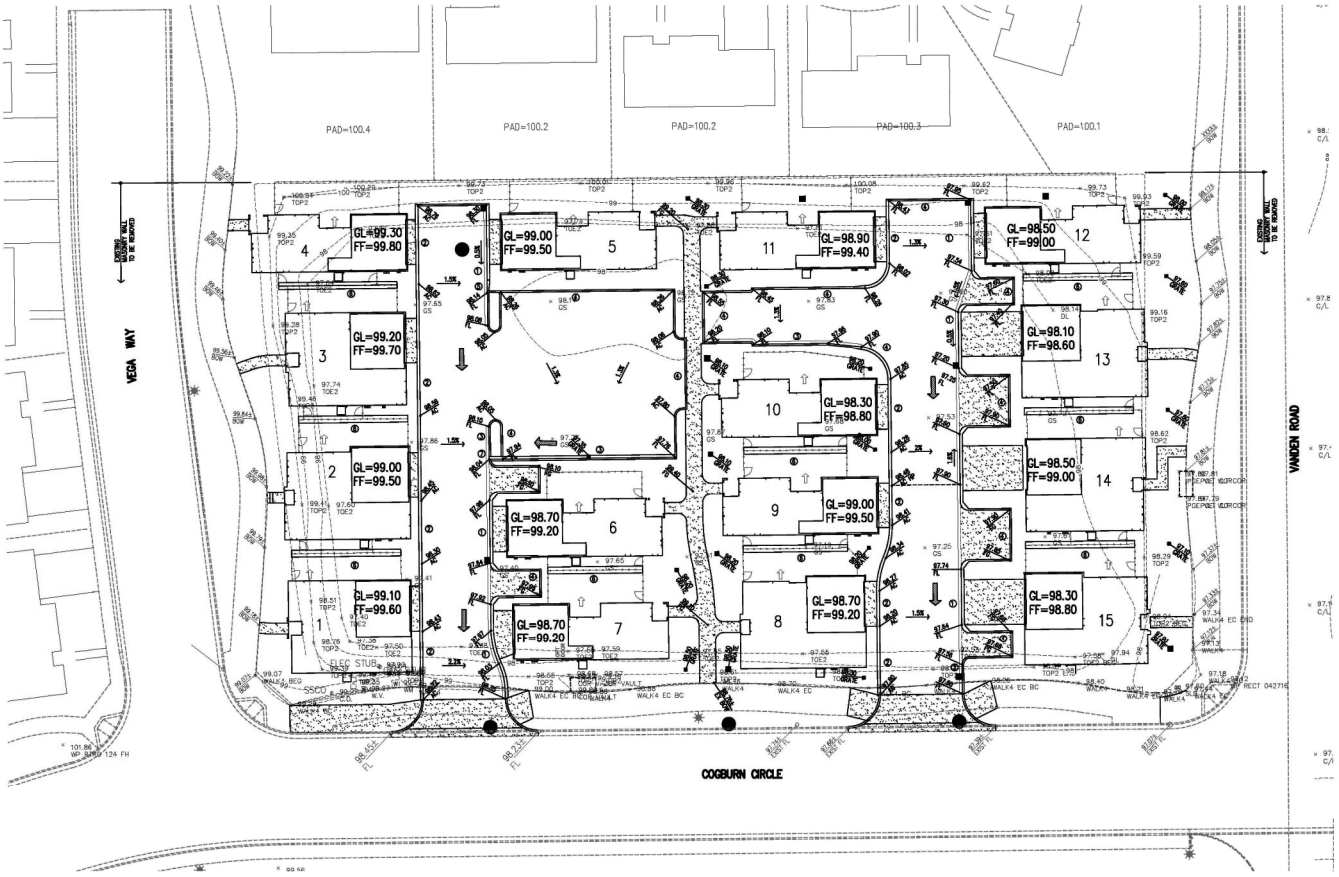

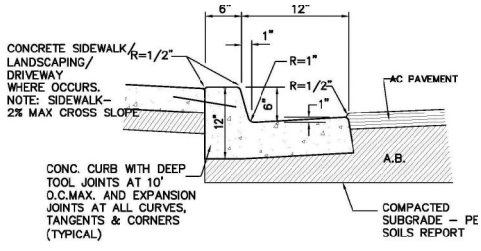

3 CURB & GUTTER
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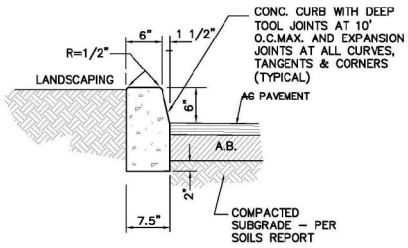
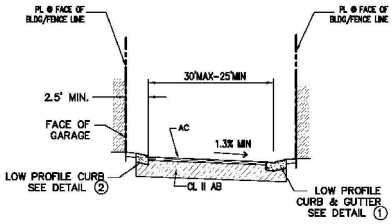
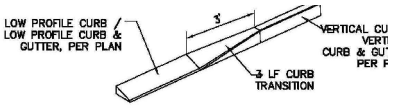


4 VERTICAL CURB
NOT TO SCALE

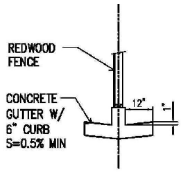
7 DRAIN–THRU GUTTER
NOT TO SCALE



PRIVATE ALLEY AND PRIVATE STREET
NOT TO SCALE 3.5" AC 13.0" AB TI=6 R=5



LOW PROFILE TO VERTICAL CURB TRANSITION
5 NOT TO SCALE



6 CURB AND GUTTER AT SIDE YARD FENCE
NOT TO SCALE

GL=GARAGE LIP
FF=FINISHED FLOOR

Note: Grading Plan data provided by Phillippi Engineering (PEI)

Not to Scale

Stantec

Ashton Place Unit 3 Project
Vacaville, California

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Figure 3.18-2. Grading Plan

Prepared: MNugent, 9/14/2016, Technical Review: ABC, 2014-01-16, Independent Review, ABC, 2014-01-16

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drainage facilities would not be required as part of the proposed project. Therefore, impacts associated with stormwater drainage facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-4 Have sufficient water supplies available to serve the proposed project from existing entitlements and resources, or are new or expanded entitlements needed?

Impact Analysis

According to the 2015 UWMP, projected water supply consistently exceeds water demand through 2040 for average years, single-year droughts, and the first year of multiple year droughts. The City estimates future water use demand based on housing projections. The 2015 UWMP assumes a water use factor of 183 gallons per capita per day. The potential water consumption for the proposed project, assuming 2.71 residents per residential unit, would be approximately 7,438.95 gallons per day (gpd) or 8.33 AF/YR. The City presently has a contracted water supply of 34,273 AF/YR. Based on the contracted water supply, the proposed project water consumption would represent 0.025 percent of the City's potable water supply. Therefore, the incremental water consumption by the proposed project would be sufficient and not require new or expanded entitlements. Impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-5 Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact Analysis

