

California Environmental Quality Act

Initial Study

(As required by Sec. 15063 of the Public Resources Code)

Prepared: August 2017

- 1. **Project Title:** Altamira Affordable Apartments
- 2. **Lead Agency Name and Address:** City of Sonoma Planning Department
- 3. **Contact Person and Phone Number:** David Goodison, Planning Director
(707) 938-3681
- 4. **Project Location:** 20269 Broadway
- 5. **Project Sponsor's Name and Address:** Satellite Affordable Housing Associates
1835 Alcatraz Avenue
Berkeley, CA 94703
- 6. **General Plan Designation:** Mixed Use
- 7. **Zoning:** Mixed Use/Historic Overlay Zone
- 8. **Description of Project:**

Overview: The development plan calls 48 apartment units affordable at the Low and Very Low income levels. The units would be grouped within eight two-story building clusters, along with a single-story community room/office. The proposed mix of units consists of 23 one-bedroom apartments, 13 two-bedroom apartments and 12 three-bedroom apartments. Fifteen of the units would be affordable to very-low income individuals and households at 30% AMI. A schedule of units by affordability level and number of bedrooms is set forth in the table below:

Altamira Apartments: Affordability Level and Bedroom Count*				
Affordability/Bedroom	1	2	3	#/%
30% AMI	10	4	1	15/32%
40% AMI	2	0	4	6/13%
50% AMI	6	5	6	17/36%
60% AMI	5	3	1	9/19%
Totals	23/48%	12/25%	12/25%	

*Excludes manager unit.



Figure 1: Site Plan (Source: SAHA)

The placement of the buildings is intended to engage the two street frontages, provide a yard-to-yard relationship with the adjoining homes on the west, and create a central common open space area that retains two of the larger oak trees on the site. The one-bedroom units are placed on the west, adjoining the Bragg Street residences, as these units are more likely to be occupied by small households and seniors. The three-bedroom apartments, which are intended for larger families with children, adjoin the community room and the common open space area. This area would incorporate a play area for children, as well as raised garden beds available for resident use. Pedestrian paths would provide access throughout the site. The main parking lot would be placed along the northern edge of the site, with a smaller court, designed to meet Fire Department turn-around requirements, projecting off of it. The placement of the parking lot limits vehicle access to Broadway and minimizes potential noise conflicts with the adjoining residences on the west. A total of 75 off-street parking spaces are proposed

9. Site, Setting, and Context:

The subject property, which has an area of 1.98 acres, is a flat, rectangular parcel located in southern Sonoma, at the northwest corner of Broadway and Clay Street. Currently, the site is vacant with respect to buildings, but there are number of trees on the site, including several large oak trees. The property had been developed with a home, a detached garage, a former water tower, and several barns/chicken coops, but all of these structures were removed in 2008. Two billboards, formerly located at the southeast corner of the site, were removed in 2017. The property is located within the city limits of Sonoma and it has a General Plan land use designation and zoning designation of Mixed Use. The Mixed Use zone allows a residential density of up to 20 units per acre, although that may be increased with a density bonus for affordable housing. A commercial component is not necessarily required in the Mixed Use zone, meaning that a 100% residential development may be allowed on the site, subject to findings being made by the Planning Commission. The property is also identified in the City's Housing Element as a "Housing Opportunity Site," meaning that it is considered to be a suitable candidate for development with affordable housing.

Adjoining uses and zoning designations are as follows:

North: An office building and associated parking (Chase Receivables)/Mixed Use

South: A hotel (the Lodge at Sonoma), across Clay Street/Gateway Commercial

East: A small shopping center and Traintown, across Broadway/Gateway Commercial, unincorporated territory

West: Single family residences (part of the St. Francis Place subdivision)/Medium Density Residential.

10. Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement).

Project financing is expected to be obtained from several sources, including the Sonoma County Community Development Department and tax credit financing (awarded by the Department of Housing and Community Development).

Improvements within the Highway 12 right-of-way will require Caltrans review and the issuance of an encroachment permit.

11. Application of CEQA requirements.

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The City of Sonoma is the CEQA lead agency. Prior to making a decision to approve the Project, the City must identify and

document the potential significant environmental effects of the Project in accordance with CEQA. This Initial Study has been prepared under the direction of the City to fulfill the CEQA requirements.

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Vicinity Map



Project Summary

<i>Project Name:</i>	Broadway Affordable Housing Project
<i>Property Address:</i>	20269 Broadway
<i>Applicant:</i>	Satellite Affordable Housing Associates
<i>Property Owner:</i>	Sonoma County Housing Authority
<i>General Plan Land Use:</i>	Mixed Use
<i>Zoning - Base:</i>	Mixed Use
<i>Zoning - Overlay:</i>	Historic
<i>Summary:</i>	Proposal to develop a 48-unit affordable rental housing project.

Zoning Designations

- R-HS Hillside Residential (1 D.U./10 acres, maximum)
- R-R Rural Residential (2 D.U./acre, maximum)
- R-L Low Density Residential (2-5 D.U./acre)
- R-S Sonoma Residential (3-8 D.U./acre)
- R-M Medium Density Residential (6-10 D.U./acre)
- R-H High Density (9-12 D.U./acre)
- R-O Housing Opportunity (15-20 D.U./acre)
- R-P Mobile Home Park (7 D.U./acre, maximum)
- MX Mixed Use (12 D.U./acre, maximum)
- C Commercial (15 D.U./acre, maximum)
- C-G Commercial-Gateway (15 D.U./acre, maximum)
- W Wine Production
- P Public Facility
- Pk Park
- A Agriculture

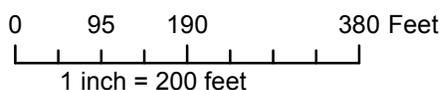
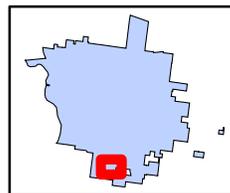


Figure 2: Vicinity Map

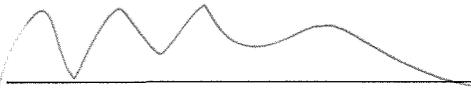
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Air Quality | <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Storm Water |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Transportation / Traffic |
| <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Noise | <input checked="" type="checkbox"/> Utilities / Service Systems |
| <input type="checkbox"/> Geology / Soils | <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.


8-25-17

Signature Date

David Goodison, Planning Director City of Sonoma, Planning Department

Printed name For (Lead Agency)

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to Projects like the one involved (e.g. the Project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, “Earlier Analyses,” may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project’s environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to less than significance.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

a) *Have a substantial adverse effect on a scenic vista?*

The City of Sonoma Municipal Code (SMC 19.43.130.C) defines “scenic vistas” as follows:

“... a public view, benefitting the community at large, of significant features, including hillside terrain, ridgelines, canyons, geologic features, and community amenities (e.g., parks, landmarks, permanent open space).”

Additionally, SMC section 19.40.130.D, states that new structures should be constructed in a manner that preserves scenic vistas by maintaining view corridors. This section states that examples of view corridors include unbuilt space between buildings, view opportunities created from undeveloped lots, airspace created from public parks and open spaces, and open spaces created from the deliberate spacing of buildings on the same lot or adjacent lots.

Based on these definitions, scenic vistas potentially affected by the Project consist of views of the hills to the north and west as seen from adjoining public streets and sidewalks (Broadway and Clay Street). The site itself, because it is not a park, a landmark, or permanent open space, is not considered to be part of a “scenic vista” as defined in the Municipal Code. Existing residences adjoining the Project site block views of the hills to west. Views of the hills to north across the Project site (from Clay Street) are limited as they are substantially obscured by existing buildings and vegetation. Consequently, construction of the Project would not have a substantial adverse impact on a scenic vista and would result in a *less-than-significant impact*.

b) *Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?*

The Project is not located along a Scenic Highway; therefore, the Project would have **no impact** on scenic resources associated with a Scenic Highway.

c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

The Project would redevelop the property with a one-story community building, eight two-story apartment buildings, and a parking lot, thereby altering the existing visual character of the Project site and its surroundings. These structures range in height from 20 to 30 feet and none of them would exceed the 30-foot building height

allowance of the Mixed Use zone. The Project site is located within an urban setting with development on all sides, including a hotel, an office building and associated parking, a recreational destination (TrainTown), and single family residences. In addition, the development of the site with higher density housing is anticipated in the City’s General Plan, both through the Mixed Use designation applied to the property and its inclusion in the Housing Element inventory of Housing Opportunity sites.

The factors used by the City of Sonoma to ensure new development is visually compatible with its surroundings include compliance with applicable standards as set forth in the Development Code, consistency with applicable design guidelines, and an analysis of Project-specific site design and architecture as it relates to the visual character of the area.

Consistency with Development Standards

Applicable development standards that relate to the visual character of proposed development include height limits, setback requirements, and limitations on Floor Area Ratio and building coverage.

Summary of Development Code Compliance (Standards Related to Building Height and Mass)		
Development Feature	Development Code Allowance (SMC Chapter 19.32, Table 3-24)	Project
Building Setbacks	Front/Streetside: 20 ft; Side: 7 ft.; Rear 20 ft	Front/Streetside: 9-24 ft; Side: 15-75 ft.; Rear 15-22 ft
Floor Area Ratio	1.0	0.53
Building Coverage	60%	28%
Maximum Roof Height*	30 feet	20-30 feet

*Except that, pursuant to SMC 19.40.040.B.1, a height of 36 feet may be allowed, subject to Use Permit approval, to accommodate third-floor residential units.

As shown in the Table above, for the most part, the Project complies with Development Code standards relating to massing, setbacks, and building height. However, there are two areas where exceptions are proposed:

- Building 7, located on the west side of the site adjoining a residential development, is proposed with a 15-foot setback rather than a 20-foot setback.
- Along the Broadway frontage, where a 20-foot setback is normally required, Building 3 is proposed with a 13-foot setback and the Community Building is proposed with a 9-foot setback.

These areas of exception are discussed in greater detail below.

Consistency with Design Guidelines

The design guidelines of the Development Code applicable to the proposed Project are set forth in Chapter 19.42 of the Sonoma Municipal Code (Historic Preservation and Infill in the Historic Overlay District). An analysis of Project consistency with these design guidelines is set forth below:

Review of Project Consistency with the Design Guidelines for Infill Development in the Historic Overlay District (SMC 19.42.050)	
Guideline	Project Response/Compliance
<i>Site Plan Considerations</i>	
<p>a. New development should continue the functional, on-site relationships of the surrounding neighborhood. For example, common patterns that should be continued are entries facing the public right-of-way, front porches, and garages/parking areas located at the rear of the parcel.</p>	<p>Consistent with the overall development pattern of Broadway and Clay Street, the apartment buildings and community meeting room are designed and placed to engage the street. The apartment buildings are designed with doors, window, and porches facing the street frontages.</p> <p>Along the west side of site, the Project maintains a rear-yard to rear-yard relationship with the adjoining residences on Bragg Street. The parking lot extends along the south side of the site, adjoining a commercial development, with a secondary parking court projecting into the site, minimizing its visual presence and its exposure to adjoining residences on the west.</p>
<p>b. Front setbacks for new infill development should follow either of the following criteria: i) Equal to the average front setback of all residences on both sides of the street within 100 feet of the property lines of the new project; or ii) Equal to the average front setback of the two immediately adjoining structures on each side of the new project.</p>	<p>Along the Broadway frontage of the site, this guideline is not applicable as there are no adjoining residences within 100 feet. Along the Clay Street frontage, the 15-foot setback is consistent with the adjoining residence on the west.</p>
<p>In cases where averaging between two adjoining existing structures is chosen, the new structure may be averaged in a stepping pattern. This method can work especially well where it is desirable to provide a large front porch along a portion of the front facade.</p>	<p>Not applicable.</p>
<i>Architectural Considerations</i>	
<p>a. New infill structures should support the distinctive architectural characteristics of development in the surrounding neighborhood, including building mass, scale, proportion, decoration/detail, door and window spacing/rhythm, exterior materials, finished-floor height, porches, and roof pitch and style.</p>	<p>The closest residential neighborhood to the Project is the St. Francis Place development, a single-family subdivision. Because the Project is proposed as an apartment development, it has different design characteristics. However, in their mass, scale, and detailing, the apartment clusters facing the street are evocative of single-family development.</p> <p>Each building presents its narrow face to the street and features porches, entry walks, and low landscaping fences designed to engage the street. The building forms are simple, with sloping gable roofs, but the elevations feature porches, eaves, and insets that help reduce the scale of the buildings.</p>

Review of Project Consistency with the Design Guidelines for Infill Development in the Historic Overlay District (SMC 19.42.050)	
Guideline	Project Response/Compliance
b. Because new infill structures are likely to be taller than one story, their bulk and height can impose on smaller-scale adjoining structures. The height of new structures should be considered within the context of their surroundings. Structures with greater height should consider providing greater setbacks at the second-story level, to reduce impacts (e.g., blocking or screening of air and light, privacy, etc.) on adjoining single-story structures.	A comparison of building heights in the immediate neighborhood demonstrates that the building heights of the proposed Project are substantially comparable to surrounding development. (See Figure 4.)
c. The incorporation of balconies and porches is encouraged for both practical and aesthetic reasons. These elements should be integrated to break up large front facades and add human scale to the structures.	The development incorporates porches, eaves, and inset building elements as integrated architectural elements.
d. The proper use of building materials can enhance desired neighborhood qualities (e.g., compatibility, continuity, harmony, etc.). The design of infill structures should incorporate an appropriate mixture of the predominant materials in the surrounding neighborhood whenever possible. Common materials are brick, horizontal siding, shingles, stone, stucco, and wood.	A mix of building materials and colors are proposed, subject to the review and approval of the Design Review and Historic Preservation Commission. The siding is a durable cement board with integral color for long-lasting quality.
e. Color schemes for infill structures should consider the color schemes of existing structures in the surrounding neighborhood in order to maintain compatibility and harmony. Avoid sharp contrasts with existing building colors.	The colors of the development will be subject to the review and approval of the Design Review and Historic Preservation Commission.
<i>Sustainable Construction Techniques</i>	
a. Building forms that reduce energy use may be radically different than traditional architectural types. Careful and sensitive design is required in order to produce a contrast that is pleasing rather than jarring. The use of appropriate colors and textures on exterior materials is one method of linking a contemporary building design to a traditional neighborhood context.	With the exception of the Community Building, which has a more contemporary appearance, the building forms employed in the Project represent traditional architectural types. As noted above, the design details and colors of the development would be subject to the review and approval of the Design Review and Historic Preservation Commission.
b. Roof gardens, solar panels, and other sustainable construction features should be fully integrated into the design of new construction, rather than applied at the conclusion of the design process.	While maintaining traditional building forms, the project has been designed from the outset to incorporate an array of sustainable design features in a comprehensive manner, including solar panels. The siding, the deep wall thickness, and trusses are designed for thermal efficiency. Dual-pane windows prevent heat transfer and the Energy Star composition shingle roof is light-colored for high solar reflectance.

In summary, the Project is substantially consistent with the design guidelines applicable to infill development in the Historic Overlay zone.

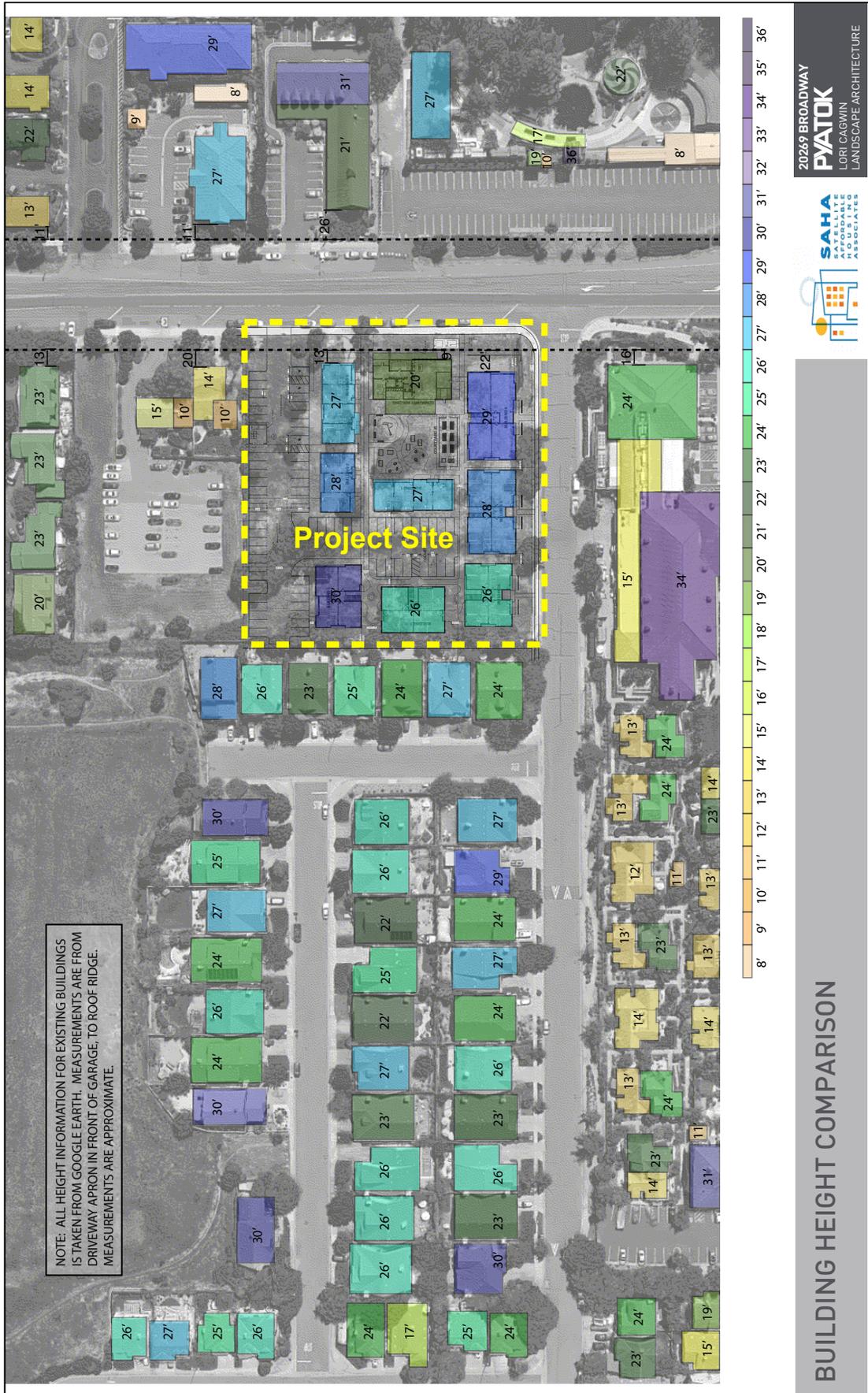


Figure 4: Comparison of Building Heights (Source: SAHA)

Site Design and Architecture

Site Planning: The development plan calls 48 apartment units grouped within eight two-story building clusters, along with a single-story community room/office. The placement of the buildings is intended to engage the two street frontages, provide a yard-to-yard relationship with the adjoining homes on the west, and create a central common open space area that retains two of the larger oak trees on the site. The one-bedroom units are placed on the west, adjoining the Bragg Street residences, as these units are more likely to be occupied by small households and seniors. The three-bedroom apartments, which are intended for larger families with children, adjoin the community room and the common open space area. Pedestrian paths provide access throughout the site. The main parking lot would be placed along the northern edge of the site, with a smaller court, designed to meet Fire Department turn-around requirements, projecting off of it. The placement of the parking lot limits vehicle access to Broadway and minimizes potential noise conflicts with the adjoining residences on the west. The site is relatively flat and somewhat lower in elevation than the adjoining St. Francis Place residential development on the west. Based on the grading and drainage plan (Figure 6, Section 9), the construction of building pads would increase the building slab height by approximately 12-24 inches compared to existing grade, which is generally consistent with the grade of adjoining homes on the west. As shown in Figure 4, preceding, proposed building heights are comparable to that of existing development in the vicinity.

Broadway: Because of the prominence of the site on Broadway corridor, the Broadway elevations of the Project represent an important element in the evaluation of potential impacts on visual character. The Project site plan calls for three buildings along the Broadway frontage, with the Community Building placed at the center, flanked by two apartment buildings. Building 4, the apartment building located at the northeast corner of the site (at Broadway and Clay Street) features conforming setbacks of 15 feet from the south property line (along Clay Street) and 22 feet from the east property line (along Broadway). The Community Building features a minimum setback of 9 feet and Building 3, the northeast structure along the Broadway frontage, features a 13-foot setback, both of which are less than the normal requirement of 20 feet. Because the Community Building has a maximum height of 21 feet, its presence on Broadway would not be overwhelming. Building 3 is taller, featuring a ridge height of 27 feet, but is setback 13 feet, and its traditional gabled form and its orientation, with the narrow side of the building facing the street, emulate other examples of development along Broadway. In general, and as shown in the perspective simulation below, the Project appropriately addresses the Broadway frontage and the proposed setback exceptions would not result in a significant impact with respect to the visual character of the area.



Figure 5: Broadway/Clay Street Perspective (Source: SAHA)

Clay Street: The Clay Street elevation is another key factor in the evaluation of visual compatibility, as this element of the Project serves as a transition to the residential neighborhood to the west. The Clay Street frontage of the Project features three apartment buildings, designed as duets that break down into six distinct building elements. These are two story buildings with maximum ridge heights of 29, 28, and 26 feet, diminishing from east to west, towards the adjoining residential neighborhood. Each building presents its narrow face to the street and features porches, entry walks, and low landscaping fences designed to engage the street. The building forms are simple, with sloping gable roofs, but the elevations feature porches, eaves, and insets that help reduce the scale of the buildings. Setbacks between the buildings are a minimum of ten feet and the setback from Clay Street is 15 feet. As shown in the perspective simulation below, the Clay Street elevation of the Project engages the street and creates an appropriate transition to the residential neighborhood on the west.



Figure 6: Clay Street Perspective (Source: SAHA)

Adjoining Residences: Although it does not represent a public view, the relationship of the Project to the adjoining residences on the west is a consideration in the evaluation of potential visual impacts. The Project site adjoins six single-family homes along its western boundary. Three apartment buildings are proposed in that portion of the site, Building 6, Building 7 and Building 8 (from south to north). All three buildings are two story structures, with peak ridge heights as follows:

- Building 6: 26 feet.
- Building 7: 26 feet.
- Building 8: 30 feet.

Internally, the buildings are setback 20 feet from one another. As noted above, Buildings 6 and 8 feature conforming 20-foot setbacks from the western property line. Building 7, however, features a 15 foot setback, which represents an exception to the normal standard. To reduce the prominence of this building relative to neighboring homes on the west, the western half the structure features only ground-floor units, allowing the roof to shed down to a ten-foot

plate height. All three buildings make use of the following design elements to improve compatibility with the neighboring residences on the west:

- The roofs are oriented such that they shed down to the west, rather than presenting gable faces.
- There are no west-facing windows on the second floors.
- No solar panels would be placed on the west-facing roof elements.

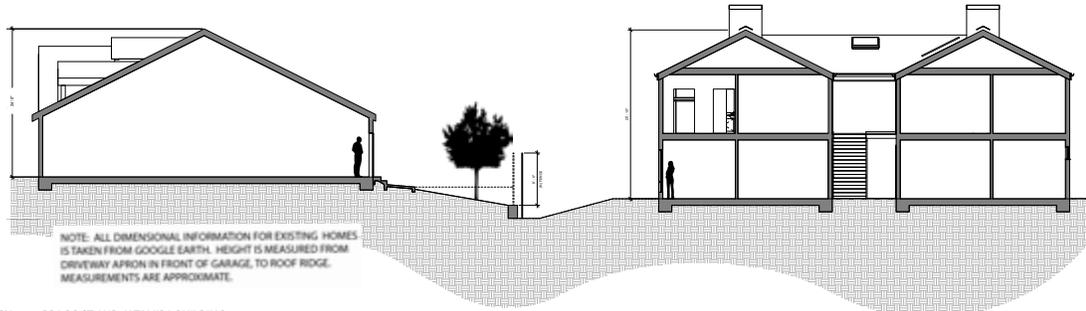
To illustrate the the relationship of the Project with the adjoining residences on the west, cross-sections and street elevations have been developed, as depicted on the following page.

In summary, the Project is substantially consistent with the applicable standards and guidelines of the Development Code intended to ensure that new development is visually compatible with its surroundings. In addition, in its site planning and architecture, the Project has been designed to appropriately address Broadway, Clay Street, and the adjoining residences to the west. Although the development of the Project would change the visual character of the site, the Project is consistent with the development objectives of the General Plan and in it its design it is visually compatible with its surroundings. Based on these on these considerations, the Project would not substantially degrade the existing visual character or quality of the site or its surroundings and the impact would therefore be *less-than-significant*.

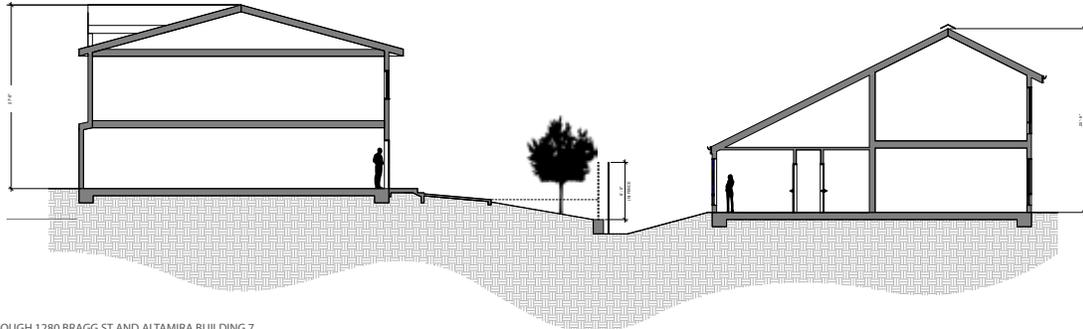
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Exterior lighting would be necessary for the development, such as exterior building lighting and parking lot lighting for safety and security. However, this lighting would be typical of residential development throughout the City. In addition, all proposed exterior lighting would require review and approval by the City's Design Review and Historic Preservation Commission (DRHPC) and would be subject to the exterior lighting standards of the City's Development Code¹, which specify that exterior light fixtures must be shielded to reduce or eliminate light spillage off-site. Another consideration with respect to glare is the placement of solar panels. While the Project is designed to accommodate solar panels, they will not be placed on the roofs facing the single-family residences on the west. Lastly, the proposed exterior materials and finishes do not include materials that are highly reflective or that would otherwise tend to produce glare. For these reasons, the Project will not create a new source of substantial light or glare that would adversely affect daytime or night-time views in the area. This would be a *less-than-significant* impact.

¹ City of Sonoma Development Code § 19.40.030

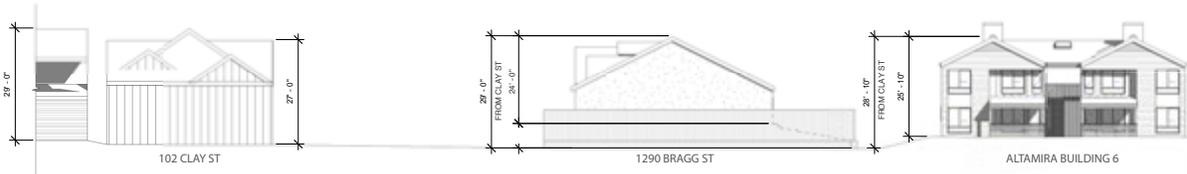


SECTION THROUGH 1290 BRAGG ST AND ALTAMIRA BUILDING 6
NOT TO SCALE



SECTION THROUGH 1280 BRAGG ST AND ALTAMIRA BUILDING 7
NOT TO SCALE

NEIGHBORING CLAY STREET SECTIONS



CLAY STREET ELEVATION - ZOOMED
NOT TO SCALE

NOTE: DIMENSION AND APPEARANCE OF EXISTING HOMES ARE APPROXIMATED BASED UPON INFORMATION FROM GOOGLE EARTH. HEIGHTS ARE MEASURED FROM TOP OF DRIVEWAY APRON TO TOP OF RIDGE.



CLAY STREET ELEVATION
NOT TO SCALE

NEIGHBORING CLAY STREET ELEVATIONS



Figure 7: Cross-sections and Elevations (Source: SAHA)

2. AGRICULTURAL RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land, conversion of forest land to non-forest use, or involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Important Farmland or other agricultural resources, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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

The Project site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation. The Project site is identified as “Urban and Built-up Lands” on the Important Farmland Map maintained by the Department of Conservation². **No impact** would occur.

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

Because the subject property is not under a Williamson Act contract, **no impact** would occur.

² <http://maps.conservation.ca.gov/ciff/ciff.html>

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The Project site does not contain any forest lands as defined in Public Resources Code section 12220(g) and is not zoned for forest uses. In addition, the Project is not located in the vicinity of offsite forest resources. For these reasons, there would be **no impact**.

d) Result in the loss of forest land, conversion of forest land to non-forest use, or involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?

See response 2.c. There would be **no impact**.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Important Farmland or other agricultural resources, to non- agricultural use.?

Because neither the Project site nor any parcels in proximity to it support farmland or other agriculture uses or resources, the development of the Project would have **no impact** in this area.

3. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors or airborne dust affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

In May 2017, the Bay Area Air Quality Management District (BAAQMD) adopted updated guidelines³ for analyzing air quality impacts under CEQA, including suggested thresholds of significance and associated screening criteria for the analysis of air quality impacts from development projects.

³ BAAQMD, Air Quality Guidelines, May 2017

(a) Conflict with or obstruct implementation of the applicable air quality plan?

The San Francisco Bay Area Air Basin (SFBAAB) is classified by BAAQMD as non-attainment for ozone and inhalable particulates (PM10). To address these exceedances, BAAQMD, in cooperation with the Metropolitan Transportation Commission and the Association of Bay Area Governments, prepared the Bay Area 2005 Ozone Strategy (BAOS) in September 2005 and Particulate Matter Implementation Schedule (PMIS) in November 2005. The PMIS discusses how BAAQMD implements the California Air Resources Board's 103 particulate matter control measures. Later, BAAQMD adopted the 2010 Bay Area Clean Air Plan (Plan), which updates the BAOS. BAAQMD guidance states that "if approval of a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project would be considered consistent with the 2010 [Plan]" (BAAQMD, 2010a). As indicated under Topics 3(b) through 3(e), below, the project would not result in significant and unavoidable air quality impacts. Therefore, the Project would be consistent with the Plan, and the impact would be *less-than-significant*.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Operational Emissions

As indicated under Topic 3(a), above, the SFBAAB is classified by BAAQMD as non-attainment for ozone and inhalable particulates (PM10). BAAQMD sets forth screening criteria in the 2017 BAAQMD CEQA Guidelines to indicate the minimum development size (by land use category) at which air pollutant emissions could exceed significance thresholds and result in potentially significant impacts related to violation of air quality standards or cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. The Guidelines set forth the following screening criteria for low-rise apartment development based on the above thresholds: 451 apartment units for operational emissions and 240 units for construction emissions. The Guidelines also specify that the project must also meet two other criteria: (1) the BAAQMD's Basic Construction Mitigation Measures must be implemented during construction; and (2) the project does not include demolition, simultaneous occurrence of more than two construction phases, simultaneous construction of more than one land use type; extensive site preparation; or extensive material transport (more than 10,000 cubic yards of soil). As further explained below, the Project would meet these criteria, and therefore the impact would be *less-than-significant with mitigation*.

Construction-Related Emissions

Project-related excavation, grading, and other construction activities at the Project site may cause wind-blown dust that could generate particulate matter into the atmosphere. Fugitive dust includes not only PM10 and PM2.5 that could contribute to violation of air quality standards, but also larger particles that can represent a nuisance impact. Dust can be an irritant, causing watering eyes or irritation to the lungs, nose, and throat. To assess whether a proposed project would result in the generation of construction-related criteria air pollutants and/or precursors that exceed BAAQMD thresholds of significance, the BAAQMD guidelines set forth screening criteria as set forth below.

1. *The project is below the applicable screening level size, (identified as 240 units for low-rise apartment development.*

The Project features 48 units, a number well below the screening threshold.

2. All BAAQMD Basic Construction Mitigation Measures would be included in the project design and implemented during construction.

All basic construction mitigation measures would be required through Mitigation Measure 3.c.

3. Construction-related activities would not include any of the following:
 - Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing.
 - Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would occur simultaneously).
 - Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site) (not applicable to high density infill development).
 - Extensive site preparation (i.e., greater than default assumptions used by the Urban Land Use Emissions Model [URBEMIS] for grading, cut/fill, or earth movement); or
 - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

The Project would not result include any of the activities identified above. There are no buildings on the site, so no demolition would occur. The Project would be developed in a single construction phase. The Project consists of a single land use type. Project construction would not entail extensive site preparation or materials transport.

As shown above, the Project complies with BAAQMD screening criteria.

Depending on exposure, adverse health effects can also occur due to specific contaminants, such as lead or asbestos from existing buildings, or contaminated soils from excavation, that may be constituents of dust. As discussed in Section 8, Hazards and Hazardous Materials, the Project site is not identified on the Hazardous Waste and Substances Site List (Cortese List) for Sonoma County. In addition, the Project site has been reviewed for possible contamination with hazardous materials through two Phase 1 Environmental Site Assessments, prepared in 2007 and in 2016. Both evaluations concluded that the site has no history of use or other indications that would suggest the presence of any hazardous materials. Nevertheless, because the site is proposed for residential development, the 2016 site assessment suggests that limited soils sampling be undertaken to identify potential residual contaminants, if any, that might be associated with former agricultural uses. This recommendation would be implemented as Mitigation Measure 8.d. With this mitigation measure, fugitive dust emissions would not contain contaminated soils.

In addition, as discussed above BAAQMD recommends using specific best management practices, which have been a practical and effective approach to control fugitive dust emissions. The guidelines note that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. Absent the implementation of these measure, the Project could have a significant impact with respect to construction dust emissions. To address this issue, the following mitigation measure is required:

Mitigation Measure 3.c: To limit the Project's construction-related dust and criteria pollutant emissions, the following Bay Area Air Quality Management District (BAAQMD)-recommended Mitigation Measures shall be included in the Project's grading plan, building plans, and contract specifications:

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

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

With this requirement, potential impacts in this area would be reduced to a *less-than-significant level*.

(d) Expose sensitive receptors to pollutant concentrations

BAAQMD specifically defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas. The nearest sensitive receptors are the St. Francis Place residential subdivision immediately to the west. Additional sensitive receptors include the following:

- Marcy Court, located 170 feet to the north.
- Woodworth Lane, located 210 feet to the northeast.
- The Broadway Villas senior care facility, located 335 feet to the east.
- The Adele Harrison Middle School, located 320 feet to the north east.
- The Sonoma Valley High School, located 975 feet to the north east.

Construction of the Project would result in short-term diesel exhaust particulate matter (DPM), which is defined as a toxic air contaminants (TAC), from onsite heavy-duty equipment, as well as from soils-hauling activities. Exposure of sensitive receptors is the primary factor used to determine health risk. Exposure is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance.

According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period. As explained in the BAAQMD Guidelines, "*current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities.*" The State Office of Environmental Health Hazard Assessment (OEHHA) recommends that districts assume a minimum of two years of exposure for health risk analysis. Based on the estimated construction duration of approximately 18 months, construction activities would fall below the minimum two-year exposure criteria for preparation of a Health Risk Assessment. Further, although on-road heavy-duty diesel vehicles and off-road

equipment would be used during construction, emissions would be temporary and variable in nature and would not be expected to expose sensitive receptors to substantial air pollutants. In addition, the proposed Project would be subject to City regulations limiting idling to no more than five minutes, which would further reduce nearby sensitive receptor exposure to temporary and variable DPM emissions. Finally, based on the BAAQMD Guidelines for conducting health risk assessments, the Project’s construction period would not trigger longer-term exposure periods of 9, 40 and 70 years that are typical of health risk assessment. As such, the limited construction duration of the Project would be sufficient to avoid TAC health impacts to nearby sensitive receptors and the Project impact in this area would be *less-than-significant*.

BAAQMD recommends that risk and hazard screening analyses identify all emission sources within 1,000 feet of a Project site. Common stationary source types of TAC and PM2.5 emissions include gasoline stations and dry cleaners, all of which are subject to BAAQMD permit requirements. Regarding mobile sources, proposed projects that would attract high numbers of diesel-operated equipment—such as distribution centers, quarries, or manufacturing facilities—would potentially expose existing or future sensitive receptors to substantial risk levels or health hazards (BAAQMD, 2011). No such uses are located within 1,000 feet of the Project site. Moreover, the proposed Project is a 48-unit residential development that would not include permitted stationary source generators of toxic air contaminants. Therefore, the impacts to sensitive receptors from pollutant concentrations would be *less-than-significant*.

e) Create objectionable odors and/or airborne dust affecting a substantial number of people?

Land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. Although the Project would include compost bins in the community garden at the center of the site, these bins would be typical of those found in residential areas within the City of Sonoma and would not result in substantial new odors affecting a substantial number of people.

During the construction phase, operation of diesel equipment on-site, as well as from architectural coatings and asphalt off-gassing, could generate construction-related odors. These odors would be short-term in nature and would cease soon after Project completion. Impacts to adjacent land uses would be *less-than-significant*.

As discussed in Section 3.b-c, above, dust generated by construction activities associated with the Project could result in a significant impact. However, the implementation of Mitigation 3.c., as set forth above, would reduce the impact in this area to a *less-than-significant* level.

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 identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

The Project site is bordered by urban development on all sides with no connectivity to undeveloped open space. In addition, the site was previously developed with a single family dwelling and was grazed by goats. Sometime following the removal of the residence, the site was used as a construction staging area for a PG&E project. There are 44 living trees on the site, including eight oak trees. The remaining trees are primarily fruit trees and black walnuts. According to the California Natural Diversity Database (CNDDB) there are three Federally/State listed endangered or threatened species for the USGS quadrangle that covers the Project site: California freshwater shrimp (*Syncaris pacifica*), Sonoma sunshine (*Blennosperma bakeri*), and bank swallow (*Riparia riparia*). The first two species are either aquatic or wetland dependent and the third requires nesting habitat in banks or bluffs along rivers, streams, and coastal areas. Since there is no surface water, wetlands, or riparian habitat on the site these species would not be affected by the Project. Other species of special concern that have been documented to occur in the Sonoma quadrangle would likely not be present on-site given the lack of suitable habitat in conjunction with existing conditions on and around the Project site, including the former residential development noted above, which diminished the value of the site for wildlife. These findings are set forth in a biological assessment of the property performed in 2016⁴, which included a field survey. As documented in the assessment, vegetation on the site primarily consists of non-native trees, shrubs and grasslands, which have limited habitat value especially in conjunction of adjoining urban uses. No special status plant or animal species were found on the site and the biological assessment concluded that “... the disturbed nature of the Project Site does not provide suitable habitat for any of the special status animal species known to occur within the area. All of the special status animal species found in the general area require habitat types which

⁴ *Biological Assessment Report for 20269 Broadway in Sonoma, California*, Huffman-Broadway Group, May 5, 2016

are not found at the Project Site.” Based on the field survey, the biological assessment found that with the possible exception of impacts on nesting birds, the development of the Project would not have an impact on any candidate species or sensitive habitats. However, the possibility of disturbing nesting migratory birds on the property as a result of tree removal is a potentially significant impact. A mitigation measure has been included addressing the timing of tree removal, consistent with the requirements of the City’s Tree Ordinance. With implementation of Measure 4.a, below, potential impacts to nesting birds would be *less-than-significant*.

Mitigation Measure 4.a: The following measures shall be implemented as necessary during the construction phase of the project for the protection of nesting birds:

1. Grading or removal of nesting trees and habitat shall be conducted outside the nesting season, which occurs between approximately February 15 and August 15, if feasible.
2. If grading between August 15 and February 15 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grassland and trees shall be performed by a qualified biologist within 7 days of ground breaking.
3. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent “take” of individual birds that could begin nesting after the survey. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.
4. The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFG. To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.
5. After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones. The buffer zone shall remain in place until after the young have fledged.

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

As documented in the biological assessment, the property does not support riparian habitat. **No impact** would occur.

c) Have a substantial adverse effect on federally-protected wetlands?

As documented in the biological assessment, there are no federally-protected wetlands on the site, therefore, **no impact** would occur.

d) Interfere substantially with the movement of any fish or wildlife species or on any wildlife corridor, or impede the use of native wildlife nursery sites?

The Project site is bordered by urban development on all sides with no connectivity to undeveloped open space. In addition, the Project site does not adjoin/encompass a stream or other waterway and the property is not used as a native wildlife nursery site. As a result, the Project would not interfere with the movement of any fish or wildlife species or any wildlife corridors. **No impact** would occur.

e) Conflict with any local policies or ordinances protecting biological resources?

The proposal would not conflict with any local policies or ordinances protecting biological resources, including the City’s Tree Ordinance (Chapter 12.08 of the Sonoma Municipal Code). As required by Section 12.08.035 of the Tree

Ordinance an arborist report has been prepared for the Project⁵. The Tree Ordinance requires that tree removal associated with project development shall be offset with the planting of replacement trees at a minimum ratio of 1:1, a requirement that is implemented through standard conditions of project approval. **No impact** would occur.

f) Conflict with the provisions of any adopted or approved local, regional, or state habitat conservation plan?

No habitat conservation plans have been prepared addressing the subject property. As a result, the Project would not conflict with any adopted or approved habitat conservation plans. **No impact** would occur.

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 defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

The site is undeveloped and there are no historic structures or sites in proximity to the subject property. Therefore, **no impact** would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource?

To assess the site for archaeological resources, a professional evaluation was performed, including archival research and a field survey⁶. No such resources were found. However, the potential exists for the accidental discovery of archaeological resources during Project construction., which represents a potential significant impact. To address this contingency, the report recommends that procedures be in place to address the potential for the accidental discovery. This recommendation would be implemented through Mitigation Measure 5.b, as follows:

Mitigation Measure 5.b: Construction personnel involved with earthmoving shall be alerted to the potential for the discovery of prehistoric materials and tribal cultural resources. Such materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles,

⁵ *Arborist Report / Tree Protection Plan*, Sherby Sanborn Consulting Arborist, June 2, 2017

⁶ *Historical Resources Study of the Property at 20269 Broadway (APN 128-181-001)*, Sonoma, Sonoma County, California, Eileen Barrow, M.A. for Tom Origer and Associates, March 27, 2017.

handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

If prehistoric or historic-period archaeological/tribal cultural resources are encountered, all construction activities within 50 feet shall halt and the Planning Director shall be notified. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with Public Resources Code (PRC) Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning and construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the Planning Department. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2.

Implementation of Mitigation Measure 5.b would reduce this impact to a *less-than-significant level*.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. The National Resources Conservation Service has classified site soils as belonging to the Wright loam series. The Wright loam series, which generally extends to a depth of 7-8 feet, was formed from a mixture of old weathered basic alluvium and sedimentary alluvium and is underlain by the Sonoma Volcanics. Because the Wright loam series and the Sonoma Volcanics are not typically associated with fossils, it is unlikely fossils will be encountered during construction activities. However, it is possible that paleontological resources may be encountered during Project ground-disturbing activities where such activities as grading or trenching would occur below the Project area's soil layers (approximately 5 feet). This is a potentially significant impact. Should a paleontological resource be encountered, the following will reduce impacts to a *less-than-significant level*.

Mitigation Measure 5.c: If paleontological resources are identified during construction activities, all work in the immediate area will cease until a qualified paleontologist has evaluated the finds in accordance with the standard guidelines established by the Society of Vertebrate Paleontology. If the paleontological resources are considered to be significant, a data recovery program will be implemented in accordance with the guidelines established by the Society of Vertebrate Paleontology.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Although impacts to human remains are not anticipated, there is always the remote possibility that human remains are present below the ground surface and could be unearthed during ground disturbing activities. This is a potentially significant impact. Implementation of Mitigation Measure 5.d would reduce this impact to a *less-than-significant level*.

Mitigation Measure 5.d: If human remains are encountered, all work shall stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist shall be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American

Heritage Commission shall be contacted by the Coroner so that a “Most Likely Descendant” can be designated and further recommendations regarding treatment of the remains is provided.

e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?

The cultural resource survey did not identify any such resources on the site. However, the potential exists for the accidental discovery of tribal resources during Project construction, a possibility which represents a potentially significant impact. To address this contingency, the report recommends that procedures be in place to address the potential for the accidental discovery. This recommendation would be implemented through Mitigation Measure 5.b, as set forth above. With the requirement of this mitigation measure, potential impacts would be reduced to a *less-than-significant* level.

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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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?*

The Project site would not be subject to surface fault rupture. In general, surface fault rupture occurs along active faults. While the Project site is located in a seismically active region, the City of Sonoma, including the Project site, is not affected by an Alquist-Priolo Earthquake Fault Zone pursuant to Division of Mines and Geology Special Publication 42⁷. Therefore, **no impact** would occur.

ii) *Strong seismic ground shaking?*

The City of Sonoma is located in the seismically active San Francisco Bay Area, in proximity to several mapped active or potentially active regional faults. The Rodgers Creek fault is nearest to the Project site, located approximately five miles to the southwest on the western side of the Sonoma Mountains. As a result, the Project could result in the exposure of people, structures, and/or property to seismic ground shaking. While hazards associated with potential ground shaking cannot be eliminated, potential impacts resulting from seismic ground shaking would be reduced to the greatest extent feasible through compliance with the City of Sonoma's building code requirements, which requires that new structures be designed and constructed in a manner to maximize seismic safety, in conformance with the 2016 California Building Code. This would be considered a **less-than-significant** impact.

iii) *Seismic-related ground failure, including liquefaction?*

Refer to Section 6.a.ii and 6.c. The Project impact would be **less-than-significant**.

iv) *Landslides?*

The site is relatively flat and is not located in proximity to any hillside area. Therefore, **no impact** would occur.

b) *Result in substantial soil erosion or the loss of topsoil?*

The Project site is relatively flat, ranging in elevation between 56.1 to 57.5 feet above mean sea level. Given this topography, the development of the Project is not expected to generate significant soil erosion and/or loss of topsoil. Nonetheless, grading and/or earthmoving activity associated with construction of the Project could result in a substantial temporary increase in erosion or the loss of topsoil. However, erosion control measures to be implemented during construction would be identified in the erosion and sediment control plan (ECP) required for the Project under the City's grading ordinance (Chapter 14.20 of the Sonoma Municipal Code) and included in the Project Storm Water Pollution Prevention Plan (SWPPP) for construction. See response to Item 9.a and 9.c regarding construction-related erosion. With the implementation of ECP and Phase II NPDES requirements, construction-related impacts associated with erosion and/or siltation would be considered **less-than-significant**.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Existing development on and around the Project site, constructed on similar soils and bedrock geology has not experienced landslides, lateral spreading, subsidence, liquefaction, or collapse. Based on this past experience, it is not

⁷ *Fault-Rupture Hazard Zones in California*, Earl W. Hart and William A. Bryant, California Geological Survey, Special Publication 42, supplements 1 and 2 1999.

anticipated that unstable geologic units or soil would affect the Project. In addition, pursuant to Chapter 4 of the California Residential Code (CRC) and Chapter 18 of the California Building Code (CBC), a soils and geotechnical investigation (prepared by a licensed geotechnical engineer) is required for apartment developments. As normally required, the recommendations identified in the soils and geotechnical investigation, such as appropriate foundation systems, soil stability measures, on-site soil preparation and compaction levels, must be incorporated into the permits and construction plans for the Project (i.e., improvement plans, grading permit, and building permits), which are subject to review and approval by the City Engineer and Plans Examiner prior to the issuance of any building permits for grading or building construction. Incorporation of the recommendations into the plans and permits for the Project would ensure that potential impacts relating to unstable geologic units or soils would be *less-than-significant*.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Refer to Section 6.c. Impacts in this area would be *less-than-significant*.

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 or wastewater?*

There are no septic systems on the site and the use of septic systems would not be allowed in conjunction with the development of the Project. **No impact** would occur.

7. GREENHOUSE GAS EMISSIONS: 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

On June 2, 2010 the Bay Area Air Quality Management District (BAAQMD) adopted guidelines for analyzing air quality impacts under CEQA, including suggested thresholds of significance and associated screening criteria for the analysis of greenhouse gas (GHG) impacts from development projects. Under the most recent BAAQMD guidelines, which were updated in May 2017, land use development projects that generate GHG emissions below 1,100 metric tons of carbon dioxide equivalent (MTC2e) per year are considered to have a less than significant impact. The BAAQMD screening criteria indicate that residential development projects of less than 78 dwelling units would not exceed the GHG operational threshold of 1,100 MTC2e per year. The proposed Project would result in a net increase of 48 residential units on the site, below the BAAQMD threshold. Accordingly, the Project would be considered to have a *less than significant impact* with respect to GHG emissions.

b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The proposed development would be consistent with the following State and local plans, policies, and requirements addressing GHG reduction:

State Regulations Addressing GHG Reduction:

California Building Code – Building and Energy Efficiency Standards: Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect on July 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (non-residential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards went into effect on January 1, 2017. Under the 2016 Standards, residential buildings are required to be 28 percent more energy efficient than the 2013 Standards while non-residential buildings are required to be 5 percent more energy efficient than the 2013 Standards.

California Building Code – CALGreen: The California Green Building Standards Code (Part 11, Title 24, known as “CALGreen”) establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, were updated in 2013, and became effective January 1, 2014.

2006 Appliance Efficiency Regulations: The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. Though these regulations are often viewed as “business as usual,” they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

The Project will be developed in compliance with these requirements, as enforced through the normal application of the Building Permit plan check process.

Local Plans, Policies, and Regulations addressing GHG Reduction:

City of Sonoma General Plan/Green Building Code: The City of Sonoma 2020 General Plan sets forth policies promoting sustainable practices such as not using renewable resources faster than they can regenerate, not consuming non-renewable resources faster than renewable alternatives can be substituted for them, and ensuring that pollution and waste are not emitted faster or in greater volumes than natural systems can absorb, recycle, or render them harmless. As part of the implementation of these policies, the City adopted the State of California Green Building Code which raised the level of construction standards in the City to encourage water and resource conservation, reduce water use generated by construction projects, increase energy efficiency, provide durable buildings that are efficient and economical to own and operate, and promote the health and productivity of residents, workers, and visitors to the City. Beginning January 1, 2014, the 2013 California Green Building Standards Code (CALGreen) became effective

for new buildings and certain addition or alteration projects throughout California. The City of Sonoma has adopted and amended CALGreen as part of the City’s Municipal Code to require CALGreen+Tier 1 level of compliance for all new buildings (except the Tier 1 Energy Efficiency measures). The City of Sonoma requires that project applicants hire a third-party green building special inspector to verify compliance with CALGreen requirements as amended by the City of Sonoma. Revisions to CALGreen became effective on July 1, 2015. The Project will be developed in compliance with CalGreen requirements, as enforced through the normal application of the Building Permit plan check process.

2016 Climate Action Plan Measures: Beginning in May of 2013, the City began participating in the development of a County-wide Greenhouse Gas Reduction Implementation Program, subsequently renamed Climate Action 2020. Climate Action 2020 is a collaborative effort among all nine cities and the County of Sonoma to take coordinated action in reducing GHG emissions on a county-wide basis. Through the implementation of this program, participating jurisdictions would achieve compliance with Bay Area Air Quality Management District (BAAQMD) guidelines and other related policies that establish reduction targets for GHG emissions, including AB 32, CEQA, and local GHG reduction goals. The development of the draft Plan was led by the Regional Climate Protection Authority (RCPA), with the assistance of a Working Group comprised of planning staff from each of the 10 jurisdictions of Sonoma County, including the City of Sonoma.

On August 15, 2016, the City Council began its review of the draft Climate Action 2020 Plan (CAP). For Sonoma, a total of 22 Climate Action Measures were recommended for Council consideration. Although the County-wide adoption of Climate Action 2020 Plan was subsequently postponed as a result of litigation brought against the RCPA, the City Council decided to take separate action to begin implementation of the measures identified in the CAP planning process. On November 21, 2016, the City Council adopted Resolution 40-2016, adopting the local measures identified for Sonoma through the CAP planning process. The proposed Project is consistent with and would help implement measure 2-L1 (Solar in new residential development), measure 4-L4 (affordable housing linked to transit), and measure 11-L2 (water conservation for new construction).

Because the proposed development would not conflict with State and local plans, policies, and requirements addressing GHG reduction, it would have *no impact* in this area.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

The proposed residential development would not involve the routine transport, use, or disposal of hazardous materials and would not be expected to generate hazardous emissions. Thus, **no impact** would occur.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials (including, but not limited to, oil, pesticides, chemicals, or radiation) into the environment?*

Refer to Section 8.a. **No impact** would occur.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

The Project site is located within one-quarter mile of the Sonoma Valley High School and the Adele Harrison Middle School. As discussed in Section 8.d., below, the property’s historical site use has included a rural residence with the potential for having older buildings painted with lead based paint, and small scale agricultural activities that may have included the use of pesticides. If such materials are present, they could be released into the air as a result of grading activities. This represents a potentially significant impact. To address this potential, limited soils sampling shall be required and, depending on the findings of the sampling, the preparation and implementation of a Soils Management Plan may also be required. With these requirements, as set forth in in Mitigation Measure 8.d, below, **a less-than-significant impact** would occur.

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?*

The Project site is not identified on the Hazardous Waste and Substances Site List (Cortese List) for Sonoma County. In addition, the Project site has been reviewed for possible contamination with hazardous materials through two Phase 1 Environmental Site Assessments, prepared in 2007 and in 2016. Both evaluations concluded that the site has no history of use or other indications that would suggest the presence of any hazardous materials⁸. However, the 2016 assessment observes that: “*The property’s historical site use has included a rural residence with the potential for having older buildings painted with lead based paint, and small scale agricultural development that may have included the use of pesticides.*” In light of this possibility and because the site is proposed for residential development, the 2016 site assessment suggests that limited soils sampling be undertaken to identify potential residual contaminants, if any. This recommendation would be implemented as a mitigation measure:

Mitigation Measure 8.d: The preparation and implementation of a Soils and Testing and Management Plan (STMP) by a qualified consulting firm shall be required. The STMP shall address a) sampling and testing of shallow soils to identify potential residual contaminants potentially associated with the former residential and agricultural use of the site, as called for in the Phase I Environmental Site Assessment 20269 Broadway, Sonoma, CA (EGS, 2016); b) clean-up, disposal, and/or remediation procedures if any such contaminants are identified in excess of established safety thresholds; and, c) any required coordination with the Sonoma County Department of Environmental Health and/or other responsible agencies. Soils testing and any required removal or remediation shall be duly implemented prior to the issuance of any grading or construction permit.

With this mitigation measure, potential impacts would be reduced to a *less-than-significant* level.

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?

Because the Project is not within within an airport land use plan or within two miles of a public airport or public use airport, **no impact** would occur.

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?

Because the Project is not located within the vicinity of a private airstrip, **no impact** would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The City of Sonoma adopted an Emergency Operations Plan in 2009 to plan responses to emergency situations and disasters that may affect the city. The Project would not involve any changes that would interfere with or impair implementation of the Emergency Operations Plan. As set forth in the Transportation analysis, the Project would provide adequate emergency access in compliance with Fire Department requirements. Therefore, **no impact** would occur.

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?

The Project site is not located within or adjacent to a wildland area. **No impact** would occur.

⁸ Phase 1 Environmental Site Assessment 20269 Broadway Sonoma, California Sonoma County APN 128-181-001, Environmental Geology Services, August 10, 2016

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) Violate any water quality standards or waste discharge requirements?

The Clean Water Act (CWA) prohibits the discharge of pollutants from point sources to Waters of the U.S. except where those discharges are authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Stormwater runoff from the Project site (a pollutant) will discharge to Fryer Creek (a Water of the U.S.) via the City of Sonoma’s Municipal Separate Storm Sewer System (MS4), which is a point source. All stormwater discharges from

the Project site are thereby prohibited except to the extent that they are authorized following implementation of applicable waste discharge requirements in the City of Sonoma's NPDES Permit (CAS000004) and in the statewide Construction General Permit (CAS000002).

The City's NPDES permit requires that all applicable projects prepare and submit an Erosion and Sediment Control Plan for review and approval by the City prior to issuance of a building or grading permit. The Erosion and Sediment Control Plan outlines Best Management Practices (BMPs) that, when implemented, reduce the quantity of construction-related pollutants in stormwater runoff discharging from a project site to the maximum extent practicable.

Under the statewide Construction General Permit, the applicant would be required to submit a Notice of Intent (NOI) with the State Water Resource Control Board's (SWRCB) Division of Water Quality. The NOI would include general information on the types of construction activities that would occur on the site. The applicant would also be required to submit a site-specific plan called the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would include a description of appropriate Best Management Practices (BMPs) to minimize the discharge of pollutants from the site.

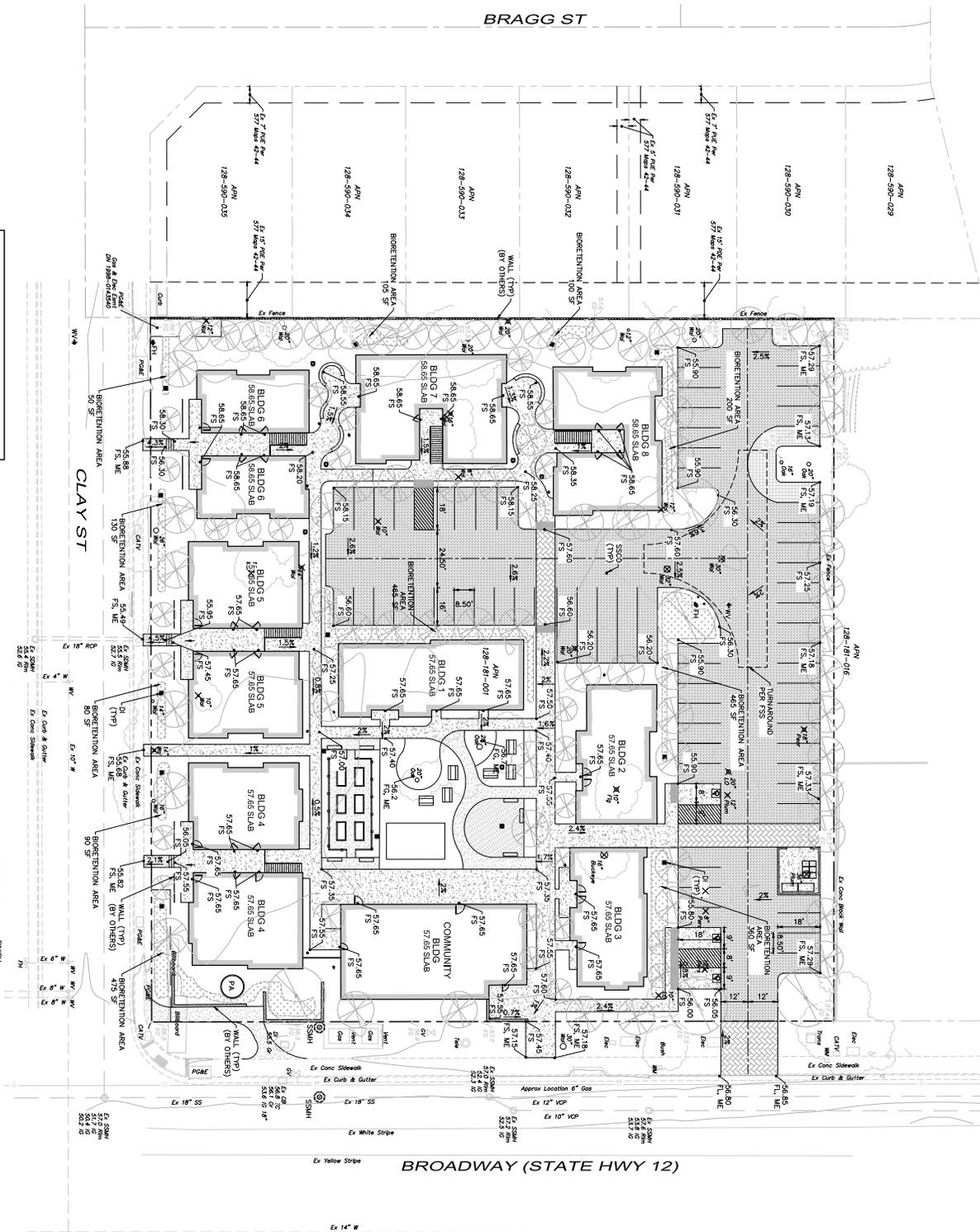
Construction-related erosion control and water quality BMPs identified in the SWPPP generally include soil stabilization techniques such as: hydroseeding and short-term biodegradable erosion control blankets; silt fences or some kind of inlet protection at downstream storm drain inlets; post-construction inspection of all drainage facilities for accumulated sediment; and post-construction clearing of all drainage facilities of debris and sediment. Finally, the Project applicant would be required to submit a Notice of Termination (NOT) once construction is complete and final stabilization of the site has been achieved.

The City's NPDES permit also requires that all applicable projects prepare and submit a Stormwater Control Plan (SCP) for review and approval by the City prior to issuance of a building or grading permit. The SCP outlines BMPs that, when implemented, reduce the quantity of pollutants in stormwater runoff discharging from a project site to the maximum extent practicable. The SCP also outlines BMPs that, when implemented, reduce the total volume of stormwater runoff from the Project site (retention) and attenuate peak flows (detention). In addition, the SCP will outline a mechanism for ensuring maintenance of the planned BMPs in perpetuity. The preliminary grading and drainage plan developed for the Project demonstrates that BMPs have been accounted for in the site plan (see Figure 8, below).

With the implementation of these standard requirements, **no impact** to water quality standards and/or waste discharge requirements would occur.

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

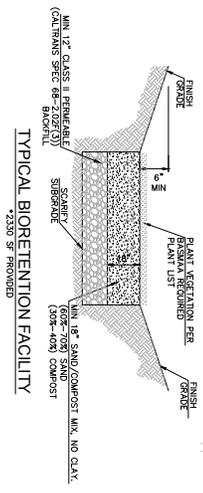
The Department of Water Resources (DWR) defines groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, the Project site is located within the Sonoma Valley groundwater sub-basin. Natural recharge in the sub-basin predominantly occurs where stream channels cut into the alluvial fan deposits. Areas of low relief and sufficiently permeable soil also allow for some slow infiltration from precipitation. The Project would increase the amount of impervious surface on the site. However, the site does not include a stream channel, and site soils (Wright loam) are characterized poorly drained with low permeability and thus would not allow for a significant amount of infiltration of runoff into the underlying groundwater basin. Regardless Stormwater Mitigation Plan will be



HATCHING LEGEND:

[Hatched Pattern]	PATHWAY	[Hatched Pattern]	TURF BLOCK
[Hatched Pattern]	CHISEL	[Hatched Pattern]	PATHWAY (S/D)
[Hatched Pattern]	HANDSCAPE	[Hatched Pattern]	RUBBER MAT
[Hatched Pattern]	STAMPED ASPHALT	[Hatched Pattern]	TRUNCATED DOWNS PER CIRC 118-247

NOTE: REFER TO ARCHITECTS AND LANDSCAPE ARCHITECTS PLANS FOR COLORS, MATERIALS, SIZE, AND STRUCTURAL SECTIONS ON ALL SURFACES.



ABBREVIATIONS

AAI	ADG	AG	AL	AN	APN	AR	AS	AT	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
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LEGEND

[Symbol]	PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	[Symbol]	CHUB & CUTTER
[Symbol]	[Symbol]	[Symbol]	PROPERTY BOUNDARY
[Symbol]	[Symbol]	[Symbol]	SHAWNEE CENTER & WALKWAY
[Symbol]	[Symbol]	[Symbol]	WATER LINE & DATE VALUE

SHEET INDEX

1. PRELIMINARY GRADING & DRAINAGE PLAN
 2. PRELIMINARY UTILITY PLAN

Figure 8: Preliminary Grading and Drainage Plan (Source: SAHA)

required for the Project for the Project to allow for treatment and infiltration of surface run-off. For these reasons, the Project would not significantly interfere with groundwater recharge. In addition, the Project would not involve the construction of new groundwater wells for Project water supplies. Water for the proposed Project would be supplied by the City of Sonoma. The City of Sonoma obtains its water from the Sonoma County Water Agency (SCWA) and City wells. The majority of water used in the City is supplied by SCWA. City wells are considered a secondary water source used only to supplement deliveries from SCWA during peak demands. On an annual basis, water drawn from City wells typically constitutes approximately 10% of total municipal water use. Based on these factors, the proposed Project would not result in the substantial depletion of groundwater supplies. Project impacts on groundwater resources are therefore considered *less-than-significant*.

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?

Potential impacts associated with erosion and/or siltation are considered to be primarily related to construction-related activities. The Project would involve clearing, grading, and trenching activities for the installation of required drainage, roadway, and utility improvements as well as site preparation. Existing vegetative cover and structural improvements that currently help to stabilize site soils would be removed from most of the site and construction operations associated with the Project could present a threat of soil erosion from soil disturbance by subjecting unprotected bare soil areas to the erosional forces of runoff. However, erosion control measures to be implemented during construction would be included in the required Storm Water Pollution Prevention Plan (SWPPP) for the Project as well as the erosion and sediment control plan (ECP) required by the City's grading ordinance (Chapter 14.20 of the Sonoma Municipal Code). See also responses to Items 6.b and 9.a regarding construction-related erosion. With the implementation of ECP and Phase II NPDES requirements, construction-related impacts associated with erosion and/or siltation would be considered *less-than-significant*.

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?

The Project site is relatively flat ranging between 56.1 to 57.5 feet above mean sea level and there are no streams or rivers on or adjacent to the site that would be affected by the Project. As normally required, the Project would require installation of on-site drainage improvements that would locally alter the existing drainage pattern of the site to reduce nuisance flooding on site.

The proposed development would increase the amount of impervious surface on the site, which would increase the volume and peak rate of stormwater runoff from the site. The City's NPDES Permit requirements call for the implementation of post-construction Best Management Practices to prevent increases in storm water runoff from development and redevelopment. Consistent with the NPDES requirements, the Project would be required to submit a Stormwater Control Plan demonstrating how the site drainage will be designed to retain the first inch of rainfall on-site (see response to Item 9.a).

Subject to the City's standard NPDES requirements, as set forth above, the Project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. As a result, this would be considered a *less-than-significant impact*.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Pollutants from the proposed Project would likely be consistent with medium-density urban residential areas. Increases in the levels of oil and grease, petroleum hydrocarbons, metals, and possibly nutrients on the Project site are likely. However, the City's NPDES Permit requires implementation of post-construction Best Management Practices to treat and filter storm water runoff prior to it leaving the site or entering the public storm drainage system. Pursuant to the City's NPDES requirements, a Final Stormwater Control Plan would be required as part of the public improvement plans submittal, subject to review and approval by the City Engineer prior to issuance of a building or grading permit. Compliance with the City's NPDES requirements would ensure that potential adverse impacts to water quality are *less-than-significant*.

f) Otherwise substantially degrade water quality?

Impacts will be *less-than-significant*. See responses to Items 9.a, 9.c, and 9.e.

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?

According to the applicable Flood Insurance Rate Map (Map Number 06097C0936E, Panel 936 of 1150), the Project site is not located within a 100-year flood hazard area. The property is located within an area designated as "Other Areas, Zone X," which are areas determined to be outside of the 0.2% annual chance floodplain. Housing would not be placed within a 100-year flood hazard area. **No impact** would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The Project would not place structures within a 100-year flood hazard area (refer to Section 9.g above). **No impact** would occur.

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?

The Project would not place people or structures within a 100-year flood hazard zone (refer to Section 9.g above). The Project site is not located below a levee or dam. As a result, the Project would not expose people or structures to a significant risk of loss, injury, or death involving flood hazards. **No impact** would occur.

j) Expose people or structures to inundation by seiche, tsunami, or mudflow?

Sonoma is not located in the vicinity of a large inland water body, along coastal waters, or in the path of a potential mudflow. **No impact** would occur.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) Physically divide an established community?

The Project site is an infill parcel located within an urban setting and is surrounded by commercial and residential development. As a result, the proposed residential development would not physically divide the community. **No impact** would occur.

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?

General Plan Consistency: The Project site has a land use designation of “Mixed Use,” a designation that encompasses a variety of purposes, including to provide additional opportunities for affordable housing, especially for low and very low income households. The designation allows a density up to 20 residential units per acre; however, the land use definition specifically acknowledges that higher densities may be allowed through the State-mandated density bonus process. Because 32% of the units would be affordable at the Very Low Income level and the remainder would be affordable at the Low Income level, under State law, the Project qualifies for a 35% density bonus, as well as other development concessions (Government Code 65915 - 65918). The proposed Project density amounts to 24 units per acre, which is within the allowance provided for under State law.

Project consistency with applicable General Plan policies adopted for the purpose of avoiding or mitigating an environmental effect is summarized in the following table:

Summary of General Plan Policy Consistency	
General Plan Policy	Project Response
Community Development Element	
Protect important scenic vistas and natural resources, and incorporate significant views and natural features into project designs. (CD 5.3)	As discussed in Section 1 of the Initial Study, the Project will not have a significant impact on scenic vistas.

Promote higher density, infill development, while ensuring that building mass, scale, and form are compatible with neighborhood and town character. (5.5)	The Project is an infill development proposed at the high end of allowable density. As discussed in Section 1 of the Initial Study, the Project will be visual compatible with its surroundings and will not degrade the visual quality of the site or its surroundings.
Environmental Resources Element	
Preserve habitat that supports threatened, rare, or endangered species identified by State or federal agencies. (ER 2.2)	As discussed in Section 4 of the Initial Study, the Project site does not support any threatened, rare, or endangered species identified by State or federal agencies, with the possible exception of nesting migratory birds. Mitigation Measure 4.a would reduce potential impacts in this area to a less-than-significant level.
Protect and, where necessary, enhance riparian corridors. (ER 2.3)	As discussed in Section 4 of the Initial Study, the Project site does not support any riparian corridors.
Protect Sonoma Valley watershed resources, including surface and ground water supplies and quality. (ER 2.4)	As discussed in Section 9 of the Initial Study, the Project will not have a significant impact on groundwater resources.
Require erosion control and soil conservation practices that support watershed protection. (ER 2.5)	The Project will incorporate erosion control and soil conservation practices that support watershed protection (see Section 4 of the Initial Study).
Preserve existing trees and plant new trees. (ER 2.6)	There are 44 living trees on the site, including eight oak trees. The remaining trees are primarily fruit trees and black walnuts. The four largest oak trees are proposed to be preserved, while the remaining trees are proposed for removal. As required under the City's Tree Ordinance, replacement trees will be required at a minimum ratio of 1:1 (see Section 4 of the Initial Study).
Require development to avoid potential impacts to wildlife habitat, air quality, and other significant biological resources, or to adequately mitigate such impacts if avoidance is not feasible. (ER 2.9)	Potential impacts on wildlife and other biological resources are discussed above. In addition, Mitigation Measures have been identified to reduce potential impacts on Air Quality to a less-than-significant level (see Section 3 of the Initial Study).
Encourage construction, building maintenance, landscaping, and transportation practices that promote energy and water conservation and reduce greenhouse gas emissions. (ER 3.2)	The Project provides for roof-top solar panels, low-water use landscaping, and the use of sustainable building materials. The Project complies with applicable local policies aimed at reducing greenhouse gas emissions (see Section 7 of the Initial Study).
Circulation Element	
Ensure that new development mitigates its traffic impacts. (CE 3.7)	The Project will be required to mitigate potential traffic impacts by: 1) Maintaining required sight distance at the Project entrance with the installation of red-curbings; and, 2) Re-striping Broadway with a two-way left-turn lane for the approximately 770 feet between the existing two-way left-turn lane and striping north and south of the missing segment. See Section 16 of the Initial Study.
Public Safety Element	

Require development to be designed and constructed in a manner that reduces the potential for damage and injury from natural and human causes to the extent possible. (PS 1.1)	The finished floors within the Project will be built at an elevation above the flood zone. The Project site plan incorporates a fire-truck turnaround. The buildings within the Project will be constructed with fire sprinkler systems.
Ensure that all development projects provide adequate fire protection. (PS 1.3)	
Noise Element	
Apply the following standards for maximum Ldn levels to citywide development: 45 Ldn: For indoor environments in all residential units. 60 Ldn: For outdoor environments around all residential developments and outdoor public facilities. (NE 1.1)	As discussed in Section 12 of the Initial Study, an acoustical study was prepared, evaluating Project consistency with State and local noise standards. Mitigation measures have been identified to ensure that the City's noise standards are met.
Require adequate mitigation of potential noise from all proposed development. (NE 1.3)	
Evaluate proposed development using the Noise Assessment Guide and require an acoustical study when it is not certain that a proposed project can adequately mitigate potential noise impacts. (NE 1.4)	
Encourage all development to minimize noise intrusions through project design. (NE 1.5)	

As shown through the preceding analysis, the Project is consistent with General Plan policies intended to mitigate or avoid environmental impacts. In addition, the Project is consistent with the Mixed Use land use designation and would fulfill a number of General Plan policies, especially as related to housing diversity and affordability.

Development Code Consistency: The Project site has a zoning designation of “Mixed Use”. The MX zone is intended to allow for higher density housing types in conjunction with commercial and office development, in order to increase housing opportunities, reduce dependence on the automobile, and provide a pedestrian presence in commercial areas. Multi-family dwellings, including apartment developments, are allowed in the MX zone, subject to review and approval of a Use Permit by the Planning Commission. Project consistency with the development standards associated with development in the Mixed Use zone within the Broadway Corridor is summarized in the table below.

Summary of Development Code Compliance: Development Standards		
Development Feature	Development Code Allowance (SMC Chapter 19.32, Table 3-24)	Project
Building Setbacks	Front/Streetside: 20 ft; Side: 7 ft.; Rear 20 ft	Front/Streetside: 9-24 ft; Side: 15-75 ft.; Rear 15-22 ft
Floor Area Ratio	1.0	0.53
Building Coverage	60%	28%
Open Space	14,700 sq. ft.	13,548 sq. ft.
Maximum Roof Height	30 feet*	20-30 feet
Parking	90 stalls	75 stalls

*A 36-foot height may be allowed for third-floor residential development (SMC 19.40.040.B.1)

As discussed in Section 1.c of this Initial Study, the exceptions to the normal setback requirements do not raise significant issues with respect to the visual compatibility of the Project. The 1,152 square-foot reduction in common open space is offset by the provision of a 1,100 square foot Community Building. With respect to parking, as a 100% affordable development providing units at the Very Low Income and Low Income levels, the Project qualifies under State Law for a not-to-exceed parking ratio of one onsite parking space for each one bedroom unit and two onsite parking spaces for each two and three bedroom unit. Under this formula, 73 onsite parking spaces are required. The Project provides for 75 onsite parking spaces, which exceeds the State-mandated minimum.

In summary, despite minor exceptions to some Development Code standards, which are described and analyzed in Section 1.c of this Initial Study, the Project is substantially consistent with the General Plan and the Development Code and it complies with the State-mandated parking requirement for affordable housing developments. Therefore, impacts in this regard would be *less-than significant*.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

No habitat conservation plans or natural community conservation plans have been prepared addressing the site and adjoining lands. Therefore, **no impact** would occur.

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 that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state?*

The Project site is not identified as containing any valuable mineral resources. Bedrock geology in the vicinity of the Project site is dominated by tuff and andesitic to basaltic lava flows of the Sonoma Volcanics. In the Sonoma Valley and at the Project site, the Sonoma Volcanics are overlain by moderately to highly dissected alluvial fan deposits consisting of coarse to very coarse weathered gravels. The National Resources Conservation Service has classified site soils as belonging to the Wright loam (WgC) series (0 to 9 percent slopes). As a result, the Project would have **no impact** on mineral resources.

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?*

Refer to Section 11.a. **No impact** would occur.