The WWTP has a design flow of 15 mgd for SBF and 55 mgd for PHWWF. Currently, the WWTP's wastewater generation rate is 8.36 mgd, providing up to 6.64 mgd of unused capacity. As described in Impact UTIL-2, an eight inch sewer line would be constructed to the existing eight inch sanitary sewer line in Cogburn Circle. As discussed in Impact UTIL-2, based on the City's Standard Specifications an Average Dry Weather Flow of 200 gpd (three bedroom home) and 240 gpd (four bedroom home) per residential unit is assumed. The expected wastewater flow from the proposed project would be 3,200 gpd, which represents approximately 0.05 percent of the 6.64 mgd in unused capacity. Thus, the WWTP has adequate capacity to serve the proposed project. Additionally, the sewer capacity has been analyzed by the City of Vacaville and it has been determined that sewer improvements are required. These improvements have been referred to as DIF 54 and consist of several line improvements. According to the Sewer Calculations Memo, Sewer flow in Sewershed ST1848 has been reduced by 2,600 gpd from the original Master Plan, Sewer flow in Sewershed ST09 has been reduced by 960 gpd from the original Master Plan, and, Sewer flow in Sewershed ST04 has been reduced by 710 gpd from the original Master Plan. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-6 Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact Analysis

The City contracts with a private waste collection company to provide weekly solid waste, green waste, and recyclable material collection to City residents and commercial businesses (General Plan 2015). Solid waste from the project site would be collected and deposited at the Hay Road Landfill, located at 6426 Hay Road, Vacaville, California, approximately 8.4 miles east of the project site. The landfill is approximately 640 acres and the total capacity is 37 million cubic yards. As of 2010, the landfill had a remaining capacity of approximately 30.4 million cubic yards, and is approximately 18 percent full (Calrecycle 2016). Recyclable materials can also be taken to Recology Vacaville Solano recycling center located at 855½ Davis Street, approximately 3.8 miles northwest from the project site or arranged to be collected on a regular basis through Recology Vacaville Solano.