12. NOISE: Would the project result in:	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity due to construction activities above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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?*

Environmental Noise: According to the Noise Element of the General Plan, the primary source of noise locally is traffic on major streets, including Broadway. Figures NE-1 and NE-2 of the Noise Element show that existing and projected outdoor noise levels from roadway traffic on Broadway could exceed the State and City general dBA standards for many units within the proposed development, as well as the central outdoor common area. To evaluate this issue, an environmental noise assessment was prepared by a qualified acoustical consultant⁹. The noise assessment sets forth the regulatory criteria used in the assessment, the results of on-site noise monitoring, an evaluation of the compatibility of the noise environment at the Project site in relation to the Project site plan (including the operation of the loading dock at the Sonoma Lodge), and recommendations for mitigation. Noise factors included in the on-site monitoring included both street traffic and the operations of the Sonoma Lodge, including activities at the loading dock, located across Clay Street from the Project site.

With respect to the outdoor open space area, which is centrally located on the site, behind the Community Building, the assessment found that that it will be acoustically shielded by intervening Project structures from roadway, loading

⁹ *Environmental Noise Assessment Altamira Apartment Project, 20269 Broadway Sonoma, CA, Illingworth and Rodkin, August 24, 2017*

dock, and service yard noise such that sound levels in these areas are expected to be below 60 dBA Ldn. Such exterior noise levels are considered “normally acceptable” by the City of Sonoma General Plan Noise Element. With respect to interior noise levels within the apartments, the study found that the proposed construction methods would result in compliance with State and local standards in conditions where the windows are kept closed. However, when windows are open, for many of the units within the Project, noise attenuation would be reduced to the point where interior noise levels could exceed the interior noise standard of 45 dBA Ldn, which represents a potentially significant impact. To address this issue, the environmental assessment identifies the following mitigation measure:

Mitigation Measure 12.a: Buildings 2, 3, 4, 5, 6, and 8 shall be equipped with a mechanical ventilation system capable of providing adequate fresh air to the residence while allowing the windows to remain closed to control noise.

With the implementation of this mitigation measure, potential impacts with respect to environmental noise would be reduced to a *less-than-significant* level.

Operational Noise: The Project adjoins six single-family residences along its western property line. The three building clusters on the west side of the site would be setback 15-20 feet from the shared property line and the setback area would serve as landscaped yard space. The units within these buildings would all be one-bedroom units. Further to the north, a portion of the Project parking lot would adjoin two of the single-family units, with a proposed setback of 5-10 feet. This portion of the parking is a dead-end, so it would not support through traffic movements. While the development of the Project would reduce exposure to traffic noise on Broadway with respect to the adjoining single-family residences, the project would generate operational noise through outdoor residential activities and the use of the parking lot by residents and guests. Noise generated by normal residential activities within the Project is expected to be compatible with adjoining residential development, based on the following factors:

- A normal rear yard to rear yard relationship is proposed between the units along the west side of the Project site and the adjoining residential development along Bragg Street.
- The units within the Project adjoining the Bragg Street residences would be one-bedroom apartments, which are more likely to accommodate single persons and seniors, rather than families with children.
- The landscaped area along the western edge of the site adjoining the Bragg Street residences is intended as a buffer area and would not be used for outdoor activities.

However, the use of the parking lot, especially in the evening, could result in noise impacts on the two adjoining single-family residences to the west. To address this issue, the following mitigation measure shall be required:

Mitigation Measure 12.b: To attenuate parking lot noise within the adjacent residential area a 6-foot-high solid fence/wall extending 50 feet from the northeastern corner of the along the northern property, and along the length of the two adjoining residential parcels to the west, as shown in Figure 3 of the Environmental Noise Assessment for the Altamira Apartment Project, 20269 Broadway (Illingworth and Rodkin, August 24, 2017). To be effective as a noise barrier, the fence/wall shall be built without cracks or gaps in the face or base, have a minimum surface weight of 3.0 lbs. per square feet, and be capable of reducing noise traveling directly through it by a minimum of 10 dBA. A wood fence built with a double layer of 1-inch nominal thickness fence boards, where the second layer of boards installed to cover the joints of the first layer would meet these surface weight and noise reduction requirements.. Other wall types that will provide the needed level of noise reduction include masonry block, and concrete panel walls, but any alternative proposal shall include verification from a qualified acoustical consultant that the required noise attenuation will be met.

With the implementation of this mitigation measures, the Project impact with respect to operational noise would be *less-than-significant*.

Refer to subsection d, below, for a discussion of construction noise impacts.

b) Exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels?

The proposed residential development does not include features or activities that would expose persons to or generate excessive groundborne vibration or groundborne noise levels. In addition, due to its low-rise, residential building type, the construction of the Project will not involve the use of vibratory rollers or other forms of equipment that would result in excessive vibration levels. There would be *no impact*.

c) A substantial permanent increase in ambient noise levels in the project vicinity?

Due to the residential nature of the development and with the implementation of mitigation measure 12.b, any permanent increase in ambient noise levels resulting from the Project will be *less-than-significant* with respect to existing ambient noise levels in the area.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity due to construction activities above levels existing without the project?

Construction activities typically associated with new development, including grading, excavation, paving, material deliveries, and building construction, would result in a substantial temporary increase in ambient noise levels in the Project vicinity. Although this impact is temporary in nature, increased noise levels throughout the construction period, may adversely affect residents in the area. Project construction is anticipated to last approximately one year. The grading/excavation phase of Project construction tends to be the shortest in duration, but creates the highest construction noise levels because of the operation of heavy equipment. Pursuant to the City's Noise Ordinance (Chapter 9.56 of the Sonoma Municipal Code), construction activities and material deliveries are restricted to the hours between 8 a.m. and 6 p.m. Monday through Friday, between 9 a.m. and 6 p.m. on Saturday, and between 10 a.m. and 6 p.m. on Sundays and holidays; however, the noise level at any point outside of the property plane of the Project shall not exceed (90) dBA. In addition, the City's Noise Ordinance requires sign postings at all site entrances upon commencement of construction to inform contractors and subcontractors, their employees, agents, and materialmen of the allowable construction hours.

Despite its temporary nature, construction noise has the potential to result in a significant impact on neighboring residents. Therefore, in addition to compliance with the City's Noise Ordinance as normally required, the following mitigation measure shall be required:

Mitigation Measure 12.d: Prior to issuance of grading permits, the Project applicant shall ensure that the following practices are incorporated into the construction specification documents to be implemented by the Project contractor:

1. Provide enclosures and mufflers for stationary equipment, shrouding or shielding for impact tools, and barriers around particularly noisy operations, such as grading or use of concrete saws within 50 feet of an occupied sensitive land use.
2. Use construction equipment with lower (less than 70 dB) noise emission ratings whenever possible, particularly air compressors and generators.
3. Do not use equipment on which sound-control devices provided by the manufacturer have been altered to reduce noise control.

4. Locate stationary equipment, material stockpiles, and vehicle staging areas as far as practicable from sensitive receptors.
5. Prohibit unnecessary idling of internal combustion engines and comply with Municipal Code limitations on vehicle idling.
6. Implement noise attenuation measures to the extent feasible (i.e., such that they do not impede efficient operation of equipment or dramatically slow production rates), which may include, but are not limited to, noise barriers or noise blankets. The placement of such attenuation measures shall be reviewed and approved by the Building Department prior to issuance of grading and building permits for construction activities.
7. Designate a construction liaison that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction site.
8. Hold a pre-construction meeting with the job inspectors and the general contractor/onsite project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.

The implementation of this mitigation measure would ensure that potential impacts from temporary construction noise are reduced to a *less-than-significant level*.

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

Because the Project is not located within an airport land use plan or within two miles of a public airport or public use airport, **no impact** would occur.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Because the Project is not in the vicinity of a private airstrip, **no impact** would occur.

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Induce substantial population growth in an area, either directly or indirectly?*

The proposed development would result in an increase of 48 residential units on the Project site, which is currently vacant. The Project site has a zoning designation of Mixed Use, which provides for a maximum base density of 20 units per acre, plus a density bonus consistent with the parameters of State law. The number of units proposed for the Project is consistent with these allowances. In addition, the site has been identified as a Housing Opportunity site in the Housing Element of the General Plan, meaning that it is considered generally suitable for development with higher density, affordable residential development. In addition, the units developed as part of the Project will be accounted for in the City’s growth management system, which limits residential growth within the city to an average of 65 units per year. Lastly, the Project does not require the extension of any public streets and it will connect to existing utility lines. Based on these factors, the development of the Project would constitute a ***less-than-significant impact***.

b) *Displace substantial numbers of existing housing units?*

The Project site is not developed with any housing units. The former residence on the site was demolished in 2007. Hence there would be ***no impact***.

c) *Displace substantial numbers of people?*

See response 13.b, above.

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:				
i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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:

i. Fire protection?

Fire protection services within the City of Sonoma are provided by Sonoma Valley Fire & Rescue Authority (SVFRA). According to the Fire Marshall, the Project would not require new or physically altered fire department facilities, nor will it induce growth and demand for services in excess of what is allowed through the Growth Management Ordinance or anticipated in the General Plan as a whole. It is also noted that the Project site plan incorporates a compliant fire-truck turnaround within the parking lot and that all of the buildings in the Project would be developed with fire-sprinkler systems. Therefore, the incremental increase in the demand for fire services is considered to be *less-than-significant*.

ii. Police protection?

In 2004 the City of Sonoma entered into a contract with the Sonoma County Sheriff's Office to provide law enforcement services for the city. The Sonoma Police Department (SPD), managed by the County Sheriff's Office, is responsible for the area within the city limits of the city of Sonoma and is staffed by one police chief, two sergeants, nine deputies, a school resource officer, a traffic officer, two community service officers and two administrative positions. The police department operates a "store front" type operation within city limits, with all the dispatching, record and property management, and investigative services are provided by resources at the Sheriff's main office in Santa Rosa. The police facility also operates serves as the city's Emergency Operation Center. The SPD is organized into the following divisions: Administration Division, Patrol Division, Parking Enforcement, Animal Control, School Resource Officer, Sonoma Valley Youth and Family Services, Volunteers in Policing, and Police Explorers. A school resource officer is assigned to the Sonoma Valley School District and supports both the SPD and the Sheriff's Sonoma Valley Substation. The SPD is also supported by a cadre of volunteers from the Sheriff's Volunteers in Policing Services (VIPS) program. The proposed Project would primarily be served by the police station located at 175 First Street West in the city of Sonoma. This station was built in 1981 and underwent major renovations in 2009.

According to Police Department staff, the Project would not require new or physically altered police department facilities, nor will it induce demand for services in excess of what is allowed through the Growth Management Ordinance or anticipated in the General Plan as a whole. The incremental increase in demand for police services is therefore considered to be *less-than-significant*.

iii. Schools?

The Project site is located within the Sonoma Valley Unified School District (SVUSD), which operates five elementary schools, two middle schools, and one comprehensive high school. As normally required, the applicant/developer would have to pay school impact fees to offset potential impacts to the SVUSD. As set forth in California Government Code Section 65995, the payment of development fees mitigates any impact to school districts, and no additional mitigation beyond the payment of these fees is permitted. This would be a *less-than-significant impact*.

iv. Parks?

Policy 4.2 of the Environmental Resources Element of the General Plan established a minimum parkland ration of 5 acres per 1,000 residents. The current population of the City is 10,989 and the amount of City parkland and

open space (excluding State parkland and the Maxwell Farms County Regional park) is 157 acres, resulting in a parkland to population ratio of 14.27 acres per 1,000 residents. Because the minimum parkland/population ratio called for in the General Plan has been greatly exceeded, the incremental increase in usage of City and County park facilities is considered to be a *less-than-significant impact*.

v. *Other Public Facilities?*

The proposed Project would not require the provision or construction of other public facilities. *No impact* would occur.

15. RECREATION	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) *Would the project increase the use of existing neighborhood or regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

In combination with State and County parks that are maintained within and adjacent to the city limits, the City of Sonoma has roughly 250 acres of parkland and other recreational facilities. With the acquisition of the Montini Preserve, an additional 95 acres of open space developed with hiking trail systems has become available to the public. As discussed above in Section 14.a.iv (Parks), City-owned parkland and open space totals 157 acres, resulting in a parkland to population ratio of 14.27 acres per 1,000 residents, which greatly exceeds the minimum ratio established in the City’s General Plan of 5 acres of parkland and open space per 1,000 residents. The Project itself includes a 1,100 square foot Community Building and a 9,120-square foot common open space area to provide for some recreational needs of residents. The Project would not create a significant demand for recreational facilities and there are currently a sufficient number of parks and recreational facilities within the city and region to serve residents of the proposed development. Based on these considerations, the Project would not result in a substantial deterioration of local/regional recreational facilities and its impact in this regard would be *less-than-significant*.

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?*

The Project includes a 1,100 square foot Community Building and a 9,120-square foot common open space area to provide for the recreational and social needs of residents. These facilities, which would be located in the interior of the site, do not raise any prospect of creating an adverse physical impact on the environment. *No impact* would occur.

16. TRANSPORTATION/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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

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?*

To evaluate the potential impacts of the Project with respect to transportation and traffic, a traffic impact study¹⁰ was prepared by a qualified Transportation Engineer. The study addresses: 1) traffic conditions and potential impacts on intersection level of service; 2) alternative transportation modes, including bicycling, walking, and transit; and, 3) traffic safety. The study area includes the segments of Broadway and Clay Street adjoining the Project site, the proposed Project access point on the Broadway frontage, the intersection of Broadway and Clay Street, and nearby transportation facilities, such as bike paths, sidewalks, and transit stops. Broadway is an element of State Highway 12 and is classified in the City’s Circulation Element as an arterial. In the immediate vicinity of the Project site, Broadway is configured with one lane in each direction, with a two-way left-turn lane south of Clay Street. Clay street is classified as a local street. It is 36-feet wide and features two travel lanes, with on-street parking along each side.

¹⁰ *Traffic Impact Study for the Altamira Family Apartments, W-Trans, June 7, 2017.*

Level of Service (LOS): Broadway/Clay Street is a three-legged intersection, in which the Clay Street approach is stop-sign controlled while the through movement on Broadway is unrestricted. Traffic counts taken at the a.m. and p.m. peak weekday periods show that the intersection operates at LOS A overall, with the Clay Street approach operating at LOS C. These level of service conditions would not change with the additional traffic generated by the Project, even under the traffic conditions projected for the year 2040. The City and Caltrans both use LOS D as the lowest level of operation that is considered to be normally acceptable. Because the traffic generated by the Project would not cause the LOS at the intersection of Broadway and Clay Street to exceed LOS D under existing and future conditions, its impact on the operation of the intersection is considered to be *less-than-significant*.

Sight Distance: Sight distance at the proposed driveway location was field measured. Based on a design speed of 35 mph, the minimum stopping sight distance needed is 250 feet. The traffic study concluded that if cars were parked on the curb areas immediately adjoining the driveway, sight distance could be adversely affected. This represents a potentially significant impact. To address this concern, the traffic study identifies the following mitigation measure:

Mitigation Measure 16.a.1: Parking restrictions, in the form of red curbs, shall be installed for 20 feet on either side of the Project drive. In addition, the landscaping in the vicinity of the driveway shall be subject to review to ensure that it does not adversely affect sight distances.

With the implementation of this mitigation measure, potential Project impacts on sight distance would be *less-than-significant*.

Vehicle Access: The traffic study evaluated the need for a left-turn lane on Broadway to accommodate the Project driveway. The warrant analysis concluded that a left-turn lane was not warranted based on existing and projected traffic volumes. However, the traffic study found that the inconsistent lane geometrics in the vicinity of the Project site could contribute to excessive vehicle speeds and drive confusion. This represents a potentially significant impact. To address these concerns, the traffic study recommends that a left-turn be required, as set forth in the following mitigation measure:

Mitigation Measure 16.a.2: The Project shall be required to re-stripe Broadway with a two-way left-turn lane for the approximately 770 feet between the existing two-way left-turn lane and striping north and south of the missing segment. To ensure compliance with applicable design standards, a Caltrans encroachment permit shall be required.

With the implementation of this mitigation measure, potential Project impacts on vehicle access would be *less-than-significant*.

Pedestrian Facilities: Although the sidewalk system is discontinuous along the east side of Broadway, across from the Project site, there is a continuous sidewalk along the Project frontage and northward leading to a signalized intersection serving the Sonoma Valley High School and the Adele Harrison Middle School. The traffic study concludes that pedestrian facilities serving the Project site are adequate and that the Project impact in this area would be *less-than-significant*.

Bicycle Facilities: The development of the Project will not interfere with the future installation of Class 2 bike lanes on Broadway as called for the City of Sonoma Bicycle and Pedestrian Master Plan. In addition, existing Class 1 bicycle facilities in the vicinity of the Project are accessible from the Project site via Clay Street. In compliance with City General Plan policy, the Project will incorporate bicycle facilities, including secured bicycle parking in the Community Building. The traffic study concludes that the bicycle facilities serving the Project are adequate and that the Project impact in this area would be *less-than-significant*.

Transit: The Project site is located within easy walking distance of transit stops. The traffic study concludes that the transit facilities serving the Project are adequate; therefore, the Project impact in this regard would be *less-than-significant*.

In summary, with the implementation of Mitigation Measures 16.a.1 and 16.a.2, Project impacts with respect to sight distance and vehicle access will be *less-than-significant*.

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?

Project traffic volumes would not exceed the level of service standards established in the Circulation Element of the City of Sonoma General Plan. **No impact** would occur.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The proposed Project does not include any strategy or measure that would directly or indirectly affect air traffic patterns. Therefore, **no impact** would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

See response 16.a, above. The Project could result in an unacceptable sight distance from the Project driveway. However, with the implementation of mitigation measure 12.a.1 the impact would be *less-than-significant*.

e) Result in inadequate emergency access?

Because the Project site plan incorporates a compliant fire-truck turnaround within its parking lot, there would be **no impact**.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

See response 16.a, above. The Project site is located along a bus route and within proximity of a bus turn-out. The Project complies with General Plan policies supporting the development of higher density residential development along transit routes. The City of Sonoma Development Code requires new multi-family residential development to provide bicycle parking, the amount and location of which is determined on a case-by-case basis by the review authority. The Project proposes to provide secure, covered bicycle parking as part of the Community Building. As a discretionary project, the location and design of bicycle parking would be subject to review by the Design Review and Historic Preservation Commission following consideration of the Project by the Planning Commission. Accordingly, the Project would not conflict with policies, plans and programs supporting alternative transportation, nor would it decrease the safety or performance of any such facilities. The Project would not interfere with the future placement of Class 2 bike lanes along the Broadway frontage of the site. **No impact** would occur.

17. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The proposed Project is within the Sonoma Valley County Sanitation District (SVCSD). The SVCSD's service area extends from the unincorporated community of Glen Ellen in the north to Schellville in the south. The wastewater collection system consists of approximately 188 miles of pipeline and two lift stations. The collection system conveys wastewater to the District's treatment facility located in the southern portion of the Sonoma Valley. The treatment facility currently provides tertiary level treatment of wastewater. The SVCSD treatment plant operates under a National Pollutant Discharge Elimination System (NPDES) permit which was granted by the San Francisco Regional Water Quality Control Board. While the estimated maximum capacity of the treatment plant is 20 MGD, the NPDES permit limits the permitted average dry weather flow (ADWF) of the treatment plant to 3.0 million gallons per day (MGD). According to the most recent inspection report prepared by the RWQCB, the average dry weather flow through the facility in 2016 amounted to 1.78 MGD¹¹.

¹¹ Sonoma Valley County Sanitation District Wastewater Treatment Plant (NPDES No. CA0037800) Compliance Evaluation Inspection Report, December 2, 2016

Each ESD in the existing service area is assigned a sewer flow of 200 gallons per day to calculate the average dry weather flow. The proposed Project would generate 48 ESDs, or 9,600 gallons per day. Because this level of increased treatment would not exceed the permitted treatment capacity of the plant, ***no impact*** would occur.

b) Require or result in the construction of new or expanded water or wastewater treatment facilities?

The Project proposal was referred to the Sonoma County Water Agency (SCWA) and the Sonoma County Department of Permits and Resource Management (PRMD) for comment with respect to wastewater infrastructure. These agencies concluded that the existing sanitary sewer infrastructure in the vicinity of the Project site is adequate to accommodate projected flows¹². While it will be necessary to connect the Project to an existing sewer line and to comply with the standard design requirements conditions of approval of the PRMD, the Project will not require the upgrade of any portion of the collection system. ***No impact*** would occur.

c) Require or result in the construction of new or expanded storm water drainage facilities, the construction of which could cause significant environmental effects?

The Project would involve on-site drainage improvements to convey surface runoff from the site to an existing 48-inch pipe located along Clay Street. Impacts associated with the actual construction of these drainage improvements, such as erosion and sedimentation from grading and/or trenching activities, would be reduced to a less-than-significant level through implementation of the erosion control measures required by the City's Grading Ordinance and the Storm Water Pollution Prevention Plan (SWPPP) for the Project. See also response to Items 6.b, 9.a, and 9.c regarding construction-related erosion. ***No impact*** would occur.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources?

The City of Sonoma supplies potable water to a population of approximately 11,000 people and approximately 300 businesses. The City's potable water supply is primarily water purchased from the Sonoma County Water Agency (SCWA) and water pumped from six groundwater wells owned and operated by the City. The SCWA water supply is delivered to the City through the SCWA aqueduct system and is supplied with water from the natural flow of the Russian River. The City is one of eight water contractors under contract with the SCWA, known as the Restructured Agreement for Water Supply. Under the Restructured Agreement, the SCWA is obligated to deliver up to 6.3 million gallons of water per day (mgd) during any month and 3,000 acre-feet of water during a fiscal year. The term of the agreement is through 2037 and can be extended by amendment.

The City's water service area encompasses the city limits, as well as portions of Sonoma County to the east of the city limits, as well as pocket areas that have outside service area agreements with the City along Thornsberry Road, Lovall Valley Road, East Napa Road, East MacArthur Street, and Denmark Street. The City's service area is approximately 2.5 square miles. The City's water distribution system contains three pressure zones that are each served by one or more storage tanks. The principal water mains in the distribution system range in size from 6 to 16 inches. Most of the distribution grid piping in the older sections of the City range in size from 1½ to 4 inches, while the newer areas are served by pipes 6 to 8 inches in diameter.

In compliance with the SB X7-7 and the Urban Water Management Planning Act, the City of Sonoma has prepared and adopted an Urban Water Management Plan (UWMP) that evaluates water demands over a 25-year planning horizon. This analysis addresses a variety of scenarios, including years with normal water conditions, single-dry years, and multiple dry year conditions. Additionally, the UWMP attempts to accomplish the following:

¹² Communication from Keith Hannah, Assistant Engineer, Sonoma County PRMD, July 25, 2017.

- Identify measures to be implemented or projects to be undertaken to reduce water demands and address water supply shortfalls;
- Identify stages of action to address up to 50 percent reduction in water supplies during dry water years;
- Identify actions to be implemented in the event of a catastrophic interruption in water supplies;
- Assess the reliability of the sources during normal, single-dry, and multiple-dry water years; and
- Identify when, how, and what measures the City could undertake in order to meet the State Legislature's call for a 20 percent per capita reduction in urban water use statewide by 2020.

Overall, the City's UWMP, which was updated in 2015¹³, determined that the City's combined projected water supplies are sufficient to meet projected demands during normal and multiple-year dry year conditions. During a severe drought condition, under the single-dry year condition, the City would not have adequate supplies and would need to impose mandatory water conservation. However, the City's water customers have been successful in reducing its water demands during water shortages, such as what occurred in 2009 when the City's water deliveries were reduced by 18 percent of normal. Moreover, in compliance with State mandates to reduce water usage, the city of Sonoma has reduced its water use by 29 percent from July 2015 through November 2015, when compared to the same period in 2013. In addition, the City can produce more groundwater on a short-term basis during peak summer months to supplement the SCWA supply. Because the development of the site is consistent with the water demand projections of the City's UWMP and because the UWMP sets forth a plan in which combined projected water supplies are sufficient to meet projected demands during normal and multiple-year dry year conditions, the development of the Project would have a *less-than-significant impact* with respect to water supplies.

e) Result in a determination by the wastewater treatment provider that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

See 17.a. There will be *no impact*.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project?

The County of Sonoma owns the Central Disposal Site and four other transfer stations located throughout Sonoma County. The Central Disposal Site landfill, located at 500 Mecham Road in Petaluma, California, accommodates solid waste from the City of Sonoma. The Central Disposal Site has a permitted capacity of 19.59 million tons (32.65 million cubic yards). This site includes two landfills, including Landfill 1, which has a permitted capacity of 18.27 million tons (25.65 million cubic yards), and Landfill 2, which has a permitted capacity of 4.98 million tons (7.0 million cubic yards). Landfill 1 currently contains approximately 12.83 million tons (21.38 million cubic yards) of solid waste, and Landfill 2 currently has 1.12 million tons (1.87 million cubic yards) of solid waste. Therefore, remaining capacity at Landfill 1 is 5.44 million tons (4.27 million cubic yards), and remaining capacity at Landfill 2 is 3.86 million tons (5.13 million cubic yards). Further, permitted daily tonnage at the Central Disposal Site is 2,500 tons; however, average daily tonnage is 1,250 tons. Therefore, the landfill is currently receiving less than its permitted daily tonnage of solid waste.

According to the Sonoma County Waste Management Agency, there is sufficient capacity at these facilities to accommodate the Project. However, to ensure compliance with the waste diversion programs required under the

¹³ 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, City of Sonoma, July 1, 2015.

California Integrated Waste Management Act of 1989 (AB939) the following mitigation measure has been included to address recycling.

Mitigation Measure 17.f: The Project applicant shall be required to prepare and implement a recycling plan for the major materials generated through construction of new buildings and shall identify the means to divert these materials away from landfill disposal. Typical materials included in such a plan are soil, brush and other vegetative growth, sheetrock, dimensional lumber, metal scraps, cardboard packaging, and plastic wrap.

With implementation of Mitigation Measure 17.f above, the solid waste generated by the Project would have a *less-than-significant impact* on landfills that serve the City of Sonoma.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

In order for Sonoma County to help meet the diversion requirements of the California Integrated Waste Management Act of 1989 (AB939), Chapter 22 of the Sonoma County Code (Section 2207A) explicitly bans the disposal at County disposal sites of yard debris, recyclable wood waste, scrap metal and corrugated cardboard. The Project would be subject to these limitations. All applicable federal, state, and local regulations related to solid waste would be complied with as part of the Project. As a result, *no impact* would occur.

18. MANDATORY FINDINGS OF SIGNIFICANCE	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

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?

The implementation of measures identified in this Initial Study would reduce the severity of potential impacts on biological and cultural resources to *less-than-significant* levels. No further mitigation beyond Mitigation Measures 4.a, 5.b, 5.c, and 5.d would be required.

b) Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The proposed development would not result in cumulative impacts deemed considerable. Impacts on public services, traffic, and utilities could contribute incrementally, but the combined effect would not be significant. As described in this Initial Study, implementation of Mitigation Measures 8.d, 16.a.1, 16.a.2, and 17.f would reduce the magnitude of potential cumulative impacts to a *less-than-significant level*.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The Project could have temporary short-term air quality effects on people in vicinity of the site during construction which, with implementation of Mitigation Measure 3.c would be *less-than-significant*. With implementation of standard practices required of all projects approved in the City (compliance with the Uniform Building Code, etc.), the Project would not pose a hazard to future residents through exposure to geologic hazards.

Attachments:

1. List of Mitigation Measures
2. Project Narrative
3. Site Plan/Grading Plan/Utility Plan/Elevations
4. *Biological Assessment Report for 20269 Broadway in Sonoma, California, Huffman-Broadway Group, May 5, 2016*
5. *Arborist Report/Tree Protection Plan, Sherby Sanborn Consulting Arborist, June 2, 2017*
6. *Historical Resources Study of the Property at 20269 Broadway (APN 128-181-001), Sonoma, Sonoma County, California, Eileen Barrow, M.A. for Tom Origer and Associates, March 27, 2017*
7. *Environmental Noise Assessment Altamira Apartment Project, 20269 Broadway Sonoma, CA, Illingworth and Rodkin, August 24, 2017*
8. *Traffic Impact Study for the Altamira Family Apartments, W-Trans, June 7, 2017*

Available for Download

1. [Project Submittal Package \(http://www.sonomacity.org/Government/Resources/Broadway-Affordable-Housing-Project.aspx\)](http://www.sonomacity.org/Government/Resources/Broadway-Affordable-Housing-Project.aspx)
2. *Phase 1 Environmental Site Assessment, 20269 Broadway, Environmental Geology Services, August 10, 2016* (http://www.sonomacity.org/getattachment/Government/Resources/Broadway-Affordable-Housing-Project/Phase1ESA_REPORT_081016.pdf.aspx)

List of Mitigation Measures

Air Quality

Mitigation Measure 3.c: To limit the Project's construction-related dust and criteria pollutant emissions, the following Bay Area Air Quality Management District (BAAQMD)-recommended Mitigation Measures shall be included in the Project's grading plan, building plans, and contract specifications:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Biological Resources

Mitigation Measure 4.a: The following measures shall be implemented as necessary during the construction phase of the project for the protection of nesting birds:

1. Grading or removal of nesting trees and habitat shall be conducted outside the nesting season, which occurs between approximately February 15 and August 15, if feasible.
2. If grading between August 15 and February 15 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grassland and trees shall be performed by a qualified biologist within 7 days of ground breaking.
3. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.

4. The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFG. To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.
5. After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones. The buffer zone shall remain in place until after the young have fledged.

Cultural Resources

Mitigation Measure 5.b: Construction personnel involved with earthmoving shall be alerted to the potential for the discovery of prehistoric materials and tribal cultural resources. Such materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

If prehistoric or historic-period archaeological/tribal cultural resources are encountered, all construction activities within 50 feet shall halt and the Planning Director shall be notified. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with Public Resources Code (PRC) Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning and construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the Planning Department. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2.

Mitigation Measure 5.c: If paleontological resources are identified during construction activities, all work in the immediate area will cease until a qualified paleontologist has evaluated the finds in accordance with the standard guidelines established by the Society of Vertebrate Paleontology. If the paleontological resources are considered to be significant, a data recovery program will be implemented in accordance with the guidelines established by the Society of Vertebrate Paleontology.

Mitigation Measure 5.d: If human remains are encountered, all work shall stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist shall be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission shall be contacted by the Coroner so that a “Most Likely Descendant” can be designated and further recommendations regarding treatment of the remains is provided.

Hazards and Hazardous Materials

Mitigation Measure 8.d: The preparation and implementation of a Soils and Testing and Management Plan (STMP) by a qualified consulting firm shall be required. The STMP shall address a) sampling and testing of shallow

soils to identify potential residual contaminants potentially associated with the former residential and agricultural use of the site, as called for in the Phase I Environmental Site Assessment 20269 Broadway, Sonoma, CA (EGS, 2016); b) clean-up, disposal, and/or remediation procedures if any such contaminants are identified in excess of established safety thresholds; and, c) any required coordination with the Sonoma County Department of Environmental Health and/or other responsible agencies. Soils testing and any required removal or remediation shall be duly implemented prior to the issuance of any grading or construction permit.

Noise

Mitigation Measure 12.a: Buildings 2, 3, 4, 5, 6, and 8 shall be equipped with a mechanical ventilation system capable of providing adequate fresh air to the residence while allowing the windows to remain closed to control noise.

Mitigation Measure 12.b: To attenuate parking lot noise within the adjacent residential area a 6-foot-high solid fence/wall extending 50 feet from the northeastern corner of the along the northern property, and along the length of the two adjoining residential parcels to the west, as shown in Figure 3 of the Environmental Noise Assessment for the Altamira Apartment Project, 20269 Broadway (Illingworth and Rodkin, August 24, 2017). To be effective as a noise barrier, the fence/wall shall be built without cracks or gaps in the face or base, have a minimum surface weight of 3.0 lbs. per square feet, and be capable of reducing noise traveling directly through it by a minimum of 10 dBA. A wood fence built with a double layer of 1-inch nominal thickness fence boards, where the second layer of boards installed to cover the joints of the first layer would meet these surface weight and noise reduction requirements.. Other wall types that will provide the needed level of noise reduction include masonry block, and concrete panel walls, but any alternative proposal shall include verification from a qualified acoustical consultant that the required noise attenuation will be met.

Mitigation Measure 12.d: Prior to issuance of grading permits, the Project applicant shall ensure that the following practices are incorporated into the construction specification documents to be implemented by the Project contractor:

1. Provide enclosures and mufflers for stationary equipment, shrouding or shielding for impact tools, and barriers around particularly noisy operations, such as grading or use of concrete saws within 50 feet of an occupied sensitive land use.
2. Use construction equipment with lower (less than 70 dB) noise emission ratings whenever possible, particularly air compressors and generators.
3. Do not use equipment on which sound-control devices provided by the manufacturer have been altered to reduce noise control.
4. Locate stationary equipment, material stockpiles, and vehicle staging areas as far as practicable from sensitive receptors.
5. Prohibit unnecessary idling of internal combustion engines.
6. Implement noise attenuation measures to the extent feasible (i.e., such that they do not impede efficient operation of equipment or dramatically slow production rates), which may include, but are not limited to, noise barriers or noise blankets. The placement of such attenuation measures shall be reviewed and approved by the Building Department prior to issuance of grading and building permits for construction activities.

7. Designate a "construction liaison" that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction site.
8. Hold a pre-construction meeting with the job inspectors and the general contractor/onsite project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.

Traffic and Transportation

Mitigation Measure 16.a.1: Parking restrictions, in the form of red curbs, should be installed for 20 feet on either side of the Project drive. In addition, the landscaping in the vicinity of the driveway shall be subject to review to ensure that it does not adversely affect sight distances.

Mitigation Measure 16.a.2: The Project shall be required to re-stripe Broadway with a two-way left-turn lane for the approximately 770 feet between the existing two-way left-turn lane and striping north and south of the missing segment. To ensure compliance with applicable design standards, a Caltrans encroachment permit shall be required.

Utilities and Service Systems

Mitigation Measure 17.f: The project applicant shall be required to prepare and implement a recycling plan for both the deconstruction of existing structures and new construction detailed in the project description. The recycling plan shall address the major materials generated through deconstruction of existing structures and construction of new buildings, and shall identify the means to divert these materials away from landfill disposal. Typical materials included in such a plan are soil, brush and other vegetative growth, sheetrock, dimensional lumber, metal scraps, cardboard packaging, and plastic wrap.

Altamira Family Apartments

Applicant Statement

Introduction

Satellite Affordable Housing Associates (SAHA) is excited to bring Altamira Family Apartments to 20269 Broadway in Sonoma. SAHA is a California 501(c)3 public benefit corporation with 50 years of experience in building, owning and managing affordable housing throughout the entire Bay Area. Today, the organization's portfolio is comprised of 61 properties and close to 3,000 units of affordable housing in 19 Bay Area cities. SAHA specializes in building housing for a diverse group of individuals – families, seniors, and individuals with special needs. We work closely with the local community to plan and design each individual building to meet the needs of the immediate neighbors, future residents and other stakeholders. SAHA has sponsored an extensive community engagement process beginning in February 2016 to gather and incorporate stakeholder feedback into the design for Altamira. In addition to two community-wide open houses, SAHA convened a small working group consisting of eight members – neighbors, community leaders and other stakeholders and met three times in June and July. This Community Advisory Committee (CAC) provided detailed feedback which resulted in significant changes to the proposed development, as described in more detail below.

Site Description

Altamira's site has an area of 1.98 acres and is a flat, rectangular lot located on the southern edge of the City of Sonoma. There are currently two billboards on the southeast corner of the lot – no other structures exist on the site. The site's zoning designation is Mixed Use which allows for density up to 20 units per acre. Mixed Use also allows for commercial development, but this site will not include any commercial development.

The site is currently owned by the Sonoma County Community Development Commission (CDC). Sonoma CDC and SAHA have entered an Exclusive Rights to Negotiate Agreement (ERNA) and will be executing a Disposition and Development Agreement prior to the land being transferred to SAHA.

Proposed Development Concept

SAHA is proposing to build a 100% affordable apartment complex for families earning between 30%-60% of the County's area median income. The 1-, 2- and 3- bedroom units will be developed around a central open space that includes planting beds, seating, a turf area and play equipment for children. Community input has shaped the evolution of the site plan. Key design features are listed below:

- **Location of Entrance on Broadway**

At a meeting in February 2016, immediate neighbors expressed their concern about having the driveway entrance and exit located on Clay Street as originally shown in the site plan. SAHA conducted a third-party traffic study to determine if there was an opportunity to shift the entrance

and exit on to Broadway. The study, conducted by W-Trans, a traffic engineering firm in Santa Rosa, provided analysis that allowed us to shift the entrance and exit off of Clay Street and on to Broadway as shown in the current site plan.

- **Siting of Community Building on Broadway**

The location of the community clubhouse has gone through several iterations. The original Site Plan showed the community building at the southeast corner of the property at Clay Street and Broadway. Through discussions with the CAC group, we learned that neighbors strongly preferred shifting the clubhouse to the north, away from Clay Street. In response we proposed situating the clubhouse in a more interior location on the site plan. After receiving feedback at the Planning Commission Study Session in September about having this building showcase the property with a more prominent Broadway position, we were able to shift the building south along Broadway to front the street and provide both a prominent presence as well as a strategic location for maximum use by the future residents.

- **One-and Two –story Building Heights**

Early feedback from neighbors, the CAC group, and other community stakeholders indicated that the community strongly felt that three-story buildings at this location fit would not be compatible with the current or future character of the neighborhood. SAHA did propose some three-story elements in the initial site plan. However, because of this feedback we adapted the site design to eliminate the three-story buildings and provide only one- and two-story buildings throughout the site.

- **Preservation of Existing Trees**

There are several mature trees on the site that date back to the previous use as a farm. The proposed site plan will preserve four large trees to integrate into the new landscape.

- **Porches Along Clay Street**

Units along Clay Street offer the street a soft “front porch” element to help transition the apartment complex into the single family home neighborhood that sits to the west of the site. This element was discussed at a CAC meeting and the immediate neighbors were enthusiastic about a soft transition to extend the neighborhood character and friendly feeling.

- **Siting of Buildings**

The site is comprised of nine (9) separate buildings that have been deliberately and carefully located on the site to address neighbor concerns as well as to maximize convenience and livability for future residents. The one-bedroom units are located on the western property line, closest to Bragg Street at the request of Bragg Street neighbors who prefer proximity to these smaller households rather than the larger units serving families. The three-bedroom townhouse units surround the center courtyard to allow for easy access to the outdoor amenities for the families that will live in the larger units. Accessible paths have been created to connect all residential buildings with the community

building, trash and parking lot. Parking has been created to conveniently distribute spaces throughout the site, with a main lot as well as second parking court.

Current Unit Mix

In establishing a proper unit mix, SAHA balanced the requirements of prospective funding sources, and stakeholder feedback to provide a balance of one-, two-, and three-bedroom units:

1-bedroom	22
2-bedroom (includes 1 managers unit)	14
3-bedroom	12
TOTAL	48

Relationship to General Plan

Altamira has been designed to focus on achieving goals outlined in the City of Sonoma General Plan. Specifically, the project achieves the following goals:

1. CD-4: 4.2 – Encourage a variety of unit types in residential projects
2. CD-6: 5.5 – Promote higher density, infill development, while ensuring that building mass, scale, and form are compatible with neighborhood and town character
3. CD-6: 5.7 – Develop and implement design improvements that highlight the primary gateways to Sonoma
4. ER-2: 2.6 – Preserve existing trees and plant new trees
5. ER-3: 3.2 – Encourage construction, building maintenance, landscaping, and transportation practices that promote energy and water conservation and reduce green-house gas emissions

Relationship to Housing Element

Altamira is identified as a Housing Opportunity Site in the City of Sonoma 2015-2023 Housing Element. This development will achieve some of the identified Housing Plan goals:

1. Ensuring diversity
2. Improving housing affordability
3. Promoting equal housing opportunities
4. Environmental sustainability

Relationship to Development Code

This site has been identified in the Sonoma Housing Element as a “Housing Opportunity Site” and SAHA is excited to bring this new opportunity of affordable housing to the City of Sonoma. As a Mixed Use designated site, it allows for up to 20 dwelling units per acre, or 39 units. Because the site is a 100% affordable development, it qualifies for the State density bonus of up to 35% increase in density, or 52 units. Within the limitations of the Mixed Use designation, the planned development achieves the

requirements outlined for Density, Floor Area Ratio, Height, Bicycle Parking, Commercial Component and the Historic Overlay Zone.

Requested Incentives

Altamira will request three development incentives:

1. Setbacks – Building seven is requesting a setback of 15 feet instead of the required 20 feet to allow for additional parking spaces in the center parking court. Building seven will be a two-story, sloping to a one-story building at the western property line shared with Bragg Street residents. The community building will also be requesting an 11 foot setback instead of the 15 foot front setback. This will accommodate additional square footage in the center green space.
2. Open Space – The development is requesting 13,548 square feet of open space instead of the required 14,700. The common community room is sized at 1,100 square feet providing indoor recreation space for all residents. Open space was reduced to accommodate more parking.
3. Parking – The development is requesting a parking incentive for the size of parking spaces. The typical parking space size requested is 18' x 8'6" – we are providing fifty (50) spaces at this standard size. Five (5) tandem spaces will be provided and count for ten (10) total parking spaces. The tandem parking spaces will be assigned to single households with multiple cars, most likely five (5) three-bedroom apartments. There will be one row of ten (10) smaller compact spaces at 16' x 8'6". The five (5) accessible parking spaces are all 9' wide as requested by the building code. All drive aisles are 24' wide.

Exhibit A

Altamira Family Apartments Parking Analysis

SAHA is proposing 75 parking spaces for 48 affordable apartments at The Altamira. Based on a review of parking conditions at SAHA properties as well as regional transportation data, we have increased the proposed parking spaces by 19% over the 61 spaces initially proposed and have concluded that the increased number of parking spaces will accommodate parking demand on-site.

Altamira will provide 75 onsite parking spaces for future residents, guests and staff. Sixty-seven (67) spaces will be reserved for residents, calculated at: one (1) space for one-bedrooms, one and a half (1.5) spaces for two-bedrooms, two (2) spaces for three-bedrooms, while eight (8) spaces will accommodate guests, staff and a single drop-off space. California Assembly Bill 744 requires an 100% affordable development at this size to have seventy-four (74) parking spaces. In addition to meeting the parking space requirement set by the state, SAHA looked at regional transportation and parking studies and reviewed our own portfolio of sixty (60) properties. Key findings are as follows:

- 1. Extremely Low Income Households Have Significantly Lower Rates of Car Ownership than Higher Income Households.** According to *Transit Oriented Development and Affordable Housing*, a survey conducted by the Association of Bay Area Governments, “lower income households have lower ownership rates and use a car less frequently.” In surveying both transit oriented developments (TODs) and non-TOD locations, the study found that car ownership for extremely low income households of all sizes was at only 57%, while ownership rates were close to or above 90% for moderate income households.
- 2. The Cost of Car Ownership is Prohibitive for Many Low-Income Households.** According to AAA, the average annual cost of owning a car in 2015 was \$8,698. Households living at Altamira will earn between \$19,000-\$50,000 annually before taxes and other paycheck deductions. Therefore, the cost of owning a car could account for up to 45% of household gross income, putting car ownership simply out of reach for many of these families.
- 3. Parking Demand at SAHA’s Suburban Family Properties Averages 1.221 Spaces per Unit.** SAHA completed a parking review across our entire portfolio of 60 properties, encompassing 3,000 units, to understand parking supply and demand at existing

housing developments. Further analysis was conducted on a smaller sample size of seven buildings identified as serving families (i.e. not restricted to seniors) located in suburban and rural-suburban settings. These properties are listed in **Table 1** (below).

Table 1: Family Buildings in Suburban Locations

Property	Location	Total Units	Total Bedrooms	Total Parking Spaces	Total Parking Spaces to Units
Robin Lane	Concord	16	25	10	0.625
Acalanes Court	Walnut Creek	17	37	23	1.353
Sierra Gardens	Walnut Creek	29	45	33	1.138
Valley Oak Homes	Sonoma	45	77	65	1.444
Arboleda Apartments	Walnut Creek	48	92	59	1.229
Carmen Avenue Apartments	Livermore	30	60	38	1.267
Petaluma Avenue Homes	Sebastopol	45	89	67	1.489
Total		230	425	295	1.221
<i>The Altamira</i>	<i>Sonoma</i>	<i>48</i>	<i>86</i>	<i>75</i>	<i>1.563</i>

To understand parking demand at these properties, we analyzed whether 1) there were any parking vacancies (i.e. spaces available for residents that were not being used) and 2) whether resident demand exceeded the supply and as a result a parking waiting list had been created at the property. From this data we calculated implied parking demand per unit at each property as well as average demand across the properties. The analysis demonstrated parking demand ranging from .50 spaces per unit up to 1.24 spaces per unit, depending on the property, with average demand at .99 spaces per unit. These results are summarized in **Table 2**.

As reflected in **Table 2**, Altamira will provide a total of 1.40 parking spaces per unit which is significantly higher than the average demand at suburban family properties and is also higher than the highest demand observed at any individual property.

Table 2: Parking Demand at SAHA Family Properties

Property	Location	Total Units	Total Bedrooms	Total Parking Spaces	Waiting List Spaces	Implied Parking Demand (units)
Robin Lane	Concord	16	25	10		0.50
Acalanes Court	Walnut Creek	17	37	23	2	1.24
Sierra Gardens	Walnut Creek	29	45	33		1.07
Valley Oak Homes	Sonoma	45	77	65	3	1.18
Arboleda Apartments	Walnut Creek	48	92	59		0.73
Carmen Avenue Apartments	Livermore	30	60	38		0.97
Petaluma Avenue Homes	Sebastopol	45	89	67		1.24
Total		230	425	295		0.99*
<i>The Altamira</i>	<i>Sonoma</i>	<i>48</i>	<i>86</i>	<i>75</i>		<i>1.40</i>

*Average of all properties listed, not sum of total

Conclusion

As a result of the data review and analysis and in response to neighbor preferences, SAHA has increased the proposed number of spaces 19% from an initial count of 61 spaces to 75 total spaces. We are satisfied that the proposed parking spaces will adequately serve parking demand generated by the development. In addition, parking will be carefully managed and enforced during operations according to our company-wide policies to ensure quiet enjoyment of the parking amenities by all residents, staff, and visitors.



26 May 2017

David Goodison, Planning Director
City of Sonoma

Dear Mr. Goodison,

We are pleased to provide architectural documentation for the proposed affordable housing at 20269 Broadway for SAHA. Herein is a summary description of how the project complies with required policies and regulations set forth in City Ordinance.

The project consists of forty-eight units of affordable family apartments, in flats and townhomes, of 1-BR, 2-BR, and 3-BR units. The units are in eight buildings, new construction, two-stories, grouped around a common courtyard and a small one-story community building (with shared amenities as well as the site manager's offices).

Response to Design Guidelines:

The project site is a roughly square-shaped parcel on the corner of Clay Street and Broadway. As Broadway is the more prominent frontage, the residential buildings are oriented so that their narrow dimension is perpendicular to that street. Primary residential entrances face onto Clay Street with shared porches, and the common site entrance is located on Broadway.

There are no nearby structures with historic significance. The buildings themselves draw on the long agricultural history of the Sonoma region, while also recognizing that the location is in effect a southerly gateway into the City proper. The buildings are reminiscent of loosely clustered barn structures, and make reference to the architectural vocabulary of that building typology. Common elements on the residential buildings include simple symmetrical roof forms, minimal eaves, hay hoods over the shared porches, horizontal siding with variegated exposures, wind eyes on the rooftop, and pragmatic window locations. Buildings are a maximum of two stories (with a one-story portion at the rear of Building 7).

The Community Room sits forward of the residential buildings and clearly address Broadway. It is differentiated from the other buildings with a change in architecture – making more contemporary reference to newer materials (such as vertical panel siding) and more elaborate construction with an expressed post and lintel structure. The larger glazed openings clearly designate this as a welcoming entry point for the whole community.

The intersection of Clay Street and Broadway is addressed with a landscaped response that encroaches into the right-of-way with plantings and a packed earth path. Large reclaimed redwood wine press tanks make literal reference to the history and industry of the region, and the gabion walls suggest landscape as architecture at the human scale. Local plants are represented by oak, agave, and native grasses. The informal path and low walls provide a pleasant place to sit.

Materials and Sustainability:

This project will be constructed with a purposeful view toward sustainability. This includes ample south-facing roof orientations for future photovoltaic panel installation, and also durable long-lasting materials. Siding is durable cement board siding with integral color for long-lasting quality, and the deep wall thickness and high-heel trusses accommodate plenty of insulation for thermal efficiency. Dual-pane vinyl windows prevent heat transfer, and the Energy Star composition shingle roof is light-colored for high solar reflectance. Fences are heavy-duty hog wire to make reference to agricultural vernacular materials, and low landscape walls are rock-filled gabion walls with local stone.

Historic Zone Infill:

The site is not an historic site, but was formerly the location of a farmhouse and several assorted barns and sheds. The site arrangement of residential buildings clustered around the community building makes direct reference to that series of barns grouped around the central farmhouse. There are residential homes existing to the west, and the 15' setbacks provided on Clay Street respect that spacing. The homes on Bragg Street vary between two story and one-story, and the proposed buildings vary in height where they face the west property line (Buildings 8 and 6 are two-story, but Building 7 is one-story).

The residential pattern is further reinforced with shared porches on Clay Street, and the extended eaves above the porches help to break down the scale of the buildings. A gabled roofline makes reference to the continuing residential neighborhood homes beyond. Low landscape walls further contribute to human scale on these facades. The building wall itself is pushed and pulled with materials changes of 1.5' and 3' variable depths.

Development Standards:

The development provides shared Open Space that is close to the requirement (13,548 SF). Considering spaces narrower than 15', or considering the 1,100 SF Common Room (indoor shared amenity) results in compliance. The front yard setback is 13' and 24' at the residential buildings, and 9' at the Community Building. (The reduced front setback at Building 3 was useful in creating tandem parking spaces, and at the Community Building the reduced setback allowed for a sizeable common courtyard.) The Open Space ordinance includes the option for reduced front yard setbacks to incentivize the provision of Open Space.

The rear yard setback is 15' in this zone, or 20' due to the adjacency of residences. The proposed development provides 20' at the two 2-story buildings, and 15' where the building height is only 1-story (Building 7). The maximum allowable height is 30', and the proposed residential buildings range between 27' and 30' maximum in height (to provide liveable high ceilings, optimum solar angle for PV, and high-heeled trusses for increased attic insulation).

The parking is provided at a rate of 1:1 for the 1-BR flats, and 2:1 for the 2- and 3-BR units, plus 1 extra space, for a total of 75 spaces. This includes 10 tandem spaces for 5 households that may share two vehicles. The affordable housing ordinance requires a minimum of 74 spaces for this development, and allows for the provision of tandem spaces in reaching that goal.

At your request, we have provided 3-D rendered views of the proposed design looking from up and down Clay Street and Broadway. We have also provided diagrams indicating height relationships in the neighborhood. A colored neighborhood plan indicates building heights of the proposed buildings as well as nearby structures. A street elevation indicates how the gable-front apartments along Clay Street are of a similar scale and massing as the existing homes. A section cut through existing homes on the west property line reveals that while the proposed buildings are taller in absolute height, the existing homes are built above natural grade and will not be overpowered by the new structures.

Best Regards,



Theresa Dias, AIA | tbdias@pyatok.com
Associate, PYATOK (x.103)



Sonoma County Community Development Commission
Sonoma County Housing Authority
1440 Guerneville Road, Santa Rosa, CA 95403-4107

*Members of the
Commission*

Efren Carrillo
Chair

Shirlee Zane
Vice Chair

Susan Gorin
David Rabbitt
James Gore

Margaret Van Vliet
Executive Director

David Goodison
Planning Director, City of Sonoma
1 The Plaza
Sonoma, CA 95476

Re: 20269 Broadway Affordable Housing Planning Application Submission

Dear Mr. Goodison,

I am writing on behalf of the Sonoma County Community Development Commission (CDC), the current property owner of 20269 Broadway in the City of Sonoma (the "Property"). The CDC and Satellite Affordable Housing Associates (SAHA) are currently negotiating a Disposition and Development Agreement (DDA), pursuant to which the CDC would convey the Property to SAHA, and SAHA would develop, own and operate a 49-unit affordable housing project (the "Project") on the Property.

This letter serves to support and authorize SAHA's submission of a planning application for the Project on the Property. Please let me know if you require any further information.

Thank you.

Sincerely,

John D. Haig, Jr.
Assistant Executive Director
Sonoma County Community Development Commission



Telephone (707) 565-7500
FAX (707) 565-7583 • TDD (707) 565-7555





Adobe
Associates, Inc.
Civil Engineering,
Land Surveying &
Land Development
Services

November 2, 2016
JN 16183

City of Sonoma
Planning, Building & Public Works
1 The Plaza, Sonoma, CA 95476

**Re: Flood Elevation
Sonoma Family Housing
20269 Broadway, Sonoma CA 95476
APN 128-181-001**

Due to the concerns regarding flooding in the area of the proposed project, Adobe Associates, Inc. conducted a review of the City of Sonoma's storm drain system and FEMA maps to determine the flood elevation at the property. We first looked at the FEMA map panel 939 of 1150, map number 0697C0939E, which shows the 100-year flood elevations of Fryer Creek & Nathanson Creek, to the west and the east of the project site respectively. In review of the FEMA map it is shown that our project lies outside the 100-yr. flood elevation of both of these creeks and is located in Zone X. This is an area of minimal flood hazard, which is outside the Special Flood Hazard Area (SFHA) and higher than the elevation of the 0.2-percent-annual-chance of (or 500-yr.) flood.

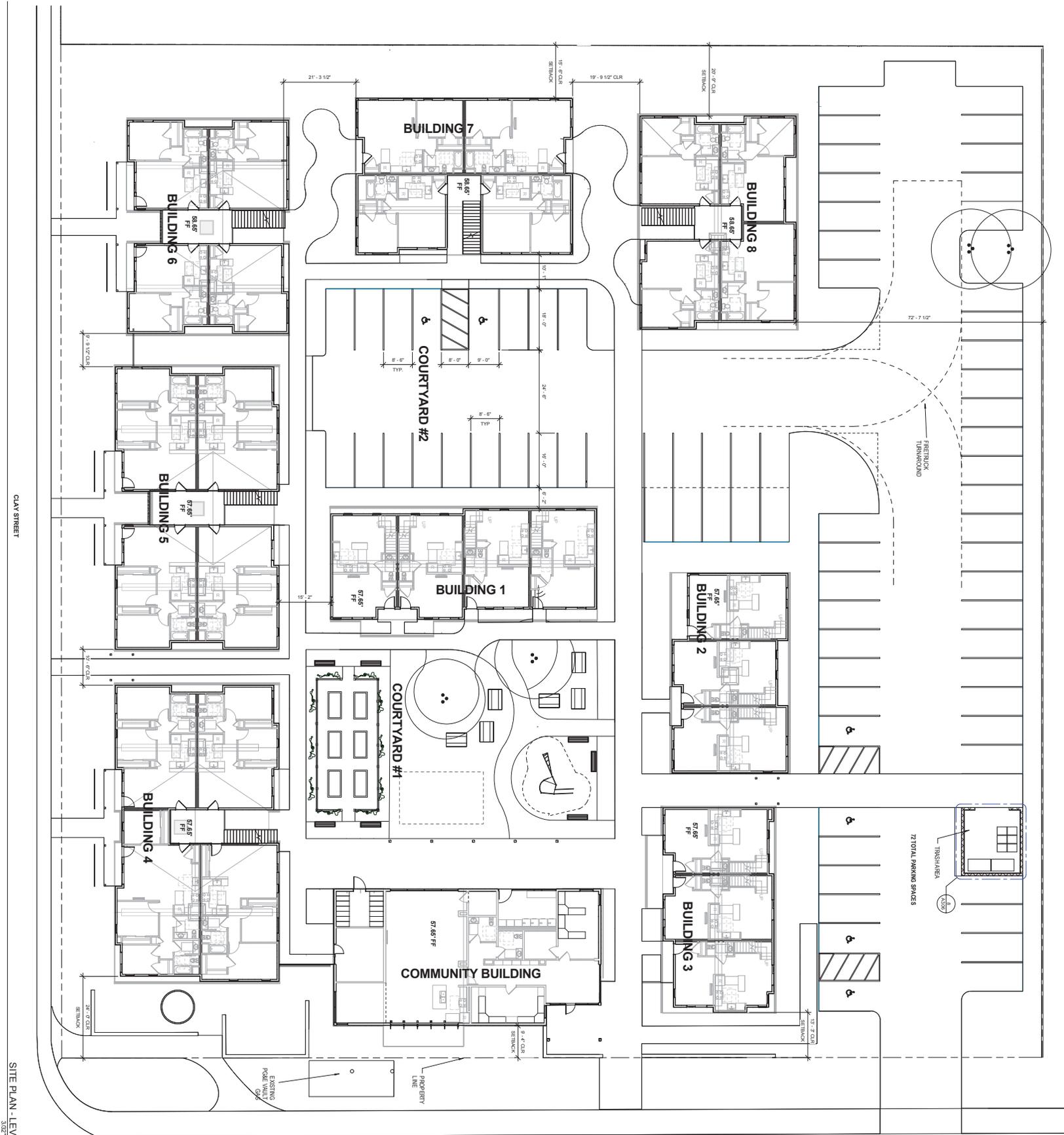
We then reviewed the City of Sonoma Storm Drain Master Plan. This plan was prepared to analyze the hydrology and hydraulics of the storm drain systems throughout the City. The system of interest for this project that we reviewed is located on the south side of Clay Street. The City has installed a 48" storm drain along Clay Street which runs by gravity from west to east then then turns and heads south down Broadway. Node 712 of the City of Sonoma Storm Drain Master Plan, the 100-yr. Hydraulic Grade Line (HGL) of the 48" pipe at this location is 2.31' below ground level at an elevation of 54.75' (NAVD '88).

We have preliminarily set the finished floor elevations of the buildings between an elevation of 57.65' and 58.65' (NAVD '88), which is 3-4ft above the flood elevation and therefore we should not have any trouble meeting the minimum 1.0' of freeboard above the 100-yr. flood elevation or be subject to flood insurance.

Regards,

Tim Schram, P.E.
Associate Principal
tschram@adobeinc.com

1220
North Dutton Ave.
Santa Rosa,
California
95401
707 541 2300
707 541 2301 - Fax
www.adobeinc.com



CLAY STREET

SITE PLAN - LEVEL 1

BROADWAY



DATE	5/22
DESIGNER	5/22
DATE	5/17
DATE	5/17
SCALE	3/32" = 1'-0"
TITLE	SITEMAN

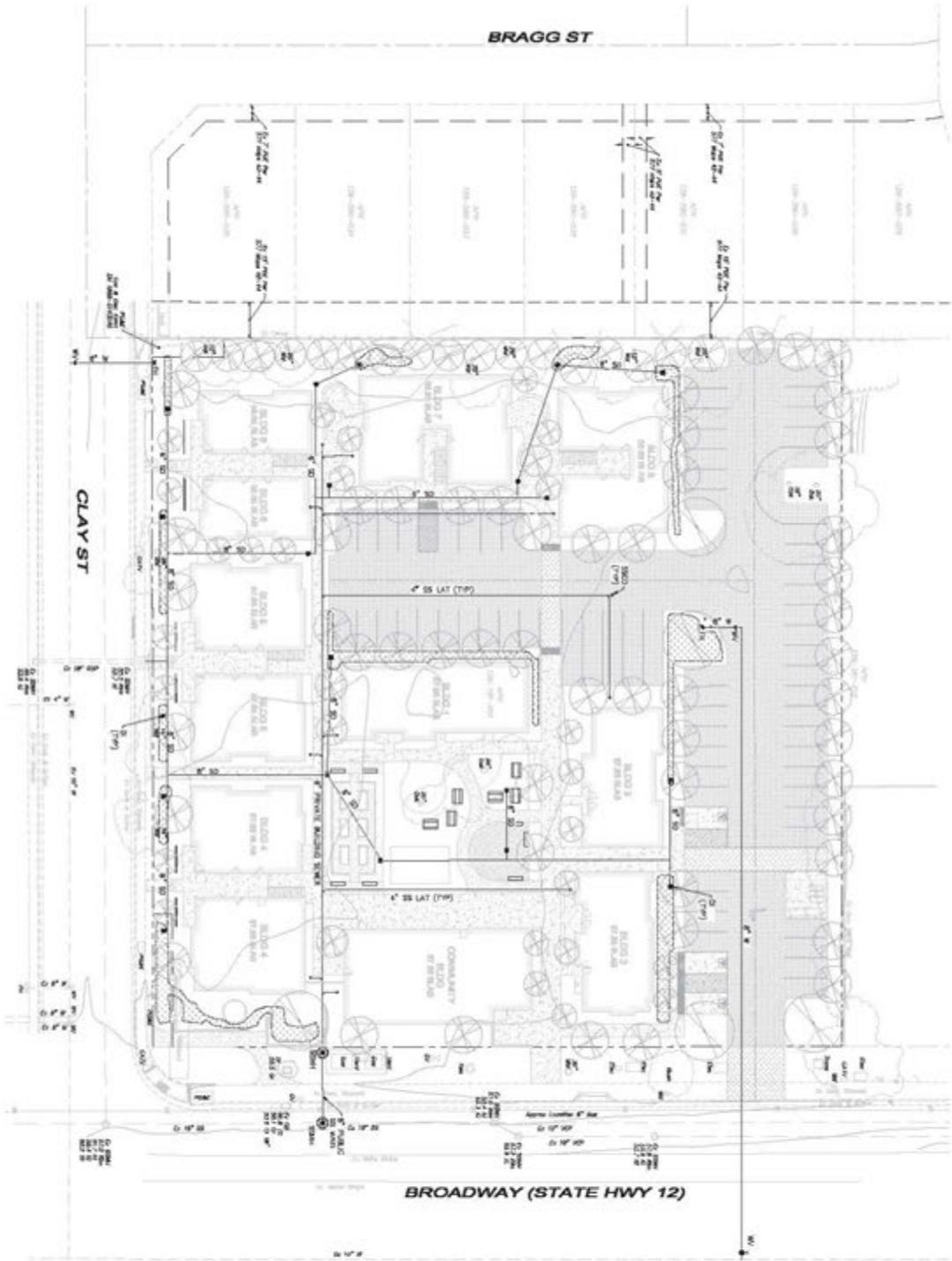
STAMP:

ALTAMIRA FAMILY APARTMENTS

20269 Broadway, Sonoma, CA

Santana Affordable Housing
 1353 Montgomery Avenue
 Berkeley, CA 94703

PRATOK
 1611 TELEGRAPH BLVD. SUITE 200
 OAKLAND, CA 94612
 510.466.7010 | 510.466.8351
 www.pratok.com



PRELIMINARY UTILITY PLAN

ALTAMIRA FAMILY HOUSING
 20269 Broadway Sonoma, CA

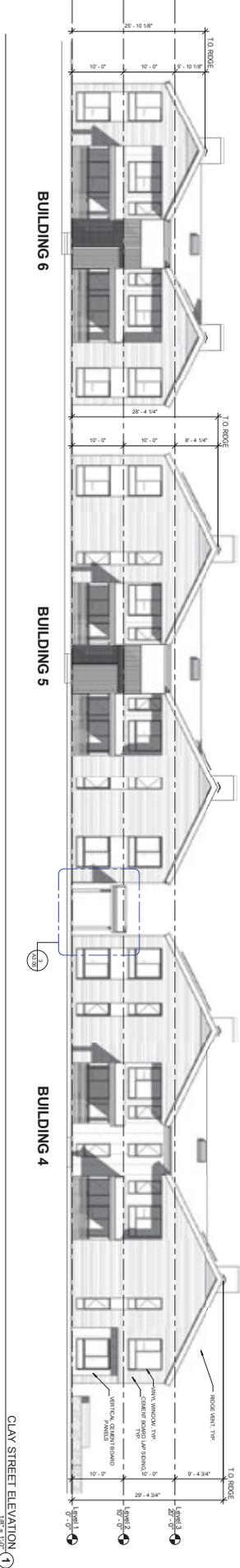
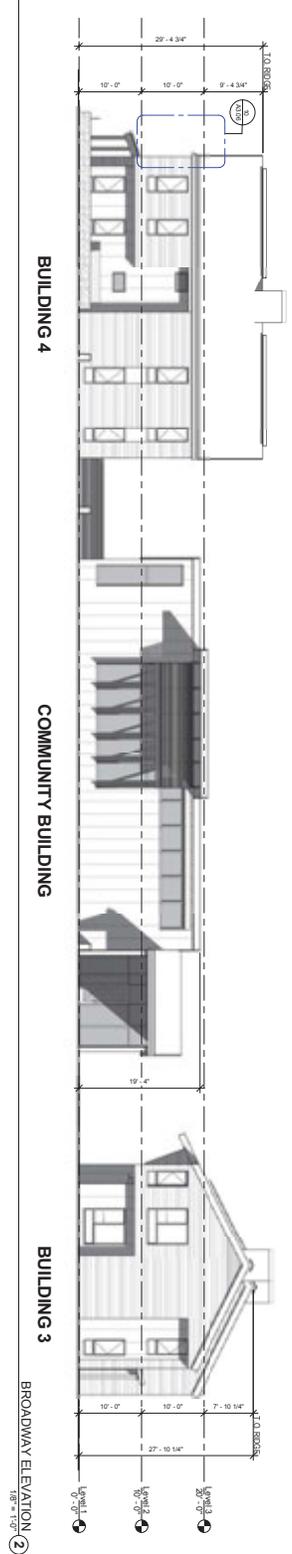
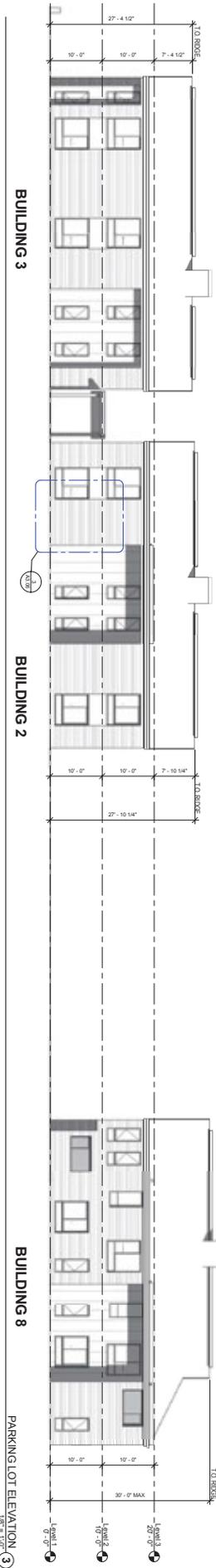
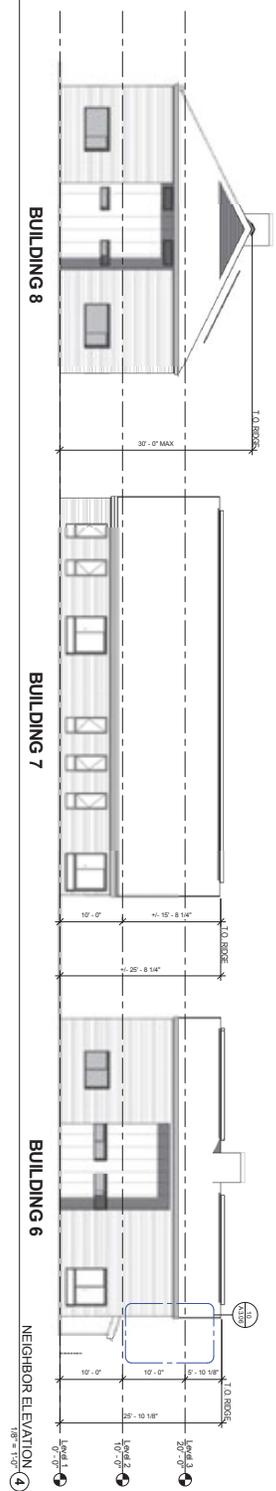


adobe associates, inc.
civil engineering | land use/planning | waterworks
 1230 K. Duban Ave., Suite 200, CA 94915
 P: (415) 941-2300 F: (415) 941-2301
 Website: www.adobeinc.com

"A Service You Can Count On"

DATE	10/22
ADVISORS	JOC WAR
OWNER	TLS
DESIGNER	Aug 18, 2017
SCALE	AS SHOWN
TITLE	Preliminary Utility Plan

C2.0



CLAY STREET ELEVATION
 1/8" = 1'-0"

A3.01

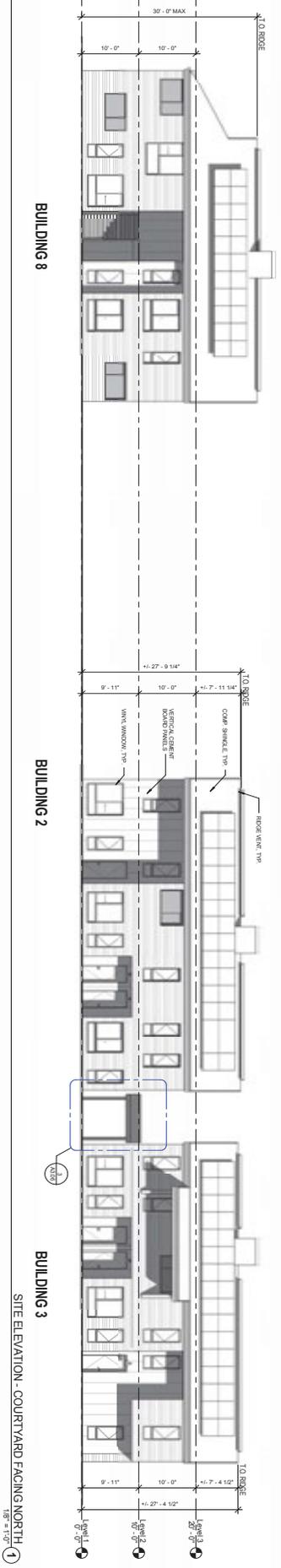
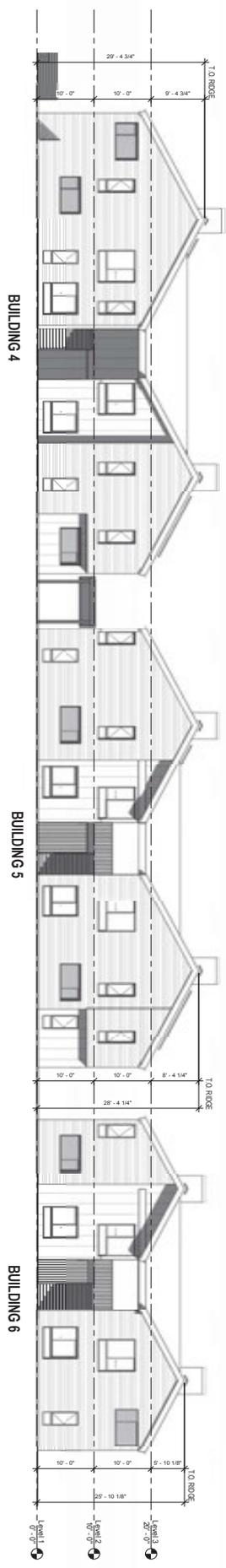
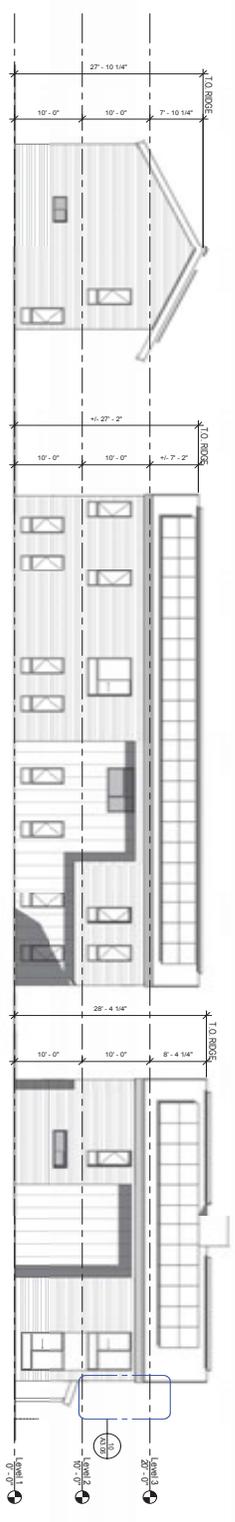
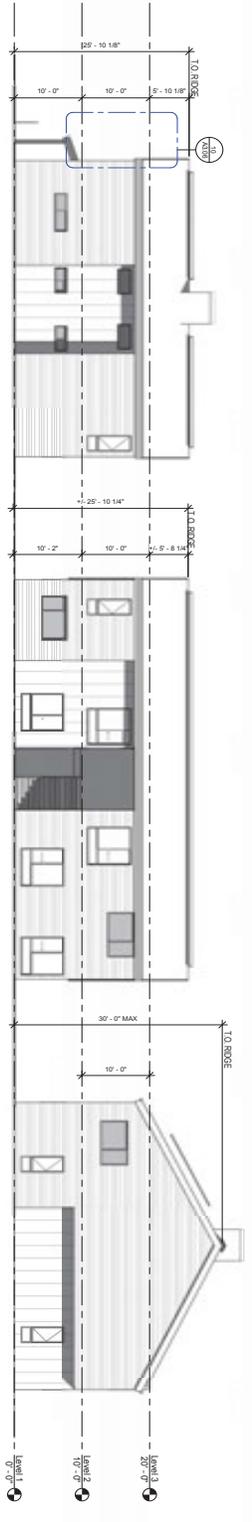
ALTAMIRA FAMILY APARTMENTS

20269 Broadway, Sonoma, CA

DATE	1/18/17
SCALE	1/8" = 1'-0"
TITLE	SITE ELEVATIONS - STREET VIEW
DESIGNED BY	AMC
DRAWN BY	SMH
CHECKED BY	SMH
DATE	1/18/17
SCALE	1/8" = 1'-0"
TITLE	SITE ELEVATIONS - STREET VIEW
DESIGNED BY	AMC
DRAWN BY	SMH
CHECKED BY	SMH
DATE	1/18/17

ALTAMIRA FAMILY APARTMENTS

20269 Broadway, Sonoma, CA



JOB NUMBER	1522
DATE	05/18/17
SCALE	1/8" = 1'-0"
TITLE	SITE ELEVATIONS
DESIGNED BY	MS
CHECKED BY	MS
DATE	05/18/17
SCALE	1/8" = 1'-0"
TITLE	SITE ELEVATIONS

Huffman-Broadway Group, Inc.

ENVIRONMENTAL REGULATORY CONSULTANTS

828 MISSION AVENUE, SAN RAFAEL, CA 94901 • 415.925.2000 • WWW.H-BGROUP.COM

May 5, 2016

Mr. Adam Kuperman
Associate Project Manager
Satellite Affordable Housing Associates
1835 Alcatraz Avenue
Berkeley, California 94703

Subject: Biological Assessment Report for 20269 Broadway in Sonoma, California

Dear Mr. Kuperman:

At your request, Huffman-Broadway Group, Inc. (HBG) conducted a biological assessment for a 1.97 acre site in City of Sonoma, Sonoma County, California (see Figures 1 and 2). Our assessment is detailed below.

BACKGROUND

Project Location. The Project Site is a 1.97-acre parcel located on State Highway 12 in the City of Sonoma, California. The property consists of Sonoma County Assessor Parcel (APN) No. 128-181-001. State Highway 12 (Broadway) forms the eastern border of the property. Further to the east across Broadway is an amusement park known as Train Town and commercial uses, including a bike shop and restaurant. Clay Street runs along the southern border of the site and land uses on the south side of Clay Street include the Lodge at Sonoma. Residential uses occur to the west of the site and a commercial use with associated paved parking lot is found to the north of the property. The latitude and longitude of the approximate centroid point of the site is 38°16'41.432"N, 122°27'38.458"W. The Project Site is located on the Sonoma 7.5-minute USGS quadrangle map.