The proposed project would consist of developing 15 single-family detached residential units. According to the General Plan EIR, the City uses a standard multiplier of 4.9 pounds of solid waste per day per resident. Based off of the California Department of Finance January 1, 2015 estimated average household size of 2.71 persons, the proposed project would dispose of 200 pounds of solid waste per day, or approximately 0.10 tons per day, as shown in Table 3.18-1.

Table 3.18-1: Estimated Project Solid Waste Generation

Project Component	Quantity	Generation Rate (lbs/day)	Pounds per Day	Tons per Day	Tons per year
Residential Units	15	13.27	200	0.10	37.23
Source: General Plan 2015.					

Based on the Hay Road Landfill permitted intake of 2,400 tons per day, project generated waste would represent approximately 0.004 percent of daily capacity. The proposed project contribution to solid waste facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-7 Comply with federal, State, and local statutes and regulations related to solid waste?

Impact Analysis

The proposed project would be served with curbside solid waste and recycling services, which are standard services for residential uses in the City. Solid waste disposal must follow the requirements of the contracted waste hauler and disposal facility, which follows federal, State, and local statutes and regulations related to the collection and disposal of solid waste.

In addition, California State Assembly Bill 939 (AB 939) mandates the reduction of solid waste disposal in landfills by 50 percent in 2000 and by 75 percent in 2020. Division 8.08 (solid waste, yard waste, and household hazardous waste) of the Vacaville Municipal Code implements the approved Source Reduction and Recycling Element required by AB 939, and regulates the collection and disposal of solid waste, yard waste, and household hazardous materials (General

Plan EIR 2013). The City's General Plan Policy PUB-P9.2 indicates that the City shall strive for a minimum 90 percent of City residents to participate in waste diversion programs (General Plan 2015). Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.19 MANDATORY FINDINGS OF SIGNIFICANCE

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

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Impact Analysis

As evaluated in this ISMND, the proposed project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. Mitigation Measures BIO-1, CUL-1, and CUL-2 have been included herein to lessen the significance of potential impacts to special-status species and habitats, and inadvertent discovery of cultural resources to reduce potential impacts to cultural resources as less than significant.

b) Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the effects of past projects, the impacts of other current projects, and the impacts of probable future projects)?

Impact Analysis

The Southtown Project EIR evaluated the cumulative effects associated with growth and development in the Southtown Area. Rezoning the project site from CN to RM would result in an increase in the criteria air emissions and an increase of VMT when compared to the Southtown Project EIR. While the proposed land use change would reduce the City's ability to reduce future emissions locally, it would not significantly alter the conclusions of the Southtown Project EIR for cumulative air quality and traffic impacts. Therefore, the proposed project would not result in any new cumulative impacts not previously identified in the Southtown Project EIR. Rezoning of project site and other parcels in the Southtown, Southtown Commons, and Vanden Meadows developments from commercial to residential may have a cumulative impact on the available parks. However, the proposed project includes payment of in-lieu payment for offsite recreation/open space and therefore, would not contribute to a cumulatively significant impact. Other projects would be subject to similar fee payment or include adequate open spaces as part of approval. All cumulative impacts resulting from the proposed project related to air quality, greenhouse gas, hydrology, land use, noise, and water quality, would be mitigated with the implementation of Mitigation Measures AIR-1, GHG-1, GHG-2, GHG-4, HYD-1, LU-1, NOI-1, TRANS-1, and TRANS-2.

c) Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?

Impact Analysis

All impacts identified in this ISMND are either less than significant after mitigation or less than significant and do not require mitigation. Therefore, the proposed project would not result in environmental effects that cause substantial adverse effects on human beings either directly or indirectly. Impacts would be less than significant with mitigation.

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