Proposed Project. The project proponent, Satellite Affordable Housing Associates, has indicated an intent to eventually develop the property with an affordable housing project. The density of land uses and configuration of site development depend in part on the results of this biological assessment.

Study Purpose and Objectives. The purpose of this biological study is to provide a general level biological survey to determine if there is the potential for the presence of special status species and/or sensitive habitats and, if present, the potential for project

impacts. The assessment is based on information (e.g., technical reports, data, mapping, aerial photography, and imagery) readily available at the time of the study and also on site conditions observed during a field inspection. If it is determined that there is a potential for special status species or sensitive habitats to be present, more detailed technical study following local, state, and federal environmental agency requirement would be recommended. The biological assessment is, therefore, not an official protocol level survey for establishing the presence or absence of special status species or sensitive habitats, but a study to determine the potential for presence.

The objectives of the biological assessment are to:

1. Determine if there is the potential for any special status plant species or special status animal species to be present within the Project Site;
2. Determine if there is the potential for any sensitive habitat to be present within the Project Site;
3. Analyze the potential for impacts to any special status species and sensitive habitat from the implementation of the proposed project; and
4. Determine if more detailed studies are necessary to determine the presence or absence of any special status plant species, special status animal species, or special status habitat.

Regulatory Background. The following provides regulatory background information regarding special status species and sensitive habitats:

Special Status Species. Special status species include those species listed by the federal and state governments as endangered, threatened, or rare or candidate species for these lists. Endangered or threatened species are protected by the federal Endangered Species Act of 1973 as amended, the California Native Plant Protection Act of 1977, and the California Endangered Species Act of 1970. The California Environmental Quality Act (CEQA) provides additional protection for unlisted species that meet the “rare” or “endangered” criteria defined in Title 14, California Code of Regulations Section 15380. Special status species also include those species listed by the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) as Species of Special Concern which face extirpation in California if current population and habitat trends continue. Although CDFW and USFWS Species of Concern generally have no special legal status, they are given special consideration under CEQA. The CEQA also considers impacts to plant species on California Native Plant Society (CNPS) Lists 1 and 2 as special status species and impacts to these species as well as those described above to be significant. In addition to the above described federal and state regulations for special status species, most birds in the United States, including non-special status species, are protected by the Migratory Bird Treaty Act of 1918. Under this act destroying active nests, eggs, and young is illegal.

The CDFW maintains records for the distribution and known occurrences of special status species and sensitive habitats in the California Natural Diversity Database (CNDDDB). The CNDDDB is organized into map areas based on 7.5 minute topographic quadrangle maps produced by the U.S. Geological Survey (USGS). All known occurrences of special status species are mapped onto quadrangle maps maintained by the CNDDDB. The database gives further detailed information on each occurrence, including specific location of the individual, population, or habitat (if possible) and the presumed current state of the population or habitat.

Sensitive Habitats. Sensitive habitats are those habitats which have been identified by local, state, or federal agencies as areas which provided special functions or values. These habitats are subject to regulation under various local, state, and federal regulations such as the following:

City or County Tree Ordinances	The California Endangered Species Act
City or County General Plan Land Use Areas	The Federal Clean Water Act
City, County, State, or Federal Special Habitat Management Areas	The Federal Endangered Species Act (listed species or critical habitat)
The California Porter-Cologne Act	The Federal Migratory Bird Treaty Act
The California Coastal Act	The Bald and Golden Eagle Protection Act
The California Environmental Quality Act (CEQA)	The National Environmental Protection Act
Habitats such as serpentine soils or vernal pools supporting plant species on California Native Plant Society (CNPS) Lists 1 and 2 which are considered special status habitats under CEQA.	The Federal Magnuson-Stevens Fishery Conservation and Management Act
The California Department of Fish and Wildlife Lake and Streambed Alteration Agreement Program	The Federal Coastal Zone Management Act

Sensitive habitats potentially found within the Project Area include:

Waters of the United States. The Department of the Army, acting through the U.S. Army Corps of Engineers (USACE), has the authority to permit the discharge of dredge or fill material in waters of the U.S. under Section 404 of the Clean Water Act (CWA). Waters of the U.S. include both wetlands and “other waters of the U.S.” Wetlands and other waters of the U.S. are described by U.S. Environmental Protection Agency (US EPA) and USACE regulations (40 CFR § 230.3(s) and 33 CFR § 328.3(a), respectively). US EPA and the USACE define wetlands as “...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (US EPA regulations at 40 CFR § 230.3(t); USACE regulations at 33 CFR § 328.3(b)). Both natural and manmade wetlands and other waters (not vegetated by a dominance of rooted emergent vegetation) are subject to regulation. The geographic extent of wetlands is defined by the collective presence of a dominance of wetland vegetation, wetland hydrology conditions, and wetland soil conditions as determined following the USACE’ 1987 Wetlands Delineation Manual (1987 Manual); the USACE’ 2008 Regional Supplement to Corps of Engineers Wetland Delineation Manual: Arid West, Version 2.0 (Arid West Regional Supplement); and

supporting guidance documents. The geographic extent of other waters of the U.S. is defined by an ordinary high water mark (OHWM) in non-tidal waters (33 CFR. §328.3(e)) and by the High Tide Line within tidal waters (33 CFR. §328.3(d)).

Waters of the State. Waters of the State are defined more broadly than “waters of the US” to mean “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code section 13050(e)). Examples include, but are not limited to, rivers, streams, lakes, bays, marshes, mudflats, unvegetated seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. Waters of the State include all waters within the state’s boundaries, whether private or public, including waters in both natural and artificial channels. They include all “waters of the United States”; all surface waters that are not “waters of the United States, e.g. non-jurisdictional wetlands; groundwater; and the territorial seas
(http://www.waterboards.ca.gov/academy/courses/wqstandards/materials/water_us_ca/ca_water_042508.pdf)

The State Water Quality Control Board (SWQCB) and its Regional Boards, including the North Coast Regional Water Quality Control Board (NCRWQCB), routinely rely on the USACE / US EPA jurisdictional determinations as they have no adopted methodology for the identification and delineation of wetlands or other waters of the State. However, as a matter of policy the SWQCB / NCRWQCB consider wetlands and waters determined non-jurisdictional by the USACE / USEPA under *SWANCC* or *Rapanos guidance to remain jurisdictional as waters of the State subject to SWQCB / NCRWQCB jurisdiction*. Similarly the SWQCB / NCRWQCB typically takes jurisdiction over wetlands and other waters where the USACE / US EPA has determined a wetland or other water of the US is exempted or excluded from jurisdiction or where the USACE / USEPA determines that the proposed project activity is exempt from regulation.

Lakes, Streams and Associated Riparian Habitat. The California Department of Fish and Wildlife (CDFW) regulates lakes and streams under Section of 1602 of the California Fish and Game Code (FGC). CDFW’s regulations implementing the FGC define the relevant rivers, streams and lakes over which the agency has jurisdiction to constitute “all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which have intermittent flows of water.” (Title 14 *California Code of Regulations* [CCR] § 720). The regulations further define the terms “stream” and “lake” as follows:

14 CCR § 1.72. Stream (Includes Creeks and Rivers). *A stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.*

14 CCR § 1.56. Lake. *Includes natural lakes or man-made reservoirs.*

The CDFW takes jurisdiction under its Lake and Streambed Alteration Agreement Program for any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water. The CDFW does not have a methodology for the identification and delineation of the jurisdictional limits of streams except for the general guidance provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607 California Fish and Game Code* (CDFG 1994). In making jurisdictional determinations, CDFW staff typically rely on field observation of physical features that provide evidence of water flow through a bed and channel such as observed flowing water, sediment deposits and drift deposits and that the stream supports fish or other aquatic life. Riparian habitat is not specifically defined by the FGC but CDFW takes jurisdiction over areas within the flood plain of a body of water where the vegetation (grass, sedges, rushes, forbs, shrubs, and trees) is supported by the surface or subsurface flow.

Sensitive Plant Communities. Sensitive plant communities are those natural plant communities identified in local or regional plans, policies, ordinances, regulations, or by the CDFW which provide special functions or values. The CDFW natural plant communities considered sensitive are those CDFW ranks sensitive communities as ‘threatened’ or ‘very threatened’ and keeps records of their occurrences in its CNDDDB. All known occurrences of sensitive habitats are mapped onto 7.5 minute USGS topographic quadrangle maps maintained by the CNDDDB. Sensitive plant communities are also identified by CDFW on their List of California Natural Communities Recognized by the CNDDDB. Impacts to sensitive natural communities must be considered and evaluated under CEQA.

BIOLOGICAL SURVEY

Methods. In preparation for HBG’s field inspection of the Project Site, existing landforms and soil types that may potentially contain sensitive habitats were searched for by reviewing orthorectified digital aerial photograph (Figure 1); USGS topographic mapping (Figure 2); and the NRCS Web Soil Resources Report for the Study Area (NRCS 2016). A search of the CNDDDB records of occurrence for special status plants and animals and sensitive habitats was also conducted. This database search included the Sonoma 7.5-minute quadrangle which contains the Project Site and adjacent USGS 7.5-minute quadrangles which include the Glen Ellen, Napa, Rutherford, Petaluma River, Sears Point and Cuttings Wharf quadrangles. A field inspection of the Project Site was conducted by Gary Deghi of HBG on April 26, 2016. This field survey consisted of walking the parcel on foot noting: (1) plant communities present; (2) if the site provided conditions potentially suitable for special status species; or (3) if sensitive habitats were potentially present. All information collected prior to and during the April 26, 2016 field

inspection was analyzed to determine (1) if there is the potential for special status species or sensitive habitats to be present onsite and (2) the potential for biological impacts resulting from development of the site with an affordable housing project.

General Project Site Description. The Project Site was found to be surrounded by residential, commercial and recreational land uses within an urban area developed on relatively level terrain (Figures 1 and 2). Based on review of the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey the underlying soils throughout the site are mapped as Wright loam, 0 to 9 percent slopes (USDA 2016).

Plant Communities. Vegetation communities are assemblages of plant species growing in an area of similar biological and environmental factors. Vegetation communities and habitats at the project site were identified based on the currently accepted List of Vegetation Alliances and Associations (or Natural Communities List) (CDFW 2010). The list is based on A Manual of California Vegetation, Second Edition (Sawyer and Keeler-Wolf 2009), which is the National Vegetation Classification applied to California. Wetland habitats on-site were further classified using the U.S. Fish and Wildlife's Service's "Classification System for Wetland and Deepwater Habitats" (Cowardin et al. 1979). The project site contains one habitat type according to the Natural Communities List: Non-native Grassland.

Vegetation within the Non-native Grassland area included mostly non-native species of grasses and herbaceous plants. Dominant species throughout the site were non-native species that included soft chess (*Bromus hordeaceus*), wild oats (*Avena fatua*), filaree (*Erodium botrys*), foxtail barley (*Hordeum murinum ssp. leporinum*), black mustard (*Brassica nigra*), sweet clover (*Melilotus indica*) and bur clover (*Medicago polymorpha*). Other non-native species observed at the site were ripgut brome (*Bromus diandrus*), perennial ryegrass (*Festuca perennis*), medusahead (*Taeniatherum caput-medusae*), wild radish (*Raphanus sativa*), sweet fennel (*Foeniculum vulgare*), dandelion (*Taraxacum officinale*), salsify (*Tragopogon porrifolius*), bull mallow (*Malva nicaeensis*), curly dock (*Rumex crispus*), English plantain (*Plantago lanceolata*), Italian thistle (*Carduus pycnocephalus*), sweet pea (*Lathyrus sp.*), rose clover (*Trifolium hirtum*), and other clover species (*Trifolium sp.*). Some native species were also found including California poppy (*Eschscholzia californica*) and native lupines (*Lupinus sp.*). Small thickets of native California blackberry (*Rubus ursinus*) and non-native Himalayan blackberry (*Rubus armeniacus*) could be found along fence lines at the property boundaries.

The Non-native Grassland was interspersed with a number of mostly non-native species of trees and shrubs. Most of these planted trees are walnut trees (*Juglans sp.*), several others are fruit trees (*Prunus sp.*) and there is a single fig tree (*Ficus carica*). Native trees included one large and one small valley oak (*Quercus lobata*), a small California bay tree (*Umbellularia californica*) and one small interior live oak (*Quercus wislizeni*). Shrubs included species such as cotoneaster (*Cotoneaster sp.*) and several others, including a grape vine (*Vitis vinifera*).

Animal Populations. The mostly non-native trees, shrubs and grasslands in this urban environment provide limited habitat for species of wildlife. A number of bird species were noted during the field visit including Eurasian Collared-Dove (*Streptopelia decaocto*), Anna's Hummingbird (*Calypte anna*), Black Phoebe (*Sayornis nigricans*), Western Scrub-jay (*Aphelocoma californica*), Common Raven (*Corvus corax*), American Crow (*Corvus brachyrhynchos*), Northern Mockingbird (*Mimus polyglottos*), Tree Swallow (*Tachycineta bicolor*), Western Bluebird (*Sialia mexicana*), European Starling (*Sturnus vulgaris*), California Towhee (*Pipilo crissalis*) and House Finch (*Haemorhous mexicanus*). A Red-shouldered Hawk (*Buteo lineatus*) was heard calling from a nearby location. As visits were conducted during the nesting season, it is entirely possible that any of these species could be nesting on or in the vicinity of the site. Species flying over the site during the survey included Cooper's Hawk (*Accipiter cooperii*), Turkey Vulture (*Cathartes aura*) and America White Pelican (*Pelicanus erythrorhynchos*).

No mammals were observed during the survey, but mammals anticipated to use the site would be species adapted to disturbed urban environments such as Botta's pocket gopher (*Thomomys bottae*), Virginia opossum (*Didelphis virginiana*), deer mouse (*Peromyscus maniculatus*), striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*). No amphibians or reptiles were observed despite looking under a number of boards, but amphibians occurring in the area are likely to include Pacific treefrog (*Pseudacris regilla*), western toad (*Bufo boreas*), arboreal salamander (*Aneides lugubris*) and California slender salamander (*Batrachoseps attenuatus*). Reptiles could include western fence lizard (*Sceloporus occidentalis*), northern alligator lizard (*Gerrhonotus coeruleus*), gopher snake (*Pituophis melanoleucus*) and Coast garter snake (*Thamnophis elegans terrestris*).

Special Status Species. HBG considered the potential for special status plant and animal species to occur at the Project Site. A target list of special status plants found within 10 miles of the site is shown in Table 1 that includes all species mentioned in the CNDDDB occurring within 10 miles of the project site. Table 2 presents an evaluation of special status animal species that have been reported in the vicinity of the project. The special status animal species evaluated in Table 2 include those noted in the CNDDDB as occurring within 10 miles of the site and those that are known to occur in the general vicinity based on the knowledge of HBG biologists. Key species are either known to occur in the vicinity of the property or with a potential to occur at the site, or that require specific study to determine presence/absence, are discussed below.

Special Status Plant Species. Special status plant species noted in the CNDDDB as occurring within a couple miles of the Project Site include Franciscan onion (*Allium peninsulare* var. *franciscanum*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Sonoma sunshine (*Blennosperma bakeri*), narrow-anthered California brodiaea (*Brodiaea californica* var. *leptandra*), dwarf downingia (*Downingia pusilla*), and congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*).

Sonoma Sunshine is state and federally-listed endangered and on California Native Plant Society (CNPS) List 1B.1. Dwarf downingia is on CNPS list 2B.2. Both are vernal pool species that would not be present on the subject property due to the lack of such habitats at the site. Big-scale balsamroot, narrow-anthered brodiaea and congested-headed hayfield tarplant are all on CNPS list 1B.2. The remaining plant species mentioned are found in habitats not present at the site: Franciscan onion and big-scale balsamroot are often found on serpentine soils, narrow-anthered California brodiaea is found in broadleaf forest, and congested-headed hayfield tarplant is found in hills and valleys in grasslands. Though these species can be found in the general vicinity of the Project Site, none of these species would find suitable habitat conditions for occurrence at the subject property.

Technical Finding. In general, the highly urbanized nature of the project area and presence of a high component of non-native species of flora, make the site a poor candidate for supporting special status plant species. The Project Site does not provide suitable habitat for any of the special status plant species known to occur within the area. All of the special status plant species found in the general area require unique environments such as vernal pools, woodlands, native grasslands or serpentine soils not found at the Project Site.

Special Status Animal Species. Out of the many special status species reviewed in Table 2, only three have been known to occur within a couple miles of the Project Site. These species include western pond turtle (*Emmys marmorata*), bank swallow (*Riparia riparia*), and pallid bat (*Antrozous pallidus*). Bank swallow is listed as a threatened species in California and the western pond turtle and pallid bat are state-designated species of special concern. Western pond turtle requires aquatic habitats that are not found at the subject site. The documented sighting of nesting bank swallows noted in the CNDDDB is an 1893 record of nesting bank swallow along Sonoma Creek. As no suitable nesting habitat in the form of cliffs or banks occurs within the Project Site, nesting bank swallows would not occur at the subject property. Pallid bat night roosts were identified in 1999 at the Watmaugh Road and Riverside Road bridges over Sonoma Creek, both in the general vicinity of the Project Site. No suitable habitat for a night roost such as found at these bridges occurs at the Project Site and, therefore, pallid bat roosts would not be expected at the site.

Technical Findings. The disturbed nature of the Project Site does not provide suitable habitat for any of the special status animal species known to occur within the area. All of the special status animal species found in the general area require habitat types which are not found at the Project Site.

Sensitive Habitats. Review of the CNDDDB shows that no sensitive habitats are documented to have occurred within or in the nearby the vicinity of the Project Site. The field inspection did not find any sensitive habitats within the Project Site. The Project

Site is not within the area covered by the Santa Rosa Plain Conservation Strategy. The nearest streams are Nathanson Creek (located approximately 700 feet or about 0.13 miles to the east of the site) and Sonoma Creek (located approximately 2,400 feet or about 0.45 miles to the west of the site).

Technical Findings. No sensitive habitats as defined by the California Environmental Quality Act or state or federal regulation occur at the Project Site. No sensitive habitats were found that would be potentially regulated by the USACE as waters of the U.S. (including wetlands) under Section 404 of the Clean Water Act; by the RWQCB as waters of the state of California (including wetlands) under their Section 401 Clean Water Act or Porter-Cologne Act regulatory authorities; or by the CDFW under Section of 1602 of the California Fish and Game Code (lakes or streams).

BIOLOGICAL ASSESSMENT

Special Status Species. No impact to special status species would result from the proposed project. This determination is based on the technical finding that the disturbed habitat at the Project Site is not suitable to support any of the special status plant or animal species known to occur within the area as defined by the California Environmental Quality Act or state or federal regulation.

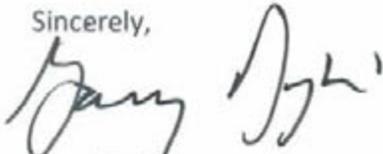
Landscape and orchard trees and shrubs within the Project Site do provide potential nesting sites for birds protected under the MBTA, and an impact to one or more nesting species (including non-special status species) could occur if appropriate protections are not in place during construction activities.

Sensitive Habitats. No impact to sensitive habitat would result from the proposed project. This determination is based on the technical finding that no sensitive habitats as defined by the California Environmental Quality Act or state or federal regulation occur at the Project Site.

Professional Opinion. The proposed project would have no biological impact on special status plants, special status animals, or sensitive habitats. Due to the lack of the potential for special status plant or animal, species or sensitive habitat no further biological assessment is necessary. However, if an affordable housing project is approved for the site, it is recommended that searches for nesting birds be conducted by a qualified biologist prior to commencement of any construction for the proposed project occurring during the nesting season (generally between February 1 and August 31). If an occupied nest for any bird species protected under the MBTA is found, then the active nest should be protected in accordance with the MBTA until the young have fledged.

If you have any questions regarding this biological report please email me at gdeghi@h-bgroup.com or Terry Huffman at thuffman@h-bgroup.com or call us at 415-925-2000.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Deghi". The signature is fluid and cursive, with the first name "Gary" written in a larger, more prominent script than the last name "Deghi".

Gary Deghi

Senior Environmental Scientist

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Figures

Figure 1. Aerial Photograph of the Project Site

Figure 2. USGS Topographic Map of the Project Site



Figure 1. Aerial Photograph of the Project Site

20269 Broadway (APN 128-181-001)
Sonoma, Sonoma County, California

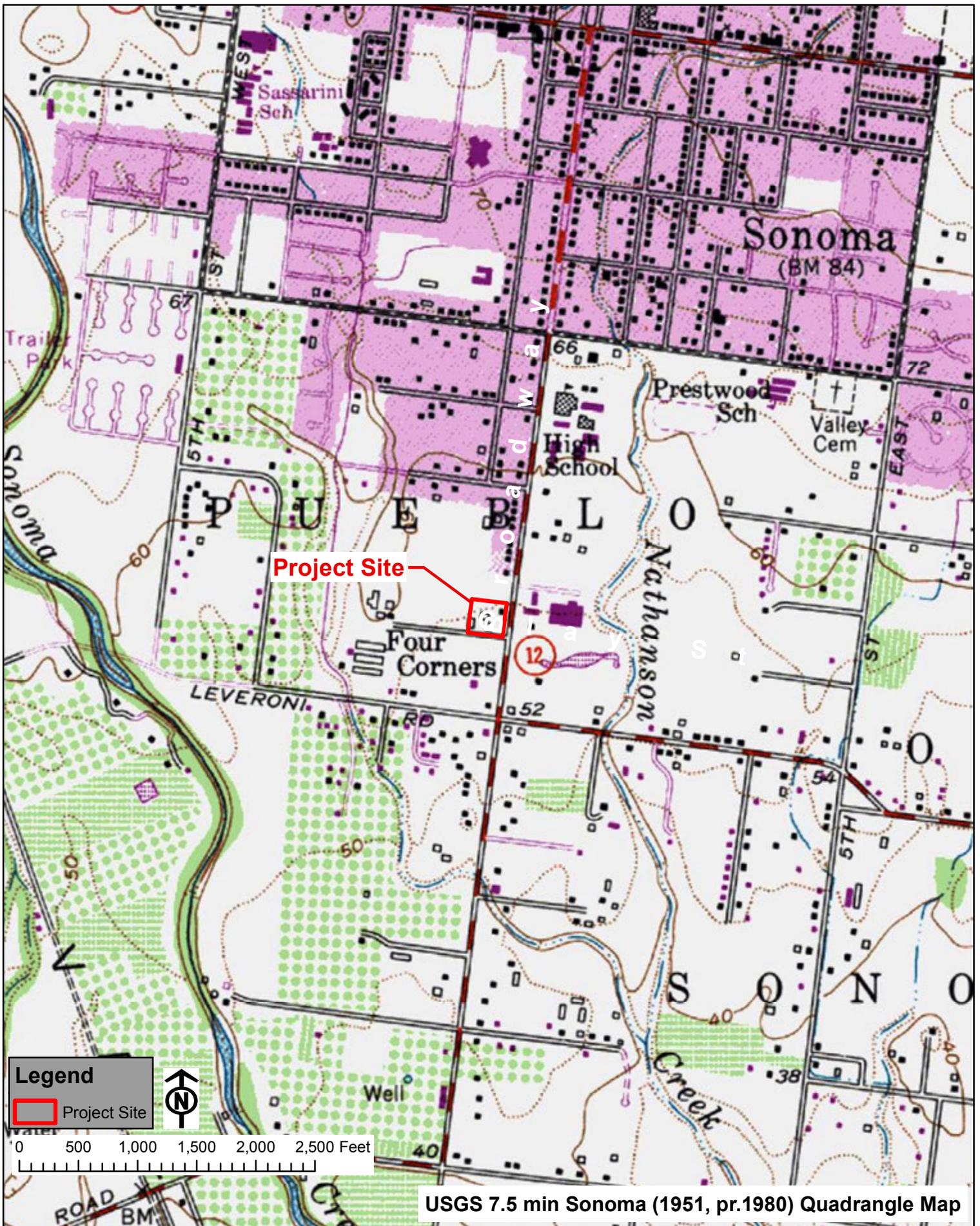


Figure 2. USGS Topographic Map of the Project Site

20269 Broadway (APN 128-181-001)
 Sonoma, Sonoma County, California

Tables

Table 1. Special Status Plants Known to Occur in the Vicinity of the Project Area, Sonoma County, California

Table 2. Special Status Animal Species That Have Been Reported in the Vicinity of the Project Area, Sonoma County, California

Table 1. Special Status Plants Known to Occur in the Vicinity of the Project Area, Sonoma County, California

SCIENTIFIC NAME	STATUS ² FED/STATE/CNPS	HABITAT/RANGE	OCCURRENCE
Franciscan onion (<i>Allium peninsulare</i> var. <i>franciscanum</i>)	--/--/1B.2	On clay soils on dry hillsides, often on serpentine, in cismontane woodland and valley and foothill grassland. 100-300m.	Not present. Suitable habitat is not present at the site.
Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>)	--/--/1B.2	Broad-leaved upland forest, chaparral, cismontane woodland; openings in forest or woodland or in chaparral (150-2000m).	Not present. Suitable habitat is not present at the site.
Rincon Ridge Manzanita (<i>Arctostaphylos stanfordiana</i> <i>ssp. decumbens</i>)	--/--/1B.1	Chaparral. Highly restricted to endemic rhyolites in Sonoma County. 75-310m.	Not present. Suitable habitat is not present at the site.
San Joaquin spearscale (<i>Atriplex joaquiniana</i>)	--/--/1B.2	Chenopod scrub, meadows, playas, valley and foothill grassland and vernal pools. Usually in seasonal alkali wetlands or alkali sink scrub with <i>Distichlis</i> , <i>Frankenia</i> , etc. 1-835m.	Not present. Suitable habitat is not present at the site.
Big-scale (California) balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	--/--/1B.2	Chaparral, cismontane woodland, valley and foothill grassland, sometimes on serpentine. 90-1555m.	Not present. Suitable habitat is not present at the site.
Sonoma sunshine (<i>Blennosperma bakeri</i>)	FE/CE/1B.1	Vernal pools and swales in valley and foothill grassland. 10-100m.	Not present. Suitable habitat is not present at the site.
Narrow-anthered California brodiaea (<i>Brodiaea californica</i> var. <i>leptandra</i>)	--/--/1B.2	Broadleaved upland forest, chaparral, lower montane coniferous forest. 110-915m.	Not present. Suitable habitat is not present at the site.

SCIENTIFIC NAME	STATUS ² FED/STATE/CNPS	HABITAT/RANGE	OCCURRENCE
Rincon Ridge Ceanothus (<i>Ceanothus confusus</i>)	--/--/1B.1	Known from volcanic or serpentine soils on dry shrubby slopes in closed-cone coniferous forest, chaparral, and cismontane woodland. 75-1065m.	Not present. Suitable habitat is not present at the site.
Sonoma ceanothus (<i>Ceanothus sonomensis</i>)	--/--/1B.2	On sandy, serpentine or volcanic soils in chaparral. 210-800m.	Not present. Suitable habitat is not present at the site.
Pappose tarplant (<i>Centromadia parryi</i> ssp. <i>parryi</i>)	--/--/1B.2	Found in mesic and often alkaline site in coastal prairie, meadows and seeps, coastal salt marsh and valley and foothill grasslands. 2-420m	Not present. Suitable habitat is not present at the site.
Soft salty bird's-beak (<i>Chloropyron molle</i> ssp. <i>molle</i>)	FE/Rare/1B.2	Found in Coastal salt marsh with <i>Distichlis</i> , <i>Salicornia</i> , <i>Frankenia</i> , etc. 0-3m.	Not present. Suitable habitat is not present at the site.
Dwarf downingia (<i>Downingia pusilla</i>)	--/--/2B.2	Inhabits vernal pools and vernal lake margins. 1-445m.	Not present. Suitable habitat is not present at the site.
Greene's narrow-leaved daisy (<i>Erigeron greenii</i>)	--/--/1B.2	Serpentine and volcanic substrates in chaparral. 75-1060m.	Not present. Suitable habitat is not present at the site.
Fragrant fritillary (<i>Fritillaria liliaceas</i>)	--/--/1B.2	Coastal scrub, coastal prairie and valley and foothill grasslands, often on serpentine but usually in clay. 3-410m.	Not present. Suitable habitat is not present at the site.
Congested-headed hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	--/--/1B.2	Found in grassy valleys and hills in valley and foothill grassland, often in fallow fields and sometimes along roadsides. 20-560m.	Not present. Suitable habitat is not present at the site.
Thin-lobed horkelia (<i>Horkelia tenuiloba</i>)	--/--/1B.2	Coastal scrub, chaparral. Sandy soils, mesic openings. 45-500 m.	Not present. Suitable habitat is not present at the site.
California black walnut (<i>Juglans hindsii</i>)	--/--/1B.2	Few extant native stands remain in riparian forest and riparian woodland. Found in deep alluvial soils associated with streams and creeks. Widely naturalized. 0-640m.	Not present. Suitable habitat is not present at the site.

SCIENTIFIC NAME	STATUS ² FED/STATE/CNPS	HABITAT/RANGE	OCCURRENCE
Contra Costa Goldfields (<i>Lasthenia conjugens</i>)	FE/--/1B.1	Vernal pools, swales, low depressions, in open grassy areas. 1-445m. Extirpated from most of its range. Most remaining occurrences restricted to the Fairfield region.	Not present. Suitable habitat is not present at the site.
Delta Tule Pea (<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>)	--/--/1B.2	Inhabits the banks of sloughs and bays in the Suisun Bay and Delta. Found in freshwater and brackish marshes. Occurs along the Napa River.	Not present. Suitable habitat is not present at the site.
Jepson's Leptosiphon (<i>Leptosiphon jepsonii</i>)	--/--/1B.2	Found in open to partially shaded grassy slopes on volcanic soils or the periphery of serpentine substrates within chaparral and cismontane woodland. 100-500m.	Not present. Suitable habitat is not present at the site.
Mason's lilaepsis (<i>Lilaeopsis masonii</i>)	--/CR/1B.1	Inhabits the edges of mudflats in brackish marsh and riparian scrub in the Delta. 0-10m. Occurs along the Napa River.	Not present. Suitable habitat is not present at the site.
Cobb mountain lupine (<i>Lupinus sericatus</i>)	--/--/1B.2	Chaparral, cismontane woodland, lower montane coniferous forest; in stands of knob cone pine-oak woodland; on open woodland slopes in gravelly soils; sometimes on serpentine. 180-1500m.	Not present. Suitable habitat is not present at the site.
Suisun Marsh aster (<i>Symphotrichum lentum</i>)	--/--/1B.2	Both brackish and freshwater marshes and swamps. 0-3m. Occurs along the Napa River.	Not present. Suitable habitat is not present at the site.
Two-fork clover (<i>Trifolium amoenum</i>)	FE/--/1B.1	Inhabits moist clay grassland soils; known from one extant occurrence in Marin County. 5-560m. Known from a 1951 sighting near Napa.	Not present. Suitable habitat is not present at the site.

SCIENTIFIC NAME	STATUS ² FED/STATE/CNPS	HABITAT/RANGE	OCCURRENCE
Saline Clover (<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>)	--/--/1B.2	Marshes and swamps, mesic alkaline sites, vernal pools in valley and foothill grassland. 0-300m.	Not present. Suitable habitat is not present at the site.
Oval-leaved viburnum (<i>Viburnum ellipticum</i>)	--/--/2B.3	Chaparral, cismontane woodland and lower montane coniferous forest. 215-1400m.	Not present. Suitable habitat is not present at the site.

1. Source: California Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Wildlife for the Sonoma 7.5 Minute Quadrangle Map and surrounding areas, information April 2016.

2. Status Codes:

- FE Federal-listed Endangered
- FT Federal-listed Threatened
- FPE Federal Proposed Endangered
- FPT Federal Proposed Threatened
- CE California State-listed Endangered
- CT California State-listed Threatened
- CR California Rare
- FP California Fully Protected
- CSC California Species of Special Concern

- California Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
- California Rare Plant Rank 2A: Plants presumed extirpated in California, but more common elsewhere.
- California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- California Rare Plant Rank 3: Plants about which more information is needed – a review list.
- California Rare Plant Rank 4: Plants of limited distribution – a watch list.
- CNPS Threat Ranks
- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- 0.3-Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Table 2. Special Status Animal Species that have been Reported in the Vicinity of the Project Area, Sonoma County, California

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
ANIMALS			
Blennosperma Vernal Pool Andrenid Bee (<i>Andrena blennospermatidis</i>)	--/--	Oligolectic on vernal pool flowers, especially Blennosperma.	Not present. Suitable habitat is not present at the site.
Ricksecker's Water Scavenger Beetle (<i>Hydrochara rickseckeri</i>)	--/--	Aquatic beetle that lives in weedy shallow, open water associated freshwater seeps, springs, farm ponds, vernal pools (playa type pools) and slow-moving stream habitats.	Not present. Suitable habitat is not present at the site.
Tomales isopod (<i>Caecidotaea tomalensis</i>)	--/--	Inhabits localized freshwater ponds or streams with still or near-still water in several Bay Area Counties.	Not present. Suitable habitat is not present at the site.
Ricksecker's Water Scavenger Beetle (<i>Hydrochara rickseckeri</i>)	-/--	Known from aquatic habitats in the San Francisco Bay Area.	Not present. Suitable habitat is not present at the site.
California Freshwater Shrimp (<i>Syncaris pacifica</i>)	FE/CE	Found in low elevation, low gradient streams where riparian cover is moderate to heavy.	Not present. Suitable habitat is not present at the site.
Monarch Butterfly (<i>Danaus plexippus</i>)	--/Rare	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Not present. Overwintering sites not present.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Opler's longhorn moth (<i>Adela oplerella</i>)	--/--	Ranges from Marin County on the Inner Coast Ranges to Santa Clara County. Most records are on serpentine grassland. Larvae feed on <i>Platystemon californicus</i> .	Not present. Suitable habitat is not present at the site.
Steelhead – Central CA Coast DPS (<i>Oncorhynchus mykiss</i>)	FT/CSC	Well-oxygenated streams with riffles; loose, silt-free gravel substrate.	Not present. Suitable habitat is not present at the site.
California Tiger Salamander (<i>Ambystoma californiense</i>)	FE/CT, CSC	Found in annual grasslands and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water source for breeding.	Not present. Suitable habitat is not present at the site.
California Giant Salamander (<i>Dicamptodon ensatus</i>)	--/--	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams and occasionally in lake and ponds. Adults found in wet forests under rocks and logs near streams and lakes.	Not present. Suitable habitat is not present at the site.
California Red-legged Frog (<i>Rana draytonii</i>)	FT/CSC	Mostly found in lowlands and foothills in/near permanent sources of deep water but will disperse far during and after rain. Prefers shorelines with extensive vegetation. Requires 11-20 weeks of permanent water for larval development and requires access to aestivation habitat.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Foothill Yellow-legged Frog (<i>Rana boylei</i>)	--/CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying.	Not present. Suitable habitat is not present at the site.
Western Pond Turtle (<i>Emmys marmorata</i>)	--/CSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nests found up to 0.5 miles from water.	Not present. Suitable habitat is not present at the site.
Northern Harrier (<i>Circus cyaneus</i>) [nesting]	--/CSC	Coastal salt marsh and freshwater marsh; nests and forages in grasslands; nests on ground in shrubby vegetation, usually at marsh edge.	Not present. Suitable habitat is not present at the site.
White-tailed Kite (<i>Elanus caeruleus</i>) [nesting]	--/FP	Open grassland and agricultural areas throughout Central California.	Not present. Suitable habitat is not present at the site.
Sharp-shinned Hawk (<i>Accipiter striatus</i>) [nesting]	--/WL	Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers, but not restricted to, riparian habitats. North facing slopes, with plucking perches are critical requirements. All habitats except alpine, open prairie, and bare desert used in winter.	Nesting not present. Suitable habitat has not been present at the site. Species may forage on or near the site, especially in winter.
Cooper's Hawk (<i>Accipiter cooperii</i>) [nesting]	--/WL	Nests primarily in deciduous riparian forests; forages in open woodlands.	Nesting not present. Not present. Suitable habitat has not been present at the site. Species may forage on or near the site, especially in winter.
Ferruginous Hawk (<i>Bufo regalis</i>) [wintering]	BCC/WL	Inhabits open country. Winters in small number along California coast and inland valleys.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Golden Eagle (<i>Aquila chrysaetos</i>) [nesting and wintering]	BCC/FP,WL	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	Not present. Suitable habitat is not present at the site.
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	Delisted,BCC/Delisted, FP	Nests in woodland, forest and coastal habitats, on cliffs or banks, and usually near wetlands, lakes, rivers, sometimes on human-made structure. In non-breeding seasons found in riparian areas and coastal and inland wetlands.	Not present. Suitable habitat is not present at the site.
Merlin (<i>Falco columbarius</i>) [wintering]	--/WL	Breeds in Canada, winters in a variety of California habitats, including grasslands, savannahs, wetlands, etc.	Not present. Suitable habitat is not present at the site.
Osprey (<i>Pandion haliaetus</i>) [Nesting]	--/WL	Breeds in northern California from the Cascade Ranges south to Lake Tahoe, and along the coast south to Marin County. Associated strictly with large, fish-bearing waters, primarily in Ponderosa pine through mixed conifer habitats.	Not present. Suitable habitat is not present at the site.
Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>) [nesting]	FT,BCC/CSC	Found on sandy beaches or marine and estuarine shores; also salt pond levees and shores of large alkali lakes; requires sandy, gravelly or friable soil substrate for nesting.	Not present. Suitable habitat is not present at the site.
Ridgway's (California clapper) Rail (<i>Rallus obsoletus</i>)	FE/CE,FP	Found in saltwater marshes traversed by tidal sloughs in the vicinity of San Francisco Bay; associated with abundant growths of pickleweed; feeds on mollusks obtained from mud bottomed sloughs.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
California Black Rail (<i>Laterallus jamaicensis coturniculus</i>)	BCC/CT,FP	Mainly inhabits salt-marshes bordering larger bays. Occurs in tidal salt marsh with dense growths of pickleweed; also occurs in freshwater and brackish marshes.	Not present. Suitable habitat is not present at the site.
Western Yellow-billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	FC,BCC/CE	Nests in riparian forests along the broad, lower flood-bottoms of larger river systems. Requires willows, cottonwoods with lower story of blackberry, nettles or wild grape.	Not present. Suitable habitat is not present at the site.
Western Burrowing Owl (<i>Athene cunicularia hypugea</i>) (burrow sites)	BCC/CSC	Found in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. This species is a subtterranean nester, dependent upon the burrows of burrowing mammals, most notably the California Ground Squirrel.	Not present. Suitable habitat is not present at the site.
Bank Swallow (<i>Riparia riparia</i>) (nesting)	--/CT	A migrant found primarily in riparian and other lowland habitats in California west of the deserts. A spring and fall migrant in the interior, less common on coast; an uncommon and very local summer resident. In summer, restricted to riparian areas with vertical cliffs and banks with fine-textured or sandy soil, into which it digs its nesting holes. There is an 1893 record in the CNDDDB of a bank swallow colony near Sonoma.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	BCC/CSC	Habitat includes open areas such as desert, grasslands and savannah. Nests in thickly foliated trees or tall shrubs. Forages in open habitats, which contain trees, fence posts, utility poles, and other perches.	Not present. Suitable habitat is not present at the site.
California Horned Lark (<i>Eremophila alpestris actia</i>)	--/WL	Resident in a variety of open habitats, including grasslands, less common in mountain regions.	Not present. Suitable habitat is not present at the site.
Yellow Warbler (<i>Setophaga petechia</i>) [nesting]	BCC/CSC	Breeds in deciduous riparian woodlands, widespread during fall mitigation.	Nesting not present. No breeding habitat has been present onsite, migrants expected on site, especially in fall.
Saltmarsh Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	BCC/CSC	Requires thick continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Not present. Appropriate nesting habitat not present on site. Foraging by the species is possible, especially in winter.
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	--/CSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs.	Not present. Suitable habitat is not present at the site.
San Pablo Song Sparrow (<i>Melospiza melodia samuelis</i>)	BCC/CSC	Tidal, brackish or salt marshes, San Pablo Bay.	Not present. Suitable habitat is not present at the site.
Tri-colored Blackbird (<i>Agelaius tricolor</i>) [nesting colony]	BCC/CSC	Breeds near freshwater, usually in tall emergent vegetation. Requires open water with protected nesting substrate. Colonies prefer heavy growth of cattails and tules. Uses grasslands and agricultural lands for foraging.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Suisun Shrew (<i>Sorex ornatus sinuosus</i>)	--/CSC	Inhabits tidal marshes along the northern shores of San Pablo and Suisun Bays.	Not present. Suitable habitat is not present at the site.
Salt Marsh Harvest Mouse (<i>Reithrodontomys raviventris</i>)	FE/CE,FP	Inhabits saline emergent wetlands in the San Francisco Bay and its tributaries. Pickleweed is the primary habitat.	Not present. Suitable habitat is not present at the site.
American Badger (<i>Taxidea taxus</i>)	--/CSC	Drier open stages of most shrub, forest, and herbaceous habitats; needs sufficient food, friable soils and open, uncultivated ground. Publications from 1937 indicate the presence of the species in Napa.	Not present. Suitable habitat is not present at the site.
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	--/CCT,CSC	Found in desert scrub and coniferous forests. Roost in caves or abandoned mines and occasionally are found to roost in buildings.	Not present. Suitable habitat is not present at the site.
Long-legged Myotis Bat (<i>Myotis volans</i>)	--/--	Most common in woodland and forest habitats above 1200m. Also forages in chaparral, Coastal scrub and in early successional slopes of woodlands and forests. Roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves. Forms nursery colonies numbering hundreds of individuals, usually under bark or in hollow trees, but occasionally in crevices or buildings.	Not present. Suitable habitat is not present at the site.
Pallid Bat (<i>Antrozous pallidus</i>)	--/CSC	Found in deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in rocky areas primarily in oak woodland and ponderosa pine habitats; forages in open areas.	Not present. Suitable habitat is not present at the site.

SPECIES	STATUS FED/STATE	HABITAT	OCCURRENCE ON THE PROJECT SITE
Hoary Bat (<i>Lasivirus cinereus</i>)	--/--	Prefers open habitats with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees.	Not present. Suitable habitat is not present at the site.

1. Source: California Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Wildlife for the Sonoma 7.5-Minute Quadrangle Map and surrounding areas, information dated April 2016.

2. Status Codes:

- FE Federal-listed Endangered
- FT Federal-listed Threatened
- FPE Federally Proposed Endangered
- FPT Federally Proposed Threatened
- FC Federal Candidate
- BCC USFWS Bird Species of Conservation Concern
- CE California State-listed Endangered
- CT California State-listed Threatened
- CR California Rare
- FP California Fully Protected
- CSC CDFW Species of Special Concern
- WL CDFW Watch List Species

**Historical Resources Study of the Property at
20269 Broadway (APN 128-181-001)
Sonoma, Sonoma County, California**

Eileen Barrow, M.A.

March 27, 2017



**Historical Resources Study of the Property at
20269 Broadway (APN 128-181-001)
Sonoma, Sonoma County, California**

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March 27, 2017

ABSTRACT

Tom Origer & Associates conducted an historical resources survey of the property at 20269 Broadway, Sonoma, Sonoma County, California. The study was requested and authorized by David Goodison of the City of Sonoma. This study was conducted to meet the requirements of the City of Sonoma and those of the California Environmental Quality Act. The purpose of this report is to identify historical resources (see definition of historical resources in the Regulatory Context section). This report will not address Tribal Cultural Resources as defined in Public Resources Code [PRC] 21074 (a)(1)(A)-(B).

The proposed project includes development of the property for housing.

This study included archival research at the Northwest Information Center, Sonoma State University (NWIC File No. 16-1395), examination of the library and files of Tom Origer & Associates, Native American contact, and field inspection of the study area. No historical resources were found within the study area. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2017-028S).

Synopsis

Project: 20269 Broadway
Location: 20269 Broadway, Sonoma, Sonoma County
APN: 128-181-001
Quadrangles: Sonoma 7.5' series
Study Type: Intensive
Scope: 1.53 acres
Finds: None

Project Personnel

Eileen Barrow

Mrs. Barrow has been with Tom Origer & Associates since 2005. She holds a Master of Arts in cultural resources management from Sonoma State University. Mrs. Barrow's experience includes work that has been completed in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Her professional affiliations include the Society for American Archaeology, the Society for California Archaeology, the California Historical Society, the Sonoma County Historical Society, and the Western Obsidian Focus Group.

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INTRODUCTION

This report describes an historical resources survey of the property at 20269 Broadway, Sonoma, Sonoma County, California. The study was requested and authorized by David Goodison of the City of Sonoma. This study was conducted to meet the requirements of the City of Sonoma and those of the California Environmental Quality Act. The proposed project includes development of the property for housing. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 2017-028S).

REGULATORY CONTEXT

The California Environmental Quality Act (CEQA) requires that historical resources be considered during the environmental review process. This is accomplished by an inventory of resources within a study area and by assessing the potential that historical resources could be affected by development. The term “Historical Resources” encompasses prehistoric and historical archaeological sites and built environment resources (e.g., buildings, bridges, canals). An additional category of resources is defined in CEQA under the term “Tribal Cultural Resources” (Public Resources Code Section 21074). They are not addressed in this report. Tribal cultural resources are resources that are of specific concern to California Native American tribes, and knowledge of such resources is limited to tribal people. Pursuant to revisions to CEQA enacted in July of 2015, such resources are to be identified by tribal people in direct, confidential consultation with the lead agency (PRC §21080.3.1).

This historical resources survey was designed to satisfy environmental issues specified in the CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying all historical resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3)



Figure 1. Project vicinity (adapted from the 1980 Santa Rosa 1:250,000-scale USGS map).

assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

Resource Definitions

Historical resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

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 archaeological 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 be used to 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 might affect an historical resource, the project proponent is required to conduct an assessment to determine whether the effect may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be affected. The importance of a resource is measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852(a)) as listed below. A resource may be important if it meets any one of the criteria 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 local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of a master or possesses high artistic values.

4. Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

The OHP advocates that all historical resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although the use of professional judgment is urged in determining whether a resource warrants documentation.

PROJECT SETTING

Study Area Location and Description

The study area is located at 20269 Broadway, Sonoma, Sonoma County, as shown on the Sonoma 7.5' USGS topographic map (Figure 2). It consists of 1.53 acres situated on generally level land.

The geology of the study area consists of alluvial fan deposits that date to the latest Pleistocene and Holocene (30,000 years ago to present) (Wagner *et al.* 2004).

Soils within the study area belong to the Wright series (Miller 1972:Sheet 108). Wright soils range from poorly draining to moderately well-draining, loams found on low terraces. In a natural state these soils support the growth of grasses and scattered oaks. Historically, parcels containing Wright soils were used for dryland and irrigated pasture and some prune orchards (Miller 1972:86).

The closest water source is Nathanson Creek located approximately 765 feet east of the eastern boundary of the study area.

Cultural Setting

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson *et al.* 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion.

Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

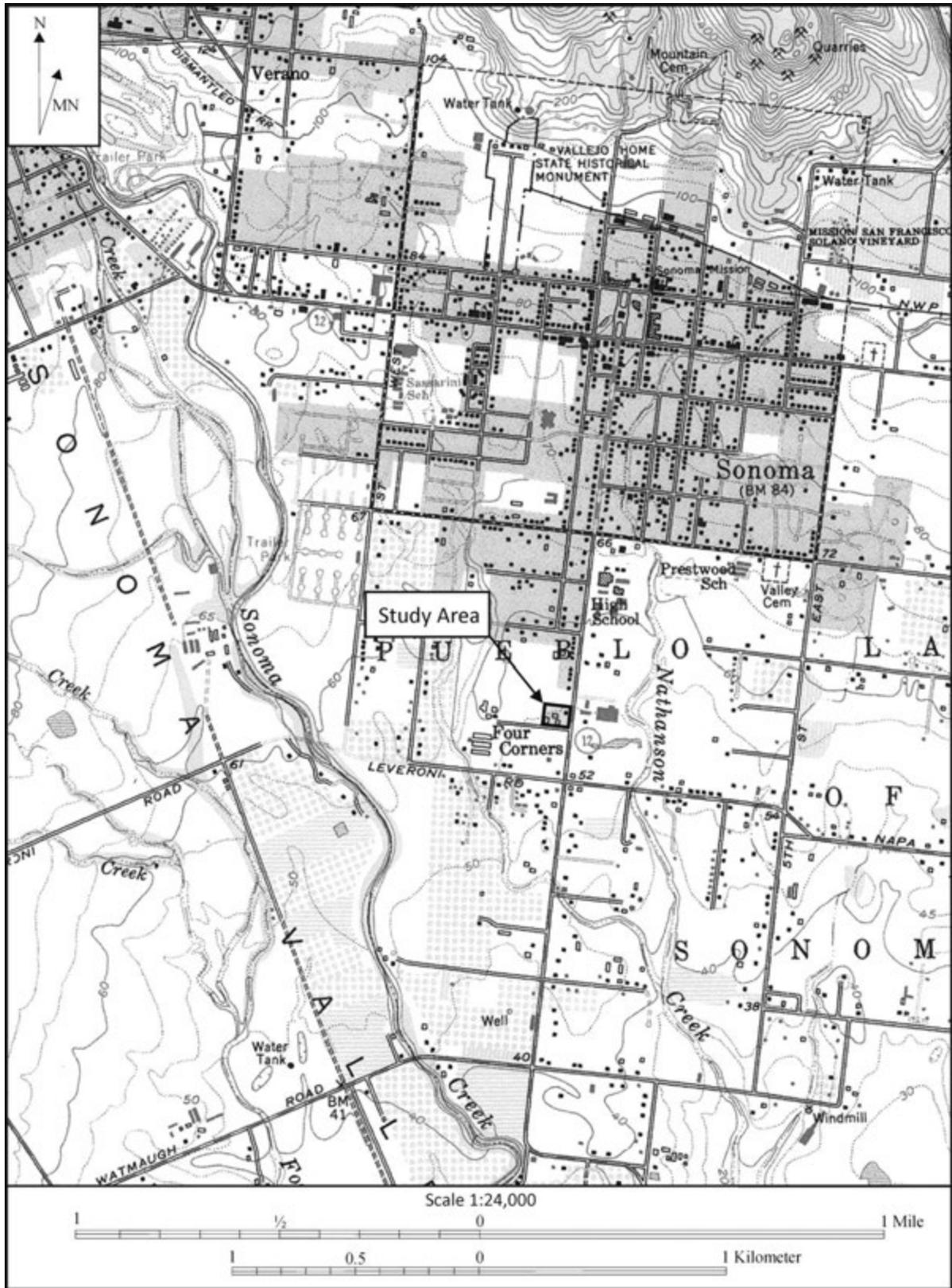


Figure 2. Study area location (adapted from the 1980 USGS Sonoma 7.5' USGS topographic map).

At the time of European settlement, the study area was included in the territory controlled by the Coast Miwok (Barrett 1908; Kelly 1978). The Pomo were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year and other sites were visited to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near sources of fresh water and in ecotones where plant life and animal life were diverse and abundant.

Historically, the study area is situated on lands once claimed by the Mission San Francisco Solano de Sonoma (hereafter, the Sonoma Mission) (GLO 1880). The Sonoma Mission was the last of 21 missions established in California by Franciscan missionaries between 1769 and 1823. In 1833, the Mexican government began secularizing California mission lands. After futile starts in the Petaluma and Santa Rosa areas, Governor José Figueroa commissioned General Mariano Vallejo, former *Commandante* of the San Francisco Presidio and *Comissionado* of the Mission San Francisco de Solano, to establish a presidio and pueblo at Sonoma. About 6,064 acres of mission lands were set aside for the pueblo in 1834, excluding a two-acre parcel containing the mission buildings and the 12-acre mission vineyard. The mission is located over a mile north of the study area.

STUDY PROCEDURES

Native American Contact

A request was sent to the State of California's Native American Heritage Commission seeking information from the sacred lands files and the names of Native American individuals and groups that would be appropriate to contact regarding this project. Letters were also sent to the following groups:

Dry Creek Rancheria Band of Pomo Indians
Federated Indians of Graton Rancheria
Kashia Band of Pomo Indians of the Stewarts Point
Lytton Rancheria of California
Middletown Rancheria of Pomo Indians
Mishewal-Wappo Tribe of Alexander Valley

This contact represents notification regarding the project to provide an opportunity for comment. It does not constitute consultation with tribes.

Archival Study Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. A review (NWIC File No. 16-1395) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2012).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations

could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Maps ranged from hand-drawn maps of the 1800s (e.g., GLO) to topographic maps issued by the United States Geological Survey (USGS) and the United States Army Corps of Engineers (USACE).

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

Field Survey Procedures

An intensive field survey was completed by Eileen Barrow on March 22, 2017. Ground visibility was primarily poor, with vegetation and imported gravel being the primary hindrances.

Based on the results of the prefield research, it was anticipated that prehistoric and historic-period resources could be found within the study area. Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

STUDY FINDINGS

Native American Contact Results

The Native American Heritage Commission replied with a letter dated March 24, 2017, in which they indicated that the sacred land file has no information about the presence of Native American cultural resources in the immediate project area. No other responses have been received as of the date of this report. A log of contact efforts is appended to this report, along with copies of correspondence (see Appendix A).

Archival Study Findings

Archival research found that the study area had not been previously subject to a cultural resources survey. However, the buildings that once stood on the property were evaluated in 2007 (Beard 2007a, 2007b). The buildings were found ineligible for inclusion on the California Register of Historical Resources and subsequently demolished by the City of Sonoma.

One study has been conducted adjacent to the study area (Origer 1984). Seventeen additional studies have been conducted within a quarter mile (Beard 1998, 2000; Bickerton, F. and D. Fredrickson 1979; Chavez 1988; Franco and Origer 2016; French and Fredrickson 1976; Gerike and Fredrickson 1982; Green 2016; Jones and Beard 2001; Lawson and Fredrickson 1979; Massey 2012; Origer 1990; Painter 2015; PAR Environmental Services, Inc. 2008a, 2008b; Praetzellis and Praetzellis 1990; Supernowicz 2007).

Three historical resources have been recorded within a quarter mile of the study area (Beard 2007b). The Ranzani Property (P-49-003815) was a single-family building complex recorded within the study area. As previously mentioned, this resource was found ineligible for inclusion on the California Register of Historical Resources and demolished (Beard 2007a, 2007b; Praetzellis 1990; Tom Origer & Associates 2001). The next closest resource is the remains of another ranch complex consisting of a building foundation, historical debris, and non-native plants (Praetzellis 1990). This resource is far enough away that it would not extend into the study area.

There are no reported ethnographic sites within one mile of the survey area (Barrett 1908).

A review of 19th and 20th century maps suggest buildings could have been within the study area as early as 1933, however county records indicate that the house that once stood on the property was constructed in 1935, and field survey by Vicki Beard in 2007 confirmed this date (Beard 2007a, 2007b; USACE 1933). No buildings are shown in the study area prior to this date (Bell and Heymans 1888; Bowers 1867; GLO 1858; McIntire and Lewis 1908; Peugh 1934; Reynolds and Proctor 1898).

Field Survey Findings

Archaeology

A few attempts were made to excavate auger holes, however soils were very gravelly and the auger holes were terminated at approximately 30 centimeters. Just north of the northern boundary of the study area a small ditch allowed for viewing soils to a depth of approximately 30 centimeters. A trench was being excavated by PG&E on the east side of the property. Although a close examination of this trench was not permitted, no midden soils were observed. It appeared this trench had been excavated to a depth of at least 100 centimeters.

No archaeological site indicators were found during this survey.

Built Environment

No buildings or structures were present on the parcel. The only remains of past use of the property were several walnut trees, a grape vine, and a fig tree.

RECOMMENDATIONS

Known Resources

Archaeology

No archaeological remains were observed during our survey; therefore, no resource specific recommendations are required.

Built Environment

No buildings or structures were present within the study area. The non-native trees and grapevine were associated with past use of the property, however because the building was found ineligible for inclusion on the California Register of Historical Resources and this vegetation would have been associated with those buildings, they do not appear to be eligible for inclusion either.

No historical resources were observed; therefore, no resource specific recommendations are required.

Accidental Discovery

Determining the potential for buried deposits factors includes landform age, distance to water, slope of the study area, and archaeological data (Meyer *et al.* 2016). The study area was essentially level but is only moderately close to water. The geology of the study area is made up of late Pleistocene and Holocene fan deposits. These geologic deposits date from about 30,000 years ago to the present. Buried prehistoric archaeological sites are found in or beneath Holocene-age depositional landforms (Meyer and Rosenthal 2007). Based on the study area's geologic age, our analysis of the environmental setting, and incorporating King's (2004) analysis of soil sensitivity for buried sites, the probability of identifying a site within the study area is 3-5%. However, observations of soils within a trench excavated adjacent to the study area, and within the sidewalls of a small ditch just north of the study area did not reveal the presence of any buried archaeological site indicators or soils.

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

SUMMARY

Tom Origer & Associates completed an historical resources study of the property at 20269 Broadway, Sonoma, Sonoma County, California. The study was requested and authorized by David Goodison of the City of Sonoma. This study was conducted to meet the requirements of the City of Sonoma and those of the California Environmental Quality Act. No historical resources were found within the study area and therefore no resource-specific recommendations are warranted. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2017-028S).

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Appendix A

Native American Contact

Copies of Correspondence

Native American Contact Efforts
20269 Broadway, Sonoma, Sonoma County

Organization	Contact	Action	Results
Native American Heritage Commission		Letter 3/17/17	The Native American Heritage Commission replied with a letter dated March 24, 2017, in which they indicated that the sacred land file has no information about the presence of Native American cultural resources in the immediate project area.
Dry Creek Rancheria Band of Pomo Indians	Chris Wright	3/24/17	No response received as of the date of this report.
Federated Indians of Graton Rancheria	Gene Buvelot Buffy McQuillen Peter Nelson Greg Sarris	Letter 3/24/17	No response received as of the date of this report.
Kashia Band of Pomo Indians of the Stewarts Point	Reno Franklin	Letter 3/24/17	No response received as of the date of this report.
Lytton Band of Pomo Indians	Marjorie Mejia	Letter 3/24/17	No response received as of the date of this report.
Middletown Rancheria of Pomo Indians	Jose Simon, III	Letter 3/24/17	No response received as of the date of this report.
Mishewal-Wappo Tribe of Alexander Valley	Scott Gabaldon	Letter 3/24/17	No response received as of the date of this report.

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 20269 Broadway
County: Sonoma

USGS Quadrangles

Name: Sonoma

Township T5N Range R5W Section(s) N/A MDBM (within the Pueblo Lands of Sonoma)

Date: March 17, 2017

Company/Firm/Agency: Tom Origer & Associates

Contact Person: Eileen Barrow

Address: P.O. Box 1531

City: Rohnert Park Zip: 94927

Phone: (707) 584-8200 Fax: (707) 584-8300

Email: eileen@origer.com

Project Description: We are conducting a survey of 1.53 acres at 20269 Broadway, Sonoma, Sonoma County, California.

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471



March 24, 2017

Eileen Barrow
Tom Origer & Associates

Sent by Email: Eileen@origer.com
Number of Pages: 2

RE: 20269 Broadway, Sonoma, Sonoma County

Dear Ms. Barrow:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult.** If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.souza@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sharaya Souza".

Sharaya Souza
Staff Services Analyst

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Chris Wright
Dry Creek Rancheria Band of Pomo Indians
P.O. Box 607
Geyserville, CA 95441

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Wright:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Buvelot:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Buffy McQuillen
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Ms. McQuillen:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Peter Nelson
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Nelson:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Greg Sarris
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Sarris:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Reno Franklin
Kashia Band of Pomo Indians of the Stewarts Point
1420 Guerneville Road, Suite 1
Santa Rosa, CA 95403

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Franklin:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Marjorie Mejia
Lytton Band of Pomo Indians
437 Aviation Blvd
Santa Rosa, CA 95403

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Ms. Mejia:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Jose Simon, III
Middletown Rancheria of Pomo Indians
P.O. Box 1035
Middletown, CA 95461

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Simon:

I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate

Tom Origer & Associates

Archaeology / Historical Research

March 24, 2017

Scott Gabaldon
Mishewal-Wappo Tribe of Alexander Valley
2275 Silk Road
Windsor, CA 95492

RE: 20269 Broadway, Sonoma, Sonoma County, California

Dear Mr. Gabaldon:

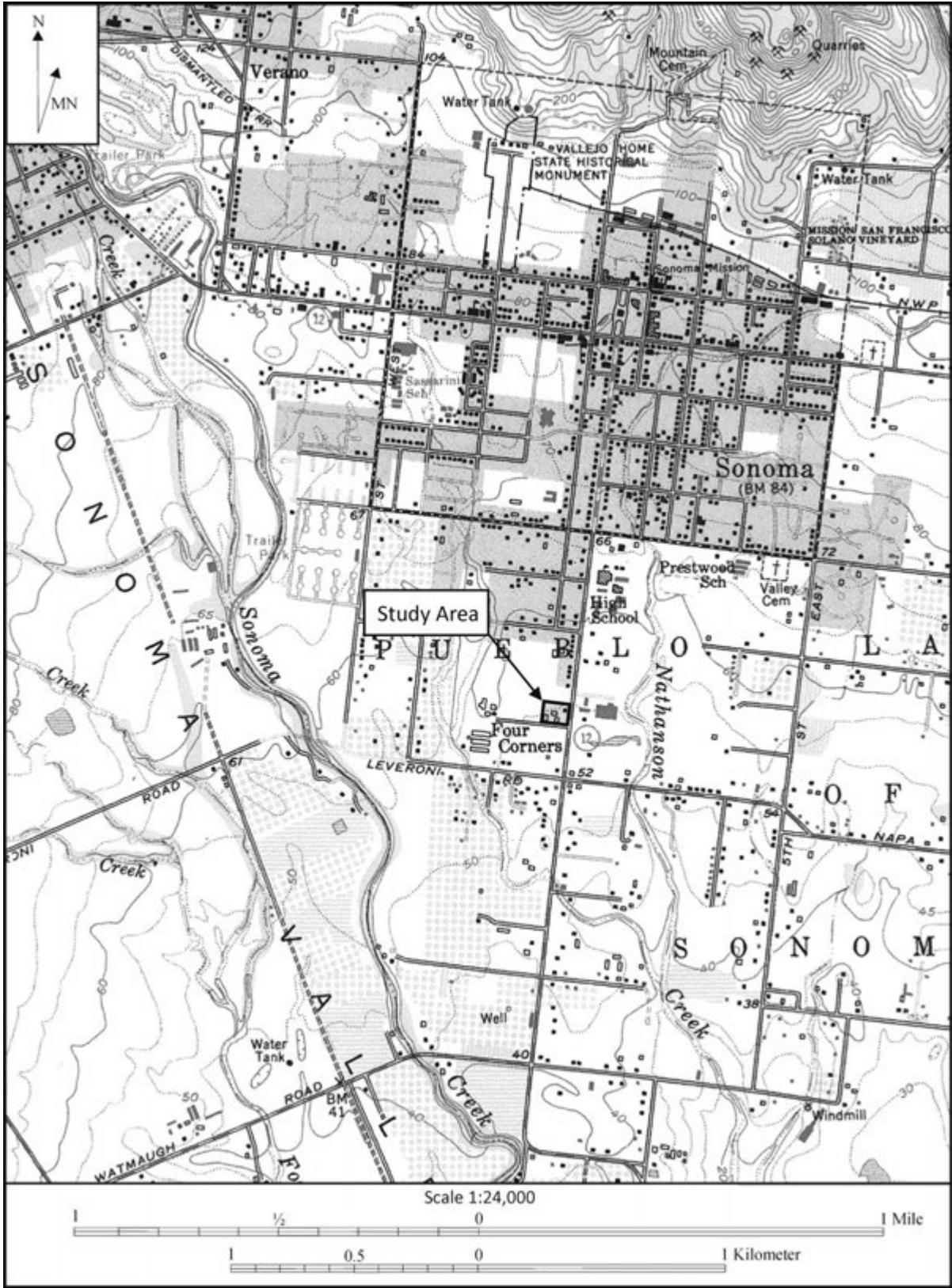
I write to notify you of a proposed project within Sonoma County, for which our firm is conducting a cultural resources study. Our firm is surveying a 1.53 acre parcel just south of the City of Sonoma. The City of Sonoma is reviewing the project for CEQA compliance.

Enclosed is a portion of the Sonoma, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Eileen Barrow
Senior Associate





Sherby Sanborn Consulting Arborist

ISA Certified Arborist Number WE-0258A

ISA Qualified Tree Risk Assessor

P.O. Box 447, Glen Ellen, CA 95442-0447 Phone/Fax 707.935.0892 ssanborn@sonic.net

<http://www.sherbysanborn-arborist.com>

June 2, 2017

David Goodison
Planning Director
City of Sonoma
1 The Plaza
Sonoma, CA 95476-6690

Summary

Introduction

The Altamira Housing Project is located on an approximately 2-acre lot at 20269 Broadway, Sonoma. The project site has 53 trees including those growing on the front utility easement. The “Tree Preservation and Removal Plan” prepared by the developer indicates 4 oaks will be preserved with 49 trees being removed.

© This report and associated specifications, dated June 2, 2017, are for the exclusive use of my clients and their representatives, and may not be reproduced by outside parties in whole or in part for any other purpose without the written permission of Sherby Sanborn, Consulting Arborist.

Scope of Work

All trees on the site will be identified and numbered on a map, with their trunk diameter and crown radius recorded along with a observations of their health and structure. This tree evaluation will include a cursory evaluation of the general health and structure of each tree growing within or near the limits of the proposed new subdivision. This evaluation is based upon VTA, Visual Tree Assessment (Mattheck 2007). The evaluation will describe the status of the trees and an assessment of construction impacts of the proposed project on each tree. Recommendations for the disposition of each tree and protection measures for protected trees will be included, as well as, recommendations for further tree condition diagnostic procedures or other appropriate arboricultural procedures.

Limitation of Observations

One aspect of any tree evaluation involves identifying trees that are a “HAZARD.” To be a hazard, a tree must have a “DEFECT” that could cause all or part of it to fail and a “TARGET.” Most trees have defects but not all defects are significant enough to cause a structural failure. Targets include people, houses, cars and facilities that attract people (like a picnic table) or any object of value. Evaluating the risk posed by any specific defect, as well as, the individual’s tolerance of risk play an important role in determining possible treatments. Many hazards can be mitigated without the need to remove the tree.

Construction impacts such as soil compaction, root cutting, mechanical damage and improper pruning, to name just a few human activities, can affect tree health and safety. Therefore, my evaluations are based on the condition of these trees on My 24 and 27, 2017. I cannot be held responsible for activities or impacts that occur after the above date. As an arborist, I make recommendations based upon on-site observation and information regarding the trees and the sit provided to me by the client. Such information, if inaccurate or incomplete, will affect the accuracy of these recommendations. In addition,

property boundaries should be verified by client before treatments are applied. Failure to do so can lead to trespass and legal damages.

Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to structural failure of a tree or anticipate extreme weather events that could contribute to failure. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the Arborists services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Terms and Definition

Tree Rating: Trees are rated based their health and structure. There are four rating categories: very-good, good, fair, and poor. Trees rated in *good* to *very-good condition* are in good health and structurally sound with only a few minor correctable defects. Trees in *fair condition* have defect, disease, or health conditions which can indicate a higher risk of failure reducing their landscape value. For trees in *fair condition* it may be possible to improve their rating to good by reducing defects, treating insect or disease problems, and by improving growing conditions. Trees in *poor condition* show poor vigor, possess significant diseases and/or structural defects and may represent a high risk of failure. Defects in such trees are usually not correctable. Trees in *poor condition* have a very low landscape value.

Acute angles of attachment: Also known as a “V-crotch” describes a narrow angle of attachment between a branch and its parent (branch of origin), the trunk, or codominant stems (see below). The branch bark ridge is usually not visible in branches with acute angles and often result in imbedded bark (see below). For examples refer to Appendix C figures 8 and 9.

Branch Structure: This refers to the distribution of branches along the trunk and scaffold branches i.e. are branches evenly distributed within the upper two-thirds of the tree. In addition, are branches well spaced and free of interference or conflicts (crossing or lay upon one another)?

Codominant: Either stems (trunks) or scaffold branches of equal size and relative importance, usually arising from a parent branch or trunk at the same level.

Crown: The leaves and branches of a tree measured from the lowest branch on the trunk to the top of the tree.

Crown Radius: is the maximum crown radius (the distance from the trunk center to the outer edge of the longest branch). Tree crowns are usually not symmetrical. In addition, the crown may not be centered over the tree’s root collar (the area at the base of the tree where the trunk and roots merge).

Defects: Cracks, splits, imbedded bark, cavities, dead or exfoliating bark, decay, insects, or disease.

Health: Represents how well the tree is growing and its general vigor. These somewhat subjective factors include crown density, branch distribution, number of dead branches, leaf color, number of leaves, the existence of viable buds, and last season's growth.

Imbedded Bark: Bark that has developed between the union of two trunks, branches, or the trunk and a branch. Imbedded bark weakens the union increasing the likelihood that the union will fail and either the trunk or branch will tear out. Refer to Appendix C, figure 9 for an example.

Repair Structures: Generally, these include bulges, swellings, and other abnormalities where the tree has responded to cracks, splits, injuries, and decay by adding wood to strengthen the affected area.

Root Collar: The area at the base of the tree where the trunk and roots merge.

Scaffold Branches: The large branches that form the main structure of the crown. These branches arise from the trunk or trunks and they are the parent branches for the smaller branches in the crown.

Structure: This is the evaluation of overall branch distribution, size ratio of branches to their parent branch or the trunk, acute angles of attachment, imbedded bark, trunk and root collar damage, trunk lean, bulges, cracks, and other factors.

Tree Protection Zone: The area encompassed by the outer edge of the crown or dripline. For trees with an irregular crown, this zone should be determined by using crown radius forming a circle when measured from the center of the trunk. The tree protection zone is usually the minimum area to be excluded from construction activities. Depending on the species tolerance to root disturbance, this area can be larger or smaller.

Trunk diameter: is measured at 4.5 feet above median soil grade also known as DBH (diameter breast height). Trees that have more than one trunk or stems joined at or just above ground level are defined as multi-trunk. Each of the trunks of multitrunk trees is measured at DBH. Trees with branches arising at or below 4.5 feet are measured at the narrowest point between the lowest branch and the ground.

Observations

I found a total of 53 trees growing on the site including the utility easement along the east boundary that parallels Broadway. There is a total of 7 oak trees including 2 Coast Live Oak Trees, *Quercus agrifolia* and 5 Valley Oaks Trees, *Quercus lobata*. Three of the oaks are very small and growing under other trees/shrubs on the site. Four Valley Oaks are larger stature trees designated by the developer for retention, however, my observations suggest that two of these are in poor condition and should not be preserved. Twelve fruit trees are present on the site including plum, apple, persimmon, and fig. The fruit trees are generally in poor condition and or within the building envelope and must be removed. The remaining trees are either Black Walnut, *Juglans nigra* or English Walnut, *Juglans regia*. Several of these trees are dead and with a few exceptions are in poor condition. The walnuts on this property were planted primarily for nut production. In a developed urban setting walnut produce a lot of litter including nuts and leaves and black walnut litter can, in particular, stain concrete, decks and other infrastructure. The nuts themselves can become a hazard if not harvested although they can also provide food for wildlife. A table listing all the trees on the site and other relevant data can be found at the end of this document.

Adjacent Trees

There are two trees of significance adjacent to this development. The first is a Coast Live Oak at the northeast corner of the property (see map page 5). The property boundaries are a little vague, however the tree appears to be growing in the utility easement. It should be provided protection measures 1-5 of Appendix A.

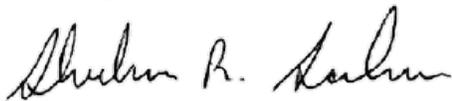
The other tree is a Corkscrew Willow growing next to the fence on a property adjacent to the west development boundary (see map page 5). No protection measures are required because there is a retaining wall and fence between the properties which should provide protection for the trees root system.

Discussion and Conclusions

As I stated previously, many of the walnut trees are in poor condition. There are also some that are in good condition, particularly those along the west property boundary. David Goodison (personal communication) indicated that property owners adjacent to those trees have concerns regarding their preservation with a strong preference toward their removal. Additionally, the root systems of walnut trees are more sensitive to construction impacts and often don't survive.

Based on the City of Sonoma's tree ordinance I've calculated the number of 15-gallon replacement trees. The Tree Committee has the final say so these totals are only a suggestion. Many of the trees on the site are either dead or in poor condition. Typically, dead trees aren't included in the replacement total and I've taken the liberty of calculating fewer trees for those in the worst condition. The total number of 15 gallon replacement trees I've proposed is 65. This may need to be adjusted if oaks # 15 and 28 are also removed. If larger size nursery stock such as 24, 36 or 48 inch box trees are installed as replacements, they can be credited as 2, 3, and 4, 15-gallon trees provided the tree committee agrees with that ratio.

Sincerely,

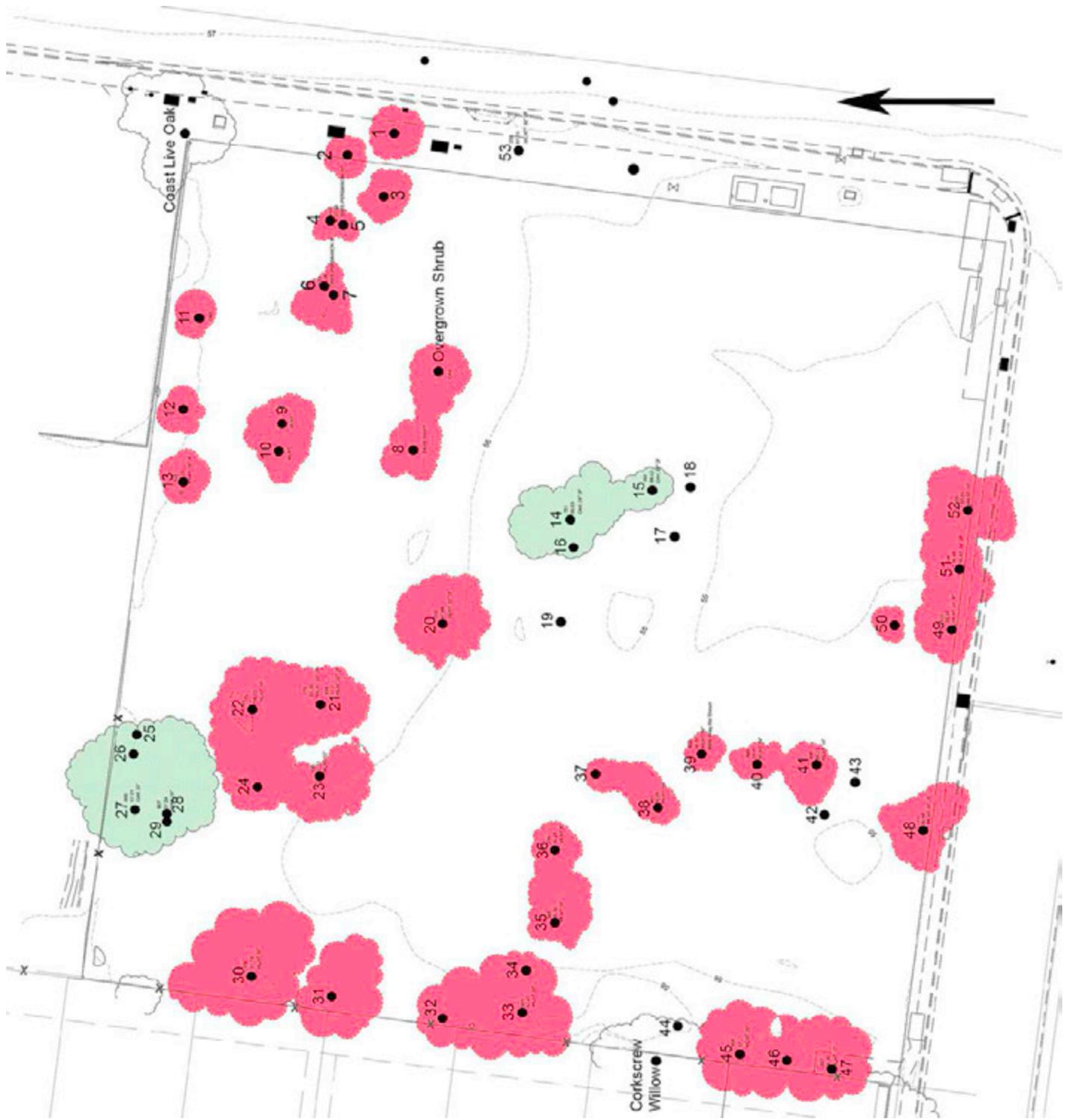


Sherburn R. Sanborn
ISA Certified Arborist WE-0258A
Member the American Society of Consulting Arborists

SRS: ss

References:

Mattheck, Claus, 2007. *Updated Field Guide for Visual Tree Assessment*. Forshungszentrum Karlsruhe GmbH. 170 pages.



Tree Location Map

Appendix A

Tree Protection Measures

1 - Protective Fencing:

All trees to be preserved should be protected by fencing the area under the dripline. Ideally the fence should be secured so that it can't be moved.

Fences should be erected before any, grading or construction begin and remain in place until the final project inspection.

No construction equipment or materials should be stored within the root protection zone. In addition, no dumping of toxic materials shall take place either within or near the tree protection zone. This includes gasoline, other petroleum products, broken drywall, and concrete spoils to name just a few materials potentially toxic to trees and tree roots.

A prominently displayed warning sign can alert workers to the sensitivity of the fenced tree protection zone. The sign should clearly state: "WARNING – *Tree Protection Zone* – This fence shall not be removed contact project arborist for additional information."

2 - Protective Mulch:

Applying mulch within the tree protection zone can greatly benefit protected trees. Always use composted coarse wood chip mulch that will not compact. Raw wood chips direct from a chipper, composted chips or Arbor Mulch are all beneficial for trees. Keep mulch away from root collar—large trees require 1 foot of clearance. Mulch should be no more than 2-3 inches deep. Protective mulch used to reduce soil compaction from vehicle traffic should be 6-8 inches deep. Mulch this deep should be temporary and must be removed to a final depth of 2-3 inches when construction is completed. It may also be necessary to reduce mulch depth during the winter months to prevent souring (mold build up).

3 - Irrigation:

All trees, including native oaks can benefit from irrigation prior to and during construction, particularly during our hot summer months. Irrigate the outer two thirds of the crown radius using soaker hoses or a drip irrigation system. For native oaks, it is critically important that irrigation be kept away from the trunk and root collar. When irrigating large oaks, keep water at least eight feet from the trees root collar and trunk. Never allow water to splash on the trunk and root collar. Irrigate to a depth of six inches and allow soil to dry completely before the next irrigation. It may take many hours to moisten the soil to a depth of six inches. The easiest way to test the penetration depth is to dig several small holes within the irrigated area using a garden trowel or similar tool. If the soil isn't moist continue watering. Oaks should be irrigated once every six weeks while other trees can be irrigated more frequently.

4 - Soil Grade Changes:

No soil grade changes should occur within the tree protection zone. Grade changes should be minimized immediately outside the tree protection zone and should not direct water into root collar area of trees.

5 - Trenching and Root Pruning:

Trenches should be dug using an air-spade or by hand—no power tools or mechanical trenching devices. The air-spade uses compressed air to remove soil around roots without damaging them. Digging should be done in a manner that avoids damaging roots larger than 1 inch. All roots should be cut at right angles and when possible, preferably back to a lateral. Any roots cut during trenching operations should be cleanly cut, at right angles, to sound wood using either pruning shears, loppers, pruning saws or

chainsaw. **Why not mechanical trenching?** Most mechanized trenching devices, such as a ditch-witch, don't cut roots cleanly. The root is grabbed, pulled, and torn leaving a ragged, broken surface. Because roots are elastic, when grabbed by a trencher the root stretches before it breaks then snaps back. This action can cause splits and other types of damage to occur between the break and the tree trunk. Such injuries cause roots to die back and provide avenues for soil borne fungi to attack them.

6 - Landscaping Under Native Oaks:

To insure the longevity of native oaks, landscaping underneath their crown should be kept as natural as possible. Irrigation systems should only be installed outside the dripline (the width of the crown, as measured by the lateral extent of the foliage). For more information regarding landscaping under native oaks, see the publication: *Compatible Plants Under and Around Oaks*, California Oak Foundation, <http://www.californiaoaks.org/>

Appendix B

Understanding Tree Roots

Where and how deeply roots grow depends on the soil conditions of the site. In fertile, well aerated soil with little competition from other trees, roots will extend in a more or less symmetrical pattern. The roots of a tree can grow laterally through the soil up to two or even three times the radius of the trees crown (figure 11). In addition, approximately 80% of a tree's roots develop within the first twelve to eighteen inches of soil with few roots growing beyond a depth of three feet. The most important limiting factor affecting root development is soil density and oxygen availability. Sonoma County soils have high clay content so they are denser with lower oxygen levels. This forces roots to grow closer to the surface. Water in the form of rain or irrigation, has a significant affect on soil oxygen levels. As water penetrates the soil it displaces carbon dioxide pushing it out of the soil while at the same time drawing oxygen in. Other than natural rainfall, native oaks do not need to be irrigated. Exceptions to this rule include active construction sites and periods of severe drought. Prior to and during construction, stress to protected trees may be reduced by periodic irrigation particularly during the summer months of July, August, and September. During periods of drought, it may be appropriate to supplement natural rainfall by irrigating oaks during the spring and early fall. Irrigation should be deep and infrequent and it should be kept 10 feet away from the trunk and root collar, particularly when sprinkler systems are used.

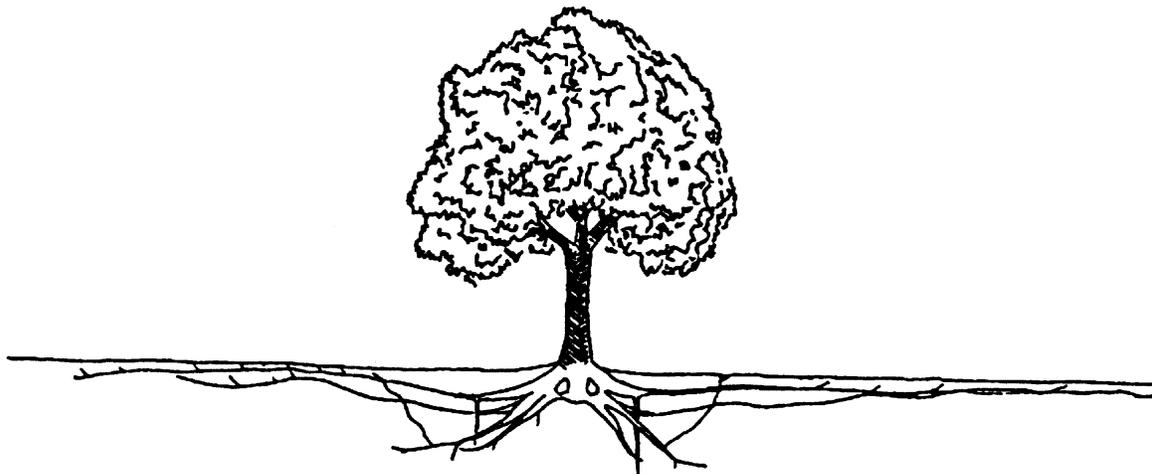


Figure 11

Appendix C

Tree Pruning Guidelines

Tree pruning should meet or exceed the pruning standards found in ANSI A300 and the current ISA *Tree-Pruning Guidelines*, 1995.

Basic Pruning Techniques

Making a proper pruning cut affects tree health because it affects how the tree responds to the wound created by the cut.

Trees grow by adding a layer of woody tissue around the existing tree each year. In the spring when tree growth begins, new wood is added to the outer branches first. Where these branches attach to a parent branch or the trunk, the new wood is diverted laterally around the parent branch, surrounding it. This wood tissue then merges underneath and connects to the wood of the trunk or parent branch. Next, a layer of wood is added to the trunk or parent branch and where this wood encounters the new branch wood, it diverts around the branch and envelops the branch wood. The swelling that results from the

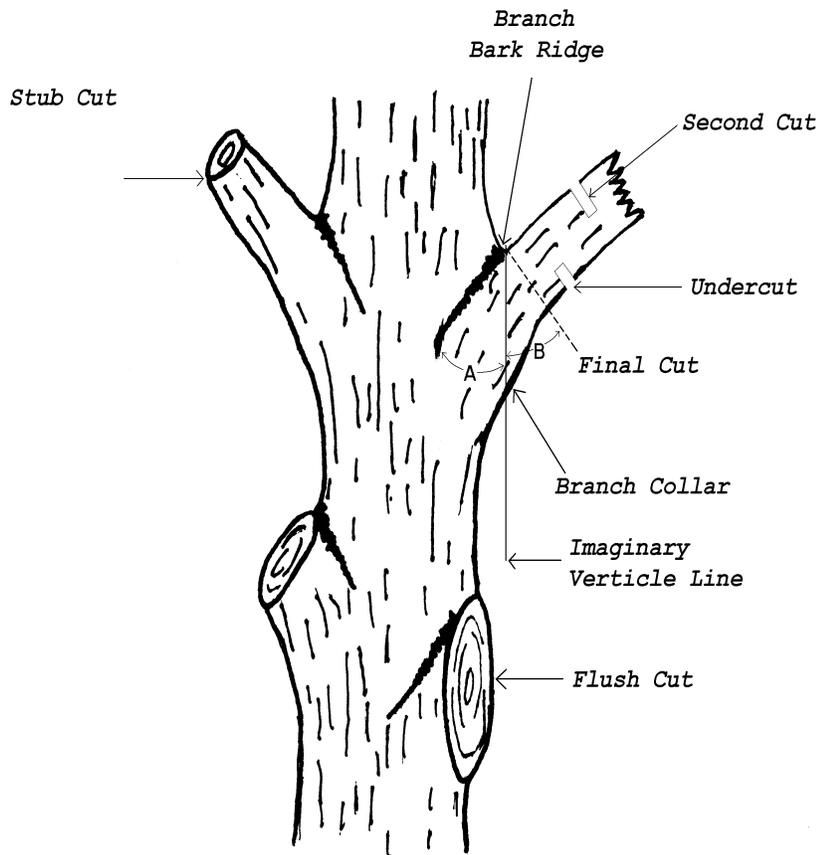


Figure 6

overlapping of wood at the branch union with the trunk or parent branch is called the '**branch collar.**' The raised strip of bark in the branch crotch is called the '**branch bark ridge**' (figure 6). Preserving the branch collar significantly affects wound closure and prevents decay from entering the parent branch or trunk.

There are three types of pruning cuts: thinning, heading and drop-crotch. Of the three the thinning cut is preferred because it preserves the branch collar so that the tissue of the trunk or parent branch is not injured or wounded. Pruning cuts that remove only branch wood, with the cut placed just outside the branch collar, are called '**natural target pruning.**' Trees respond to wounding by forming protective barriers that isolate the injured, diseased, or decayed wood. A pruning cut that preserves the branch collar limits the invasion of diseases or decay to the branch wood that remains after the branch is cut. An improper cut that removes the branch collar, often called a '**flush cut,**' (figure 6) can allow disease and decay to invade and weaken the wood of the trunk or parent branch. Flush cuts can lead to decay that over time may result in tree or branch failure.

Making a thinning cut is a four step process (refer to figure 6):

1. Identify or estimate the location of the branch collar. Branch collars can be inconspicuous, sunken, slightly protruding, or bulging.
2. Undercut the branch to be removed approximately two to six inches from branch collar. This undercut will prevent the bark under the branch from peeling or tearing away from the trunk or parent branch.
3. The second cut should go completely through the branch several inches outside the undercut. This will leave a stub.
4. Finally, remove the remaining branch stub at a point just outside the branch collar. If the branch collar is not obvious, draw an imaginary line parallel with the trunk or parent branch starting at the top, outer edge of the branch bark ridge. Now approximate angle **A** between the imaginary line and the branch bark ridge and make your pruning cut so angle **B** is the same as angle **A** (Figure 6).

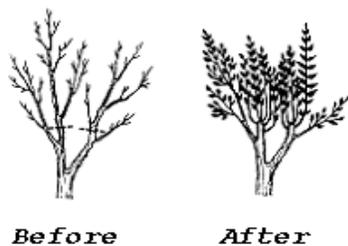


Figure 7

Heading cuts are made between branches or in the case of younger trees between nodes (Figure 7). When heading cuts are applied to large or mature trees it is called '**topping.**' Heading or topping a mature tree is often done to reduce its crown height and width. Some trees can be killed because topping can remove too much foliage. Topping allows decay to develop in branches and trunks, destroys the trees natural shape, and results in sprouting that produces many weakly attached branches. As the sprouts become larger over time, they frequently break out because of poor attachment while weak tree structure can result in a hazardous tree. In general, shade and ornamental trees should never be topped. Another form of heading is called '**pollarding**' that is sometimes used to create a tree with a round compact crown. Pollarding is most often seen in mulberry and sycamore.

Drop-crotch cuts remove the outer portion of a branch back to a smaller diameter branch 1/3 to 1/2 the diameter of the branch being removed (Figure 8). The size of the remaining branch is important because it must be large enough so it can become the new leader or terminal branch. Drop-crotch cuts are often used on young trees and less frequently on large, mature trees to redirect branch growth. Utility line clearing crews often use this method to redirect branch growth away from power lines. The correct location for the cut is through an imaginary line that bisects the angle formed by points A, B, and C

(figure 8). Line A to B is perpendicular to the branch to be removed while line A to C is formed by a line running through the branch bark ridge.

Before pruning a tree you have to decide where and how much foliage to remove. Remember, removing too much foliage can injure or kill a tree because leaves manufacture food by converting sunlight and carbon dioxide (CO₂) into sugars and Oxygen (O₂). Also remember, you can't feed a tree. Fertilizer is not food; it only provides essential elements like nitrogen, potassium, and phosphorus.

Here are some simple rules to consider before you begin:

- ✓ Never remove more than 25% of a tree's live crown annually. This is particularly true for oaks.
- ✓ It is very important to have foliage or live crown distributed throughout the upper 2/3 of the tree. This also applies to branches i.e. foliage or smaller branches should arise from at least 2/3 of the branch's length. Removing only interior branches, also called *'lion-tailing'*, leaves all the foliage on the ends of the branches. Lion-tailing can actually cause branches to grow more rapidly in an effort to replace lost foliage. It can also cause sunburn and excessive sprouting. All these effects can result in weak or broken branches. ***Crown Cleaning a tree care industry practice, where small branches and epicormic sprouts are removed from large sections of the trunk and scaffold branches, is a technique I do not recommend particularly when applied to native oaks.***
- ✓ Whenever possible avoid removing branches that are larger than four inches in diameter.

Pruning Young Trees

Pruning trees while they're young offers the greatest potential to affect their future size, shape, health, and safety. Because their branches are relatively small, pruning wounds close more rapidly so this is an opportune time to improve branch spacing or remove branches that will become crowded over time. Young trees should also be pruned to promote their shape and structure and to remove lower branches that may interfere with people or property as the tree matures. Immature trees often develop two or more

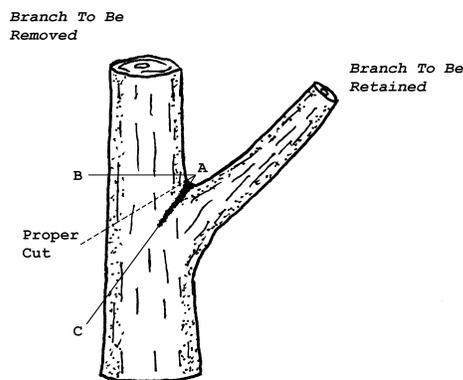


Figure 8

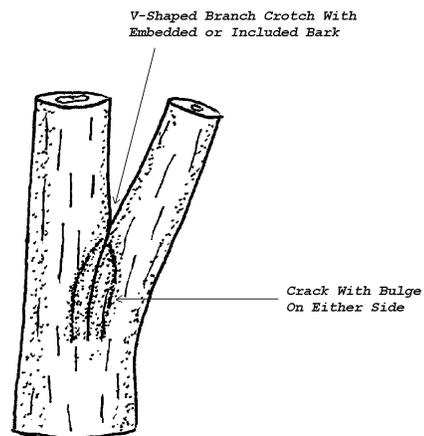


Figure 9

leaders or main stems (trunks). These '**Codominant**' stems sometimes conflict with each other and develop tight or '**V-shaped**' branch crotches with no branch bark ridge (figure 9). If one or more codominant stems exist and are larger than $\frac{1}{2}$ the main trunk diameter, one or more should be removed to reduce crowding and '**embedded bark**' that can lead to branch or trunk breakage when the tree matures (figure 9).

Pruning Mature Trees

The outdated practice of cutting branches flush to the trunk and removing the branch collar destroys the natural protective zone. Flush cuts are more damaging in mature trees because branches are usually larger, so cuts are larger, and '**woundwood**' or '**callus**' tissue forms more slowly. Because of this, thinning and drop-crotch cuts are preferred because these cuts preserve the trees protective zone. Drop-crotch cuts are primarily used to reduce the length of branches while thinning cuts are used to remove dead, dying, diseased, or conflicting branches back to the parent branch or trunk. When possible, avoid removing branches that are larger than 4 to 5 inches in diameter because the wound takes longer to close. Before removing any live branches, first remove all dead branches from the crown. Now look for branches that are rubbing other branches, are less vigorous, and those with poor branch attachment. Pay particular attention to branches with V-shaped crotches or embedded bark (figure 9) because they are much more likely to break out. Ornamental and shade trees are best pruned by the method called 'thinning.' Through this method, branches are selectively removed, using thinning cuts, to preserve or improve the trees natural shape. Thinning also can be used to improve structure, reduce height and spread, reduce the weight of large lateral branches and improve wind resistance. Figure 10 illustrates how thinning preserves a trees natural shape.

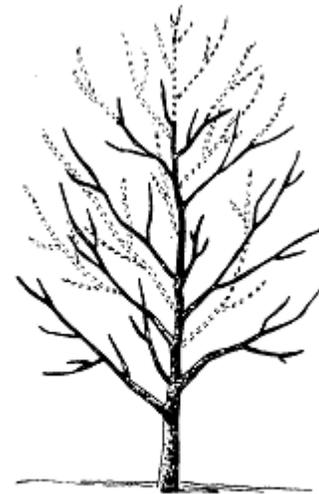


Figure 10

Location: 20269 Broadway, Sonoma

Tree Number	Common Name	Species	Number of Trunks	DBH Inches (trunk diameter)	Crown Radius ft.	Health	Structure	Mitigation Measures	Comments	Suggested Number of 15 Gallon Replacement Trees
1	Coast Live Oak	<i>Quercus agrifolia</i>	1	7.0	8.0	Good	Good	Remove	Crowded by overgrown shrub. Within utility easement.	1
2	Valley Oak	<i>Quercus lobata</i>	1	2.0	2.0	Good	Fair	Remove	Crowded by shrub. Within utility easement.	1
3	Coast Live Oak	<i>Quercus agrifolia</i>	1	8.0	9.0	Very good	Good	Remove	Branch attachment with some bark imbedding. Within utility easement.	1
4	Persimmon	<i>Diospyros sp.</i>	1	11.5	10.5	Good	Fair	Remove	Within building envelope	2
5	Valley Oak	<i>Quercus lobata</i>	1	4.0	7.0	Very good	Good	Remove	Within building envelope	1
6	Persimmon	<i>Diospyros sp.</i>	1	9.0	11.0	Good	Good	Remove	Within building envelope	1
7	Plum	<i>Prunus sp.</i>	1	12.0	15.0	Good	Fair	Remove	Numerous dead branches dead bark.	2
8	Fig	<i>Ficus carica</i>	1	15.0	11.0	Fair	Poor	Remove	2/3 dead	1
9	Flowering Plum	<i>Prunus sp.</i>	3	4, 3, 1	10.0	Fair	Poor	Remove	Mostly dead.	1
10	Plum	<i>Prunus sp.</i>	3	8, 5, 3	11.0	Poor	Poor	Remove	Mostly dead.	0
11	Plum	<i>Prunus sp.</i>	8	24" cluster	8.0	Fair	Poor	Remove	Within building envelope	1
12	Apple	<i>Malus pumila</i>	1	10.0	9.0	Poor	Poor	Remove	Within building envelope	0
13	Plum	<i>Prunus sp.</i>	2	5, 7.5	10.0	Fair	Poor	Remove	Within building envelope	1
14	Valley Oak	<i>Quercus lobata</i>	1	28.0	20.0	Good	Good	Retain	Nice tree with some deadwood. Protection measures 1-6 of Appendix A should be provided. 20 ft. radius TPZ	1

15	Valley Oak	<i>Quercus lobata</i>	2	8.5, 8	14.0	Poor	Fair	Retain?	Crown decline indicative of root loss, leaf anthracnose present. If retained, apply protection measures 1-6 of Appendix A. 16 ft. radius TPZ	0
16	English Walnut	<i>Juglans regia</i>	1	10.0	3.0	Dead	Dead	Remove	With black walnut sprouts.	0
17	English Walnut	<i>Juglans regia</i>	1	14.0	9.0	Dead	Dead	Remove	With black walnut sprouts.	0
18	English Walnut	<i>Juglans regia</i>	1	10.0	6.0	Dead	Dead	Remove	With black walnut sprouts.	0
19	Fig	<i>Ficus carica</i>	1	11.0	9.0	Good	Good	Remove	Main trunk died back with large healthy sprouts. Withing building envelope.	2
20	Black Walnut	<i>Juglans nigra</i>	2	7, 14	16.0	Good	Good	Remove	Within building envelope	3
21	Black Walnut	<i>Juglans nigra</i>	1	28.0	24.0	Good	Fair	Remove	Major part of crown dead.	4
22	Black Walnut	<i>Juglans nigra</i>	1	23.0	22.0	Good	Poor	Remove	Trunk decay, trunk twisted, some crown dieback.	4
23	Black Walnut	<i>Juglans nigra</i>	1	14.0	14.0	Fair	Good	Remove	Crown dieback.	2
24	Black Walnut	<i>Juglans nigra</i>	1	6.0	12.5	Fair	Fair	Remove	Suppressed.	1
25	Plum	<i>Prunus sp.</i>	6	24" cluster	6.0	Fair	Poor	Remove	Suppressed.	2
26	Plum	<i>Prunus sp.</i>	Many	36" cluster	14.0	Fair	Poor	Remove	Under large oak.	3
27	Valley Oak	<i>Quercus lobata</i>	1	21.0	19.0	Good	Fair	Retain	Codominant trunks with imbedded bark. Thin, cable and brace. Apply protection measures 1-6 of Appendix A. 17 ft. radius TPZ.	
28	Valley Oak	<i>Quercus lobata</i>	1	16.0	31.0	Good	Poor	Retain?	"Harp shapped tree" significant 90 degree trunk bend. Crown all on east side. Could prune long branch back to first large branch. If retained provide protection measures 1-6 of Appendix A. 15 ft. radius TPZ.	

29	English Walnut	<i>Juglans regia</i>		Dead	Dead	Remove	With black walnut sprouts.	0
30	Black Walnut	<i>Juglans nigra</i>	1	24.0	24.0 Good	Remove	Severe lean, crown dieback.	2
31	Black Walnut	<i>Juglans nigra</i>	1	14.0	21.0 Good	Remove	Crown dieback.	2
32	Black Walnut	<i>Juglans nigra</i>	2	5, 9.5	18.0 Fair	Remove	Crown dieback.	2
33	Black Walnut	<i>Juglans nigra</i>	1	20.8	28.0 Poor	Remove	Crown dieback.	2
34	Black Walnut	<i>Juglans nigra</i>	1	6.0	11.0 Fair	Remove	Crown dieback.	1
35	Black Walnut	<i>Juglans nigra</i>	1	7.0	13.0 Poor	Remove	Decay, cracks and dead scion.	0
36	English Walnut	<i>Juglans regia</i>	1	9.0	13.0 Poor	Remove	Crown dieback.	0
37	English Walnut	<i>Juglans regia</i>	1	10.0	9.0 Poor	Remove	Crown dieback.	0
38	English Walnut	<i>Juglans regia</i>	1	9.5	11.0 Poor	Remove	Half dead.	0
39	English Walnut	<i>Juglans regia</i>	1		Dead	Remove	With black walnut sprouts.	0
40	English Walnut	<i>Juglans regia</i>	1	15.0	12.0 Poor	Remove	80% dead.	0
41	English Walnut	<i>Juglans regia</i>	1	12.0	14.0 Fair	Remove	Crown dieback.	2
42	English Walnut	<i>Juglans regia</i>			Dead	Remove		0
43	English Walnut	<i>Juglans regia</i>			Dead	Remove		0
44	Black Locust	<i>Robinia pseudoacacia</i>	5	1.5, 1.5, 1.5, 2, 2	8.0 Good	Remove	Suppressed by neighboring willow.	1
45	Black Walnut	<i>Juglans nigra</i>	1	5.0	10.0 Fair	Remove	Leaning and bent.	1
46	Black Walnut	<i>Juglans nigra</i>	1	20.0	19.0 Good	Remove	Some deadwood never pruned, wild architecture.	3

47	Black Walnut	<i>Juglans nigra</i>	2	5, 8	17.0	Fair	Remove	Lopsided crown	2
48	Black Walnut	<i>Juglans nigra</i>	2	14.5, 16	14.0	Good	Remove	Minor deadwood.	5
49	Black Walnut	<i>Juglans nigra</i>	2	9.5, 10.5	19.0	Fair	Remove	Minor deadwood.	3
50	English Walnut	<i>Juglans regia</i>	1	15.0	6.0	Poor	Remove	80% dead.	0
51	Black Walnut	<i>Juglans nigra</i>	2	11.7, 9.5	15.0	Fair	Remove	Crown dieback.	3
52	Black Walnut	<i>Juglans nigra</i>	1	14.5	14.5	Good	Remove	Some deadwood.	2
53	Black Walnut	<i>Juglans nigra</i>	1	32.5	31.0	Poor	Remove	Trunk and branch decay, 75% dead.	0
									65

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August 24, 2017

Mr. David Goodison
City of Sonoma
No. 1 The Plaza
Sonoma, CA 95476

VIA E-MAIL: davidg@sonomacity.org

**SUBJECT: 49 unit Altamira apartment project, 20269 Broadway Sonoma, CA
Environmental Noise Assessment**

Dear David:

This letter report presents the results of Illingworth & Rodkin's (I&R) environmental noise assessment conducted for the 49 unit apartment project proposed at 20269 Broadway in Sonoma, California (see Figure 1). This assessment evaluates;

- 1) The noise and land use compatibility of the proposed residential use of the site with respect to the noise environment resulting from vehicular traffic on Broadway and Clay Street and the adjacent loading dock and service yard of The Lodge at Sonoma (The Lodge) and,
- 2) The noise and land use compatibility of the noise produced by project operations with the noise environment at the existing noise sensitive residential uses adjacent to the site.

This report presents the regulatory criteria used in the assessment, the results of on-site noise monitoring, and our evaluation of the compatibility of the noise environment at the project site in relation to the project site plan. Preliminary noise reduction measures are presented to provide an acceptable interior and exterior noise environment per City of Sonoma Guidelines. Persons not familiar with environmental noise analysis are referred to Appendix A for additional discussion.

REGULATORY BACKGROUND

The City of Sonoma and State of California have established plans and policies designed to limit noise exposure at noise sensitive single residential land uses that are relevant to the proposed project. These plans and policies are contained in (1) the California Building Code, Title 24, Part 2, (2) the City of Sonoma Noise Ordinance, and (3) the City of Sonoma General Plan.

1. 2013 California Building Code, Title 24, Part 2. The current (2013) California Building Code (CBC) does not place limits on interior noise levels attributable to exterior environmental noise sources. The July 1, 2015 Supplement to the 2013 California Building Code (CBC) corrects this omission, reinstating limits on interior noise levels attributable to exterior environmental noise sources which had been contained in all prior versions of the CBC dating back to 1974. In keeping with the provisions of the 2015 supplement, this report considers interior noise levels

attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn} in any habitable room for new dwellings other than detached single-family dwellings.



Figure 1: Aerial Photo with Project Site and Measurement Locations

2. City of Sonoma Noise Ordinance. The City’s Noise Ordinance sets forth the general noise limits presented in Table 1, below, for residential properties within the City. With respect to these levels the Noise Ordinance states that;

1. No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, a noise level greater than the following levels (see Table 1), when measured on any residential property, and
2. For purposes of determining sound levels from any source of sound, a sound level measurement shall be made at any point on any receiving private or public property.”

Table 1: Noise Ordinance Residential Property Noise Limits

Level	Daytime (7 am to 10 pm)	Nighttime (10 pm to 7 am)
Constant Level (Leq), dBA	50	40
Intermittent Level (Lmax), dBA	60	50

3. City of Sonoma General Plan. The Noise Element of the City of Sonoma’s General Plan identifies policies that are intended to guide the development of new projects with regard to

exposure to or generation of noise. These guidelines are used to assess the compatibility of a land use relative to the noise environment where the land use is proposed. The City considers residential land uses “normally acceptable” in noise environments characterized by an L_{dn} of 60 dBA or less, “conditionally acceptable” in noise environments characterized by an L_{dn} 60 to 65 dBA, “normally unacceptable” in noise environments characterized by an L_{dn} 65 to 70 dBA, and “clearly unacceptable” in noise environments characterized by an L_{dn} 70 dBA or more. The maximum allowable interior noise level, attributable to exterior noise sources, is 45 dBA L_{dn} for all residential land uses. Where the exterior or interior noise levels would exceed the normally acceptable level the General Plan Noise Element requires mitigation measures to achieve the normally acceptable noise limits.

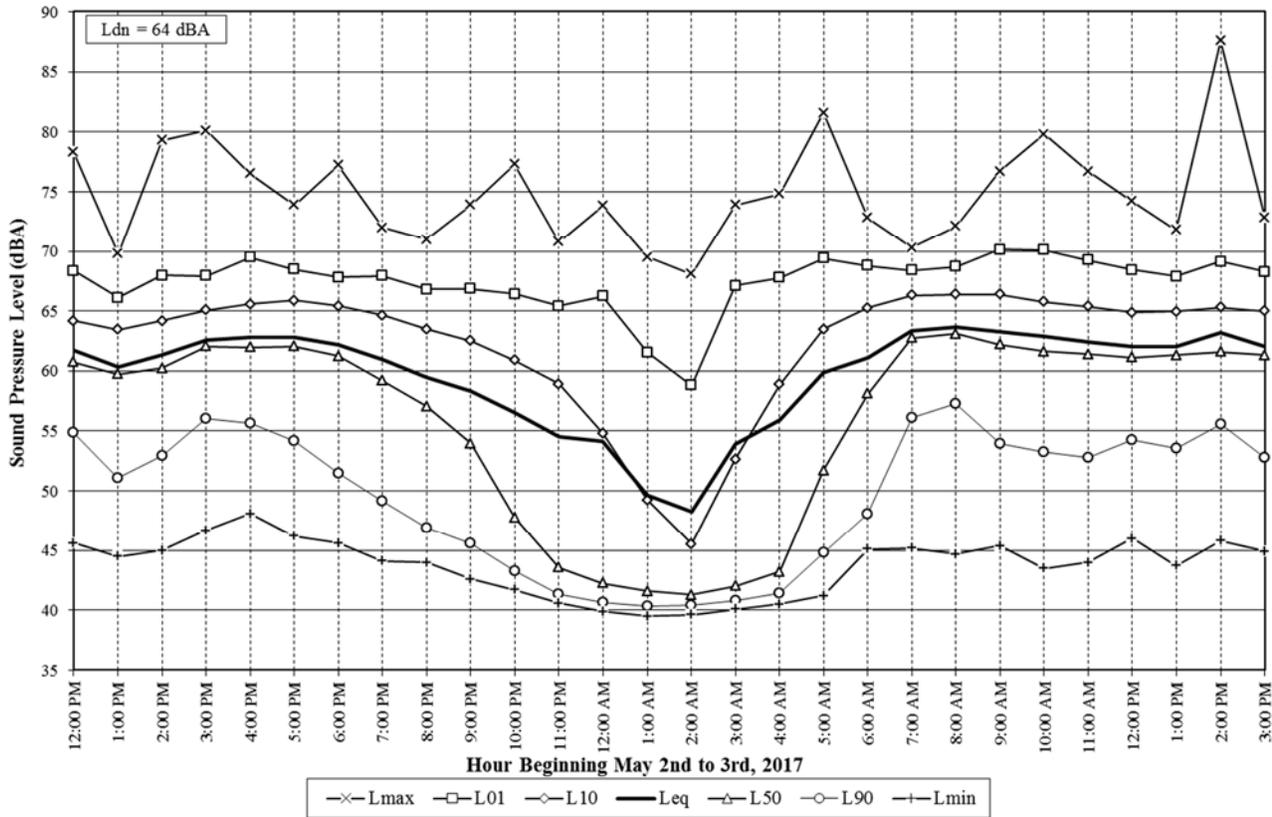
The Noise element further states that the allowable levels are to be raised to the ambient noise levels where ambient levels exceed the allowable levels and that where the ambient L_{eq} is at least 10 dB lower than the allowable level, the allowable levels are to be reduced by 5 dB. To evaluate the intrusiveness of a noise source, the Noise Element of the General Plan also establishes that 15 minute integrated average noise level (L_{eq}) measurements be made at a location where potential impact may be significant, with and without (ambient conditions) the intrusive noise present. The measured L_{eq} with the intrusive noise is then to be corrected to, “account for special noise source characteristics and the prevailing attitude of Sonoma residents toward noise.” If, after adjustments are made, the potentially intrusive noise source would cause exterior noise levels in the immediate or surrounding neighborhood to exceed the ambient level by more than 5 dBA (based on the L_{eq} over a 15-minute period), the standard states that “mitigation measures shall be developed to reduce the projected noise increase to less than 5 dBA above ambient levels”.

EXISTING NOISE ENVIRONMENT

A noise monitoring survey was performed at the site between May 2nd and May 3rd, 2017 to document ambient noise conditions on the project site. The noise monitoring survey included two unattended long-term noise measurements. Noise measurement locations are shown on Figure 1. All noise measurements were conducted with Larson Davis Laboratories (LDL) Type I Model 820 Sound Level Meter fitted with a ½-inch pre-polarized condenser microphone and windscreen. The meters were calibrated with a Larson Davis Model CA250 precision acoustic calibrator prior to and following the measurement survey.

The first long-term noise measurement (LT-1) was made on the northern portion of the site at 95 feet from the centerline of Broadway in a tree at about 10 feet above the existing grade. This measurement position is setback about 20 feet further from Broadway than the easternmost project façade. Therefore, based on traffic the accepted traffic noise attenuation factor of 3 dBA, per doubling of distance, noise levels at the project facades closest to Broadway would be 1 dBA higher than those measured at LT-1. The measured noise levels at site LT-1, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 10, 50 and 90 percent of the time (indicated as L_{10} , L_{50} and L_{90}) are shown on Chart 1. The L_{eq} noise level is typically considered the average noise level, while the L_1 is considered the intrusive level, the L_{50} is considered the median noise level and the L_{90} is considered the background or ambient noise level.

Chart 1: Measured Noise Levels at LT-1



A review of Chart 1 indicates that the noise levels at site LT-1 follow a diurnal pattern characteristic of traffic noise, with the average noise levels ranging from 57 to 64 dBA L_{eq} daytime and 48 to 61 dBA L_{eq} nighttime, with overall average hourly noise levels at 62 dBA L_{eq} daytime and 55 dBA L_{eq} nighttime. Hourly maximum noise levels at LT-1 ranged from 70 to 88 dBA L_{max} daytime and 74 to 82 dBA L_{max} nighttime, with daytime and nighttime recurring maximum L_{max30} ¹ noise levels of 72 dBA. The Day/Night Average Noise Level (L_{dn}) over the 28-hour measurement period at LT-1 was calculated to be 64 dBA. Based on the above discussion of the noise monitoring position, the project facades closest to Broadway would be exposed to an L_{dn} of 65 dBA under current conditions.

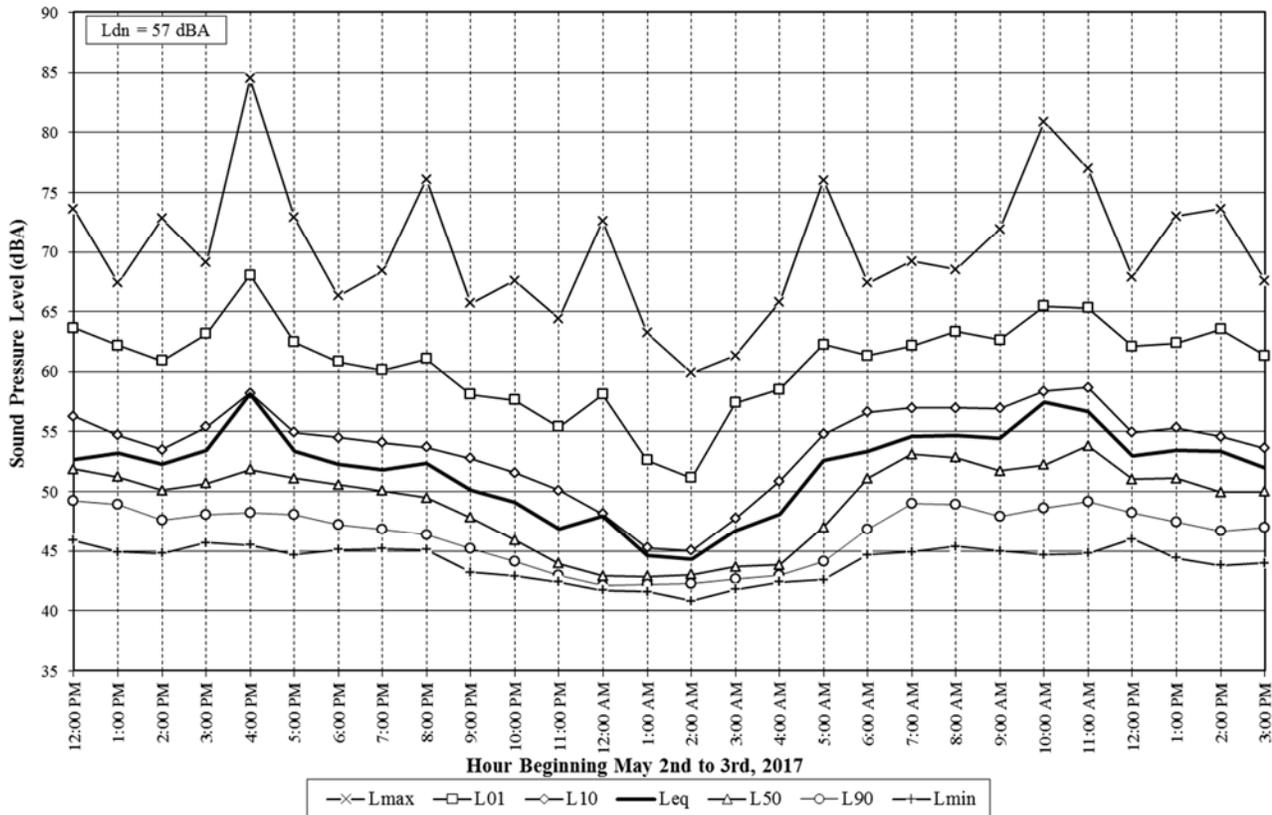
The second long-term noise measurement (LT-2) was made on the western property line of the site at 45 feet from the centerline of Clay Street in a tree at about 10 feet above the existing grade. This measurement position is setback at about the same distance from Clay Street as the southernmost project facades. The measured noise levels at site LT-2, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 10, 50 and 90 percent of the time (indicated as L_{10} , L_{50} and L_{90}) are shown on Chart 2.

A review of Chart 2 indicates that the noise levels at site LT-2 also follow a diurnal pattern characteristic of traffic noise, with the average noise levels ranging from 49 to 58 dBA L_{eq} daytime and 44 to 53 dBA L_{eq} nighttime, with overall average hourly noise levels at 54 dBA L_{eq}

¹ The L_{max30} is obtained by averaging the loudest 30-percent of maximum sound levels obtained by logarithmically averaging the loudest 30-percent of maximum sound levels for 1-hour intervals over the stated time period, and is used to establish a maximum level intrusive level for transportation noise sources.

daytime and 48 dBA L_{eq} nighttime. Hourly maximum noise levels at LT-1 ranged from 66 to 85 dBA L_{max} daytime and 60 to 76 dBA L_{max} nighttime, with daytime and nighttime recurring maximum noise levels (L_{max30}) of 68 dBA and 64 dBA. The Day/Night Average Noise Level (L_{dn}) over the 28-hour measurement period at LT-1 was calculated to be 57 dBA. Based on the above discussion of the noise monitoring position, the project facades closest to Clay Street would be exposed to an L_{dn} of 57 dBA under current conditions.

Chart 2: Measured Noise Levels at LT-2



At location LT-2 sound levels from The Lodge loading dock were 71 to 72 dBA due to truck lifts and door clanging and 68 to 72 dBA due to back up beepers of truck in the dock. In the past operation of building HVAC equipment in the mechanical yard adjacent to the loading dock and on the roof top of The Lodge have caused intrusive noise impacts on the residence at the corner of Bragg and Clay Street. Based on the results of consultations with and noise investigations by I&R, these issues were resolved and the equipment operation was brought into compliance with the City of Sonoma Intrusive Noise Standards in 2008. During our current site surveys, I&R staff observed the mechanical noise at this residence and in the vicinity of site LT-2. Though frequency based noise measurements were not conducted during this observation, no tonal noise from mechanical equipment at The Lodge were observed and daytime ambient noise levels without any loading dock activity or passing traffic on Clay Street were observed to be between 46 and 47 dBA. Therefore, it appears that the operation of mechanical equipment at this facility continues to comply with the City of Sonoma Noise Standards.

COMPATIBILITY OF PROJECT USES WITH ON-SITE NOISE ENVIRONMENT

Future Noise Environment

Based on the results of the noise survey, the major sources affecting the noise environment on the project site were determined to be vehicle traffic Broadway to the east and truck deliveries on Clay Street and other activities associated with the loading dock and service yard of The Lodge on the south side of Clay Street. The General Plan Noise Element contains a projection traffic noise increases are not expected to exceed 2 dBA. With a 2 dBA increase noise levels exterior noise levels would be as high as 67 dBA L_{dn} at residential facades closest to Broadway and 59 dBA L_{dn} at the residential property lines closest to Clay Street under future conditions.

Exterior Noise Review

A review of the project's site plan indicates that two central courtyards will be provided as common outdoor use areas for project residents. A review of the site plan shows that these courtyards will be acoustically shielded by intervening project structure from roadway, loading dock, and service yard noise such that sound levels in these areas are expected to be below 60 dBA L_{dn} . Such exterior noise levels are considered "normally acceptable" by the City of Sonoma General Plan Noise Element.

Interior Noise Review

The City of Sonoma and the State of California require that interior noise levels within new multifamily residential units be maintained at or below 45 dBA L_{dn} . Unshielded façades of the residential units proposed nearest Broadway would be exposed to future noise levels of up to 67 dBA L_{dn} , while those adjacent to Clay Street and furthest from Broadway would be exposed to an L_{dn} of up to 59 dBA.

The proposed exterior siding types are not called out in the current drawings, but based on the project elevations, it appears that the exterior walls may be finished with fiber cement siding. Though the assemblies of the walls have not yet been determined, they are also expected to be wood stud framed walls and based on typical California construction techniques it is assumed that they will also include cavity insulation and a single layer of gypsum board at the interior face. Based on this and that Hardie brand siding, or equal, will be used for the fiber cement siding, the sound isolation rating of the exterior wall assembly would be STC 40 for fiber cement sided walls².

Considering this exterior wall assembly and exterior door and window percentages of between 20% and 40% of the exterior wall area, with closed standard thermal insulating windows and weather sealed doors, the exterior noise levels will be reduced within the residential interiors by between 25 to 27 dBA. When windows or doors are open the noise attenuation from exterior to interior is typically reduced by 10 to 12 dBA, such that for this project we would expect exterior to interior noise reduction to be between 13 to 19 dBA with open windows and/or doors.

Based on this consideration closed standard thermal insulating windows and weather sealed doors will be sufficient to allow interior noise levels to be an L_{dn} of 45 dBA or less. Thus, standard thermal insulating windows and weather sealed doors would be acceptable throughout the project. However, considering the exterior to interior attenuation with open windows, the interior noise standard of 45 dBA L_{dn} of may not be met with open windows in areas where the exterior noise levels exceed an L_{dn} of 58 dBA. In view of our future noise projections, the first

² Based on laboratory test TL365A as published in James Hardie Building Products Sound Isolation Technical Bulletin 07272007

row of homes along Clay Street and homes within 375 feet of the centerline of Broadway with an unobstructed view of passing traffic on this roadway, may be exposed to exterior noise levels exceeding an L_{dn} of 58 dBA.

Therefore, we recommend that the perimeter residences in Buildings 2, 3, 4, 5, 6, and 8 as indicated in Figure 2, be equipped with a mechanical ventilation system capable of providing adequate fresh air to the residence while allowing the windows to remain closed to control noise. In our experience a standard central air conditioning system or a central heating system equipped with a 'summer switch' which allows the fan to circulate air without furnace operation will provide a habitable interior environment.

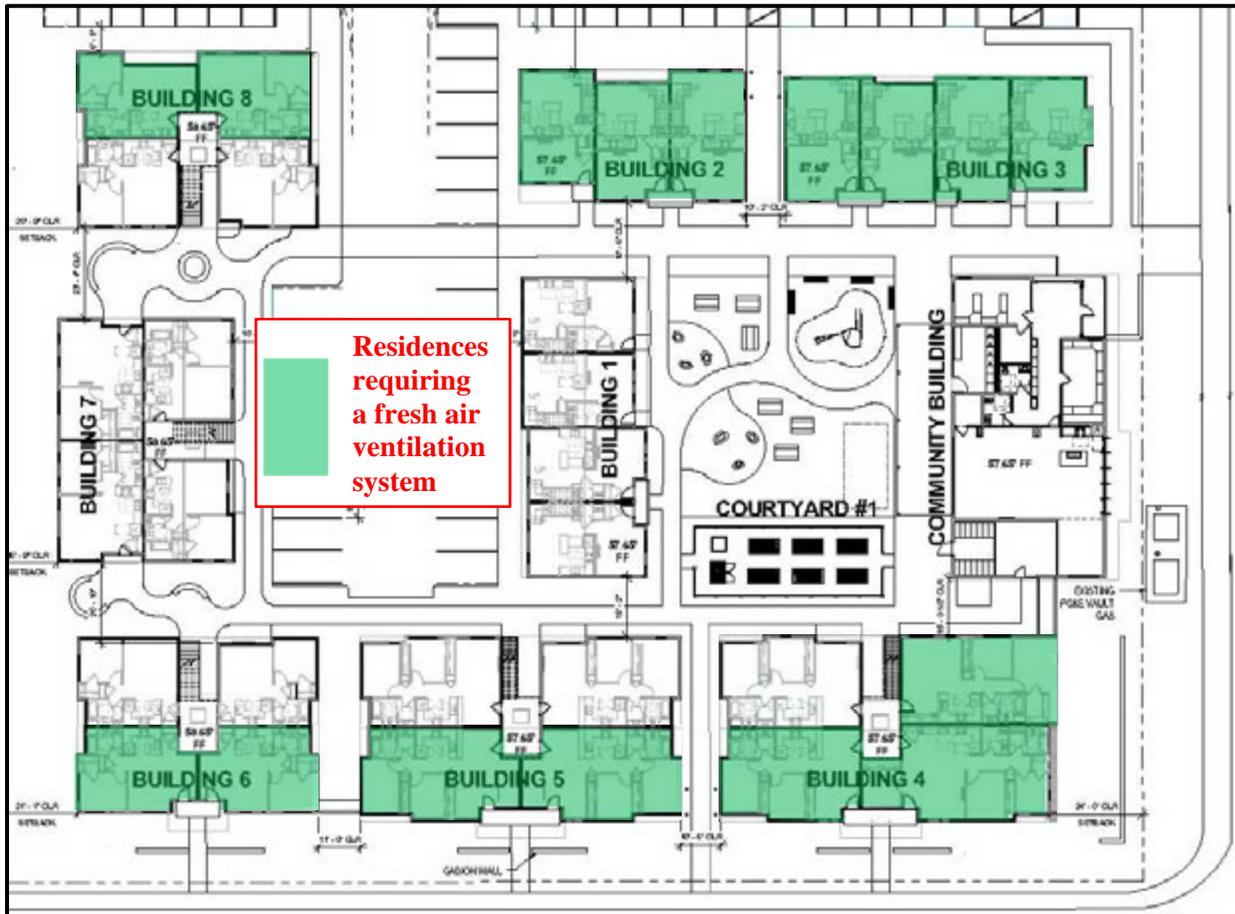


Figure 2: Project Site Plan with Needed Interior Noise Mitigation

COMPATIBILITY OF PROJECT OPERATIONS WITH ADJACENT RESIDENCES

The project site adjoins six single-family residential lots along its western property line. Though the development of the Project would reduce noise from Broadway traffic at these adjoining single-family residences, the project would generate operational noise through outdoor residential activities and the use of the parking lot by residents and guests. The three building clusters on the west side of the site will all contain one-bedroom units. These units will be setback 15-20 feet from the shared property line, with the setback area serving as landscaped yard space. Considering that one bedroom units are more likely to accommodate single persons and seniors, rather than families with children. Therefore, we expect that noise generated by normal residential activities within the units and in the landscaped yard space would be

consistent with the type and level of sound generated at the single-family home lots and would not result in noise impacts at the existing residential uses.

However, further to the north, a portion of the project parking lot would adjoin two of the single-family lots on the western property line, with a proposed setback of 5-10 feet. This portion of the parking lot is a dead-end, and thus would not have through traffic movements. Nevertheless, the use of the parking lot, especially in the evening or nighttime hours, could result in noise impacts on the two adjoining single-family residences to the west. To attenuate parking lot noise within the adjacent residential area a 6-foot-high solid fence/wall extending 50 feet from the northeastern corner of the along the northern property, and along the length of the two adjoining residential parcels to the west as shown in Figure 3.

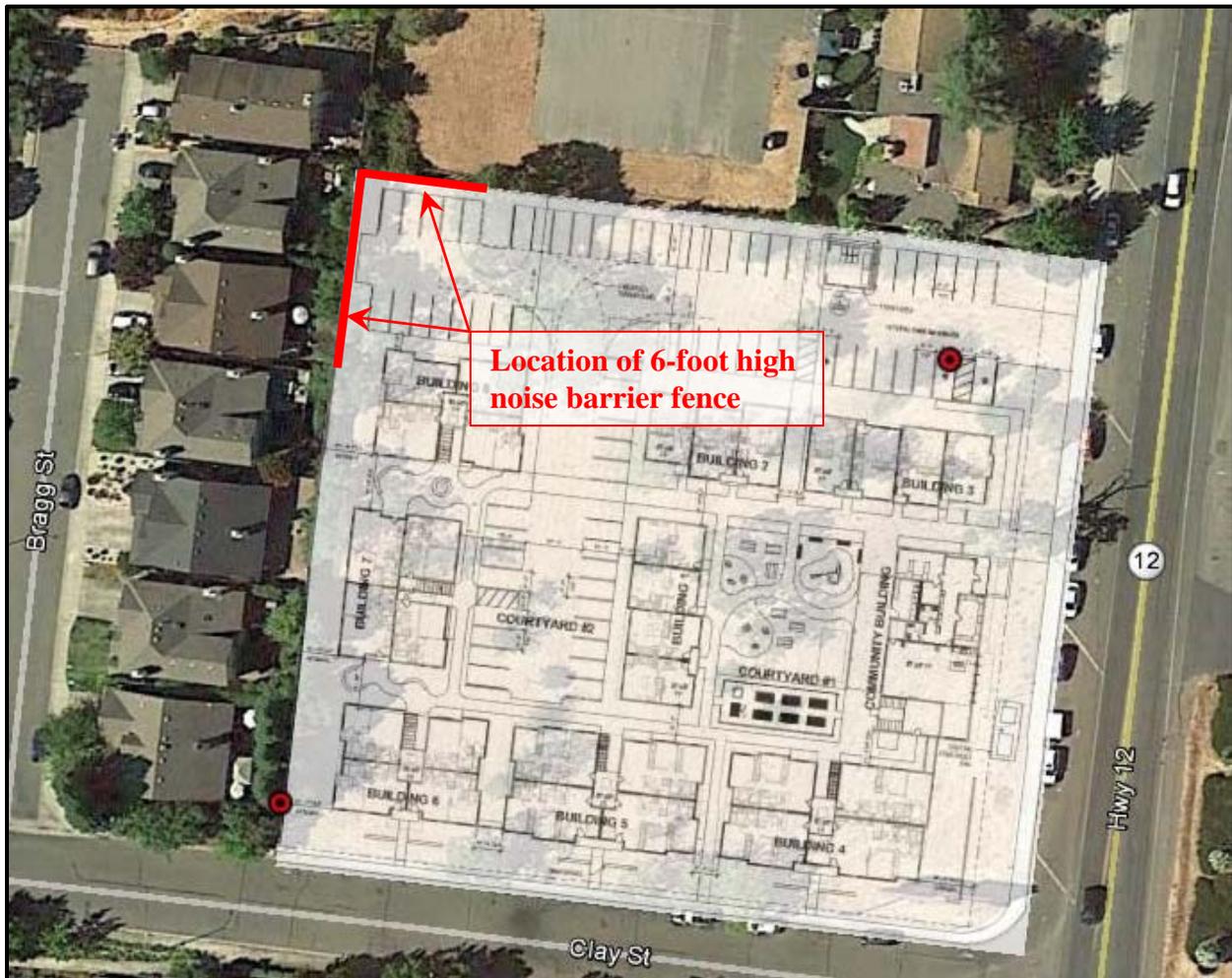


Figure 3: Location of Proposed Noise Barriers

To be effective as a noise barrier the fence/wall shall be built without cracks or gaps in the face or base, have a minimum surface weight of 3.0 lbs. per square feet, and be capable of reducing noise traveling directly through it by a minimum of 10 dBA. A wood fence built with a double layer of 1-inch nominal thickness fence boards, where the second layer of boards installed to cover the joints of the first layer would meet these surface weight and noise reduction requirements. Other wall types that will provide the needed level of noise reduction include

masonry block, and concrete panel walls, but any alternative proposal shall include verification from a qualified acoustical consultant that the required noise attenuation will be met.

This concludes the Illingworth & Rodkin's environmental noise assessment for the proposed 49 unit apartment project proposed at 20269 Broadway in Sonoma, California. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Fred M. Svinth". The signature is fluid and cursive, written over a white background.

Fred M. Svinth, INCE, Assoc, AIA
Senior Consultant, Principal
Illingworth & Rodkin, Inc.

APPENDIX A: FUNDAMENTALS OF ENVIRONMENTAL NOISE

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table A1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA)*. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table A2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq} . The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level (CNEL)* is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level (DNL or L_{dn})* is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TERM	DEFINITIONS
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L _{eq}	The average A-weighted noise level during the measurement period.
Day/Night Noise Level, L _{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L _{max} , L _{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Definitions of Acoustical Terms	
Table 1	

ILLINGWORTH & RODKIN, INC./Acoustical Engineers

At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130		Pain Threshold
Jet Takeoff (200')	120	Rock Music Concert	
	110		Very Loud
Diesel Pile Driver (100')	100	Boiler Room Printing Press Plant	
	90		
Freight Cars (50')	80	In Kitchen With Garbage Disposal Running	Moderately Loud
Pneumatic Drill (50')	80		
Freeway (100')	70	Data Processing Center	
Vacuum Cleaner (10')	70		
	60	Department Store	
Light Traffic (100')	50	Private Business Office	Quiet
Large Transformer (200')	50		
	40	Quiet Bedroom	
Soft Whisper (5')	30	Recording Studio	
	30		
	20		Threshold of Hearing
	10		
	0		

Typical Sound Levels Measured In The Environment And Industry

Table 2

ILLINGWORTH & RODKIN, INC./Acoustical Engineer

Effects of Noise

Sleep and Speech Interference: The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity; above 35 dBA, and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn} . Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance: Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA L_{dn} . At an L_{dn} of about 60 dBA, approximately 2 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 12 percent of the population. There is, therefore, an increase of about 1 percent per dBA between an L_{dn} of 60-70 dBA. Between an L_{dn} of 70-80 dBA, each decibel increase increases by about 2 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 10 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 2 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 3 percent increase in the percentage of the population highly annoyed.



Traffic Impact Study for Altamira Family Apartments



Prepared for the City of Sonoma

Submitted by
W-Trans

June 7, 2017



**TRAFFIC ENGINEERING
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- B. Intersection Level of Service Calculations
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Executive Summary

The project as proposed includes a 48-unit apartment complex to be located on a currently vacant parcel on the northwest corner of Broadway (SR 12)/Clay Street in the City of Sonoma. Access would be provided via a single driveway on Broadway. The project is expected to generate an average of 319 new daily trips, including 24 trips during the a.m. peak hour and 30 trips during the p.m. peak hour.

The intersection of Broadway/Clay Street is currently operating acceptably overall at LOS A during both the a.m. and p.m. peak hours. It is expected to operate acceptably under Future conditions, and also with project-added traffic.

Facilities for alternative modes in the vicinity of the project site are adequate for pedestrians, bicyclists, and transit users. Bicycle parking for 14 bicycles should be provided on-site.

Sight distance on Broadway at the project driveway would be adequate with the addition of 20 feet of red curb on either side of the project driveway. While a left-turn lane at the project driveway is not warranted under Existing or Future volumes, other factors, such as the excessive width of the road and ease of access to other properties in the vicinity, led to a recommendation to restripe Broadway with a two-way left-turn lane along the project frontage, filling in a missing link by connecting to the existing striping north and south of this segment.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with development of a proposed 48-unit apartment project to be located at 20269 Broadway in the City of Sonoma. The traffic study was completed in accordance with criteria established by the City of Sonoma, and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required in order to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The Sonoma Family Housing project includes 48 apartment units to be located on a currently vacant site at 20269 Broadway, as shown in Figure 1.



LEGEND	
	Study Intersection
	SCT Bus Stop
xx	AM Peak Hour Volume
(xx)	PM Peak Hour Volume

Traffic Impact Study for the Altamira Family Apartments Project
Figure 1 – Study Area, Lane Configuration, and Traffic Volumes

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the sections of Broadway and Clay Street fronting the project site and the project access point as well as the intersection of Broadway/Clay Street.

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

Study Intersections

Broadway/Clay Street is a three-legged intersection, with the terminating Clay Street approach stop-controlled.

Study Roadways

Broadway, also known as State Highway 12, is classified as an arterial in the City of Sonoma. There is one lane in each direction with a two-way left-turn lane south of Clay Street to just north of the Napa Road-Leveroni Road/Broadway intersection. Road width varies, but is approximately 60 feet in the vicinity of Clay Street. Travel lanes are 14 to 20 feet wide in the northbound direction and approximately 12 feet wide in the southbound direction with wide striped shoulders.

Clay Street is classified as a local street, 36 feet wide, primarily serving the residential community to the west of Broadway. The street serves approximately 35 vehicles during the a.m. peak hour and 48 vehicles during the p.m. peak hour. There are no parking restrictions on either side of Clay Street fronting the proposed project site. There is no striping distinguishing the directional flow of traffic.

The locations of the study intersection and the existing lane configurations and controls are shown in Figure 1.

Collision History

The collision history for the study intersection was reviewed to determine any trends or patterns that may indicate a safety issue based on data available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) report for July 1, 2011 through June 30, 2016. With only one crash reported during the five-year study period, the collision rate was 0.05 collisions per million vehicles entering (c/mve), which is below the statewide average of 0.18 c/mve for a side-street stop-controlled tee intersection. The collision rate calculation is provided in Appendix A.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site; however, sidewalk gaps, obstacles, and barriers can be found along some of the roadways connecting to the project site. Existing gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Broadway** – While there are gaps in pedestrian facilities on the east side of Broadway, sidewalks, curb ramps, and crosswalks are complete on the west side of Broadway from West Napa Street to Leveroni Road.
- **Clay Street** – Continuous sidewalks are provided on both sides of Clay Street in the vicinity of the project site.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

There is a Class I bike path west of the project location, and Class II bike lanes and Class III sharrows are proposed adjacent to the project site on Broadway and Newcomb Street, respectively. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 1 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Sonoma Bicycle and Pedestrian Master Plan*.

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
Madera Park Trail	I	0.64	W MacArthur St	Leveroni Rd
Planned				
Broadway	II	1.12	Napa St	Leveroni Rd-Napa Rd
Newcomb St	III	0.33	Madera Park Trail	Broadway

Source: *Sonoma Bicycle and Pedestrian Master Plan*, SCTA, 2014

Transit Facilities

Sonoma County Transit (SCT) provides fixed route bus service in Sonoma County and regionally. There are northbound and southbound stops on Broadway between Clay Street and Leveroni Road. The northbound stop is 250 feet from the project site and the southbound stop is 600 feet south of the project site, as shown in Figure 1. SCT Route 34 provides weekday service between Sonoma and Santa Rosa. The route operates once in the

morning in the eastbound direction, and once in the afternoon in the westbound direction. Sonoma and San Rafael are connected by SCT Route 38. This route operates one time southbound for the morning commute and one time northbound for the evening commute Monday through Friday. Route 40 provides service between Sonoma and Petaluma during weekdays. There are two departures in each direction during the morning peak period and three departures in each direction during the peak afternoon and evening periods.

Two or three bicycles can be carried on SCT buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on SCT buses at the discretion of the driver.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. SCT Paratransit is designed to serve the needs of individuals with disabilities within Sonoma County.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersection was analyzed using the unsignalized methodology published in the *Highway Capacity Manual (HCM)*, Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. The “Two-Way Stop-Controlled” intersection capacity methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The ranges of delay associated with the various levels of service are indicated in Table 2.

Table 2 – Two-Way Stop-Controlled Intersection Level of Service Criteria

LOS A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.
LOS B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.
LOS C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.
LOS D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.
LOS E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.
LOS F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Traffic Operation Standards

City of Sonoma

In the 2016 *Circulation Element* of the *City of Sonoma General Plan*, the following policy has been adopted:

Policy 1.5: *Establish a motor vehicle Level of Service (LOS) standard of LOS D at intersections. The following shall be taken into consideration in applying this standard:*

- *Efforts to meet the vehicle LOS standard shall not result in diminished safety for other modes including walking, bicycling, or transit (see Policy 1.6).*
- *The standard shall be applied to the overall intersection operation and not that of any individual approach or movement.*
- *Consideration shall be given to the operation of the intersection over time, rather than relying exclusively on peak period conditions.*

The five intersections surrounding the historic Sonoma Plaza shall be exempt from vehicle LOS standards in order to maintain the historic integrity of the Plaza and prioritize non-auto modes.

Caltrans

While the intersection lies within City of Sonoma limits, it is a part of a State Route. Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D. Based on previous discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay, and *not* that associated with any single movement or approach. Under this approach, if one movement experiences very high delay and also has moderate to high traffic volumes, the overall delay and level of service should reflect the critical nature of the condition. However, if one movement is expected to experience high delay, but has very low traffic volumes, the overall intersection operation will likely still meet Caltrans standards.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected April 14, 2017 while local schools were in session.

Intersection Levels of Service

Under existing conditions, the intersection operates acceptably at LOS A overall during both peak periods. The existing traffic volumes are shown in Figure 1. A summary of the intersection level of service calculations is contained in Table 3, and copies of the Level of Service calculations are provided in Appendix B.

Table 3 – Existing Peak Hour Intersection Levels of Service

Study Intersection Approach	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Broadway/Clay St	0.7	A	0.3	A
<i>Eastbound (Clay St) Approach</i>	<i>21.4</i>	<i>C</i>	<i>16.0</i>	<i>C</i>

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

Future Conditions

Segment volumes for the horizon year of 2040 were obtained from the County's gravity demand model and the differences between the 2010 and 2040 volumes were applied to the existing turning movement counts to arrive at Future volumes. A growth factor of 1.5 was derived from the increase indicated by the model and applied to the side street volumes.

Under the anticipated Future volumes, the study intersections are expected to operate acceptably at LOS A overall during both study periods. Future volumes are shown in Figure 1 and operating conditions are summarized in Table 4.

Table 4 – Future Peak Hour Intersection Levels of Service

Study Intersection Approach	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Broadway/Clay St	0.9	A	0.4	A
<i>Eastbound (Clay St) Approach</i>	<i>21.6</i>	<i>C</i>	<i>17.7</i>	<i>C</i>

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

Project Description

The project consists of 48 apartment units on a site that is currently vacant located at 20269 Broadway in the City of Sonoma. Access would be taken directly from Broadway. The proposed project site plan is shown in Figure 2.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012 for the “Apartment” land use (ITE LU #220). As shown in Table 5, the proposed project is expected to generate an average of 319 trips per day, including 24 trips during the a.m. peak hour and 30 during the p.m. peak hour.

Table 5 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Apartment	48 du	6.65	319	0.51	24	5	19	0.62	30	19	11

Note: du = dwelling unit

Trip Distribution

Based on the volumes at the study intersection as well as anticipated destinations for site residents, it was assumed that project trips would be distributed as shown in Table 6.

Table 6 – Trip Distribution Assumptions

Route	Percent	Daily Trips	AM Trips	PM Trips
Broadway (to/from the north)	50%	160	12	15
Broadway (to/from the south)	50%	159	12	15
TOTAL	100%	319	24	30



A1.01

DATE	NOV 18 2017
SCALE	3/32" = 1'-0"
TITLE	SITE PLAN
PROJECT	ALTAMIRA FAMILY APARTMENTS
CLIENT	ALTAMIRA FAMILY APARTMENTS
DESIGNER	PYATOK ARCHITECTS
LOCATION	20269 BROADWAY, SONOMA, CA 94960
PROJECT NO.	17-001
DATE	NOV 18 2017
SCALE	3/32" = 1'-0"
TITLE	SITE PLAN

ALTAMIRA FAMILY APARTMENTS

20269 Broadway, Sonoma, CA

Pyatok
 1001 TELEGRAPH AVE. SUITE 200
 SAN FRANCISCO, CA 94133
 415.455.2070 | 415.466.8571
 www.pyatok.com

Stuart Associates Inc. **Architects**
 11255 Redwood Avenue
 Berkeley, CA 94703

Source: Pyatok Architects, 05/2017

son045-1.ai 6/17

Traffic Impact Study for the Altamira Family Apartments Project
Figure 2 – Site Plan



Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue to operate at LOS A overall, with minimal increases in delay expected on the stop-controlled side-street approach. These results are summarized in Table 7. Project traffic volumes are shown in Figure 1.

Table 7 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection Approach	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Broadway/Clay St	0.7	A	0.3	A	0.7	A	0.3	A
<i>Eastbound (Clay St) Approach</i>	<i>21.4</i>	<i>C</i>	<i>16.0</i>	<i>C</i>	<i>21.8</i>	<i>C</i>	<i>16.2</i>	<i>C</i>

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

Finding – The study intersection is expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volume, the study intersection is expected to continue operating acceptably. The Future plus Project operating conditions are summarized in Table 8.

Table 8 – Future and Future plus Project Peak Hour Intersection Levels of Service

Study Intersection Approach	Future Conditions				Future plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Broadway/Clay St	0.9	A	0.4	A	1.0	A	0.4	A
<i>Eastbound (Clay St) Approach</i>	<i>21.6</i>	<i>C</i>	<i>17.7</i>	<i>C</i>	<i>21.9</i>	<i>C</i>	<i>17.9</i>	<i>C</i>

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

Finding – The study intersection will continue operating acceptably with project traffic added, at the same Levels of Service as without it and imperceptible increases in average delay for stop-controlled traffic.

Alternative Modes

Pedestrian Facilities

Given the proximity of commercial and residential land uses to the project site, it is reasonable to assume that some project patrons and employees will want to walk, bicycle, and/or use transit to reach the project site. There is existing sidewalk along both the project frontages of Broadway and Clay Street. There is also continuous sidewalk available along the west side of Broadway and a signalized intersection at Broadway/Newcomb Street with a marked crossing across Broadway that middle and high school students could use to walk between the project site and Adele Harrison Middle School and Sonoma Valley High School.

Project Site – Sidewalks exist along both the Broadway and Clay Street project frontages, and there is also continuous sidewalk and a marked crossing between the project site and the nearby middle and high school. A review of the site plan indicates pedestrian walkways are proposed within the project site as well.

Finding – Pedestrian facilities serving the project site are adequate.

Bicycle Facilities

Existing bicycle facilities, including shared use of minor streets, provide adequate access for bicyclists. Class II bike lanes are proposed on Broadway, including along the project frontage.

Bicycle Storage

Short-term bicycle parking is provided at the site by 14 secured bike parking spaces.

Finding – Bicycle facilities serving the project site are adequate.

Transit

Existing transit routes are adequate to accommodate project-generated transit trips. Existing stops are within acceptable walking distance of the site.

Finding – Transit facilities serving the project site are adequate.

Access and Circulation

Site Access

The project site will be accessed via a driveway on Broadway on the northern edge of the property, across from an existing driveway to Broadway Plaza.

Sight Distance

Sight distance along Broadway at the project driveway was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for minor street approaches that are a driveway are based on stopping sight distance, with approach travel speeds as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

Sight distance at the proposed driveway location was field measured. Based on a design speed of 35 mph, the minimum stopping sight distance needed is 250 feet. Broadway is a straight, flat road and stopping sight distance for a posted speed limit of 35 mph is adequate so long as there are no vehicles parked along the curb. The sight distance, shown in the exhibit provided in Appendix C would be adequate at the project driveway with the addition of red curb on either side of the driveway.

Finding - Sight distance is adequate, but could be impacted by parked vehicles.

Recommendation - Parking restrictions in the form of red curbs should be installed for 20 feet on either side of the project driveway. Additionally, low-lying landscaping should be installed along the project frontage on Broadway near the driveway.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lane on Broadway at the proposed driveway was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues. It is understood that this methodology is similar to what Caltrans uses for this type of analysis.

The left-turn warrant study was based on Existing and Future peak hour volumes as well as safety criteria. Under plus Project conditions, a left-turn lane is not warranted on Broadway at the project driveway during either of the peak periods evaluated, or under projected Future volumes. The turn lane warrant worksheets are included in Appendix C.

Left-Turn Lane Design

While a left-turn lane is not warranted on Broadway at the project driveway based on volumes, due to the inconsistency of the lane geometrics on Broadway along the project frontage compared to the rest of Broadway between Napa Street and Leveroni Road-Napa Road, as well as the excessive width that can contribute to speeding and other undesirable driving behaviors, it is recommended that the project restripe Broadway with a

two-way left-turn lane for the 770 feet between the existing two-way left-turn lane striping north and south of the missing segment. This modification would substantially improve access conditions for the project site and for other origins and destinations in the vicinity. As shown in the exhibit in Appendix C, it appears that the new striping will fit within the existing pavement width while retaining parking where it currently exists.

Potential Conflicts

Loading activity on Clay Street for the Sonoma Lodge was collected on video cameras for one week and then reviewed. Based on video footage obtained, it appears there is minimal potential for conflict with delivery trucks for the Sonoma Lodge. During the a.m. peak period trucks were observed parallel parking along the south side of Clay Street, with ample space for eastbound passenger vehicles to continue to Broadway.

Conclusions and Recommendations

Conclusions

- The project as proposed is expected to generate 326 new daily trips, including 25 during the a.m. peak hour and 30 during the p.m. peak hour.
- The study intersection experienced a lower collision rate than the statewide average for similar facilities.
- The intersection currently operates acceptably at LOS A and is expected to continue operating at LOS A under Existing plus Project, Future, and Future plus Project conditions.
- Sight distance at the project driveway is adequate.
- A left-turn lane is not warranted on Broadway at the project driveway based on volumes, but should be provided to improve access and safety.
- Pedestrian, bike and transit facilities are adequate.
- Trucks loading and unloading on the south side of Clay Street are not expected to interfere with access for vehicles traveling on Clay Street.

Recommendations

- Any vegetation at the project driveway should be planted and maintained so it is low-lying. Additionally, red curb should be painted on either side of the driveway for 20 feet.
- A two-way left-turn lane on Broadway designed to Caltrans specifications should be installed to connect to existing turn lane striping to the north and south.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
Assistant Engineer	Lauren Davini, EIT
Graphics	Hannah Yung
Editing/Formatting	Corinne Rasmussen, Hannah Yung
Report Review	Dalene J. Whitlock, PE, PTOE

References

- City of Sonoma 2020 General Plan*, City of Sonoma, 2006
City of Sonoma General Plan: 2016 Circulation Element, 2016
Highway Capacity Manual, Transportation Research Board, 2010
Highway Design Manual, 6th Edition, California Department of Transportation, 2012
Intersection Channelization Design Guide, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985
Statewide Integrated Traffic Records System (SWITRS), California Highway Patrol, 2012-2016
Sonoma Bicycle & Pedestrian Master Plan, Sonoma County Transportation Authority, 2008 (Updated 2014)
Sonoma County Transit, <http://sctransit.com/>
Sonoma Municipal Code, Code Publishing Company, 2016
Trip Generation Manual, 9th Edition, Institute of Transportation Engineers, 2012

SON045-1



Appendix A

Collision Rate Calculations



Intersection Collision Rate Calculations

TIS for Altamira Family Apartments

Intersection # 1: Broadway & Clay St
Date of Count: Tuesday, March 28, 2017

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
ADT: 10500
Start Date: July 1, 2011
End Date: June 30, 2016
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{10,500} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.05 c/mve	0.0%	0.0%
Statewide Average*	0.18 c/mve	0.7%	36.4%

ADT = average daily total vehicles entering intersection
 c/mve = collisions per million vehicles entering intersection
 * 2013 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

Intersection										
Int Delay, s/veh	0.7									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	17	20	8	642	513	14				
Future Vol, veh/h	17	20	8	642	513	14				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	-	0	-	-				
Peak Hour Factor	88	88	88	88	88	88				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	19	23	9	730	583	16				
Major/Minor	Minor2		Major1		Major2					
Conflicting Flow All	1339	591	599	0	-	0				
Stage 1	591	-	-	-	-	-				
Stage 2	748	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	168	507	978	-	-	-				
Stage 1	553	-	-	-	-	-				
Stage 2	468	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	166	507	978	-	-	-				
Mov Cap-2 Maneuver	166	-	-	-	-	-				
Stage 1	553	-	-	-	-	-				
Stage 2	464	-	-	-	-	-				
Approach	EB	EB	NB	NB	SB	SB				
HCM Control Delay, s	21.4	21.4	0.1	0.1	0	0				
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR					
Capacity (veh/h)	978	-	261	-	-					
HCM Lane V/C Ratio	0.009	-	0.161	-	-					
HCM Control Delay (s)	8.7	-	21.4	-	-					
HCM Lane LOS	A	-	C	-	-					
HCM 95th %ile Q(veh)	0	-	0.6	-	-					

Intersection										
Int Delay, s/veh	0.3									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	6	7	9	480	530	14				
Future Vol, veh/h	6	7	9	480	530	14				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	-	0	-	-				
Peak Hour Factor	96	96	96	96	96	96				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	6	7	9	500	552	15				
Major/Minor	Minor2		Major1		Major2					
Conflicting Flow All	1078	559	567	0	-	0				
Stage 1	559	-	-	-	-	-				
Stage 2	519	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	242	529	1005	-	-	-				
Stage 1	572	-	-	-	-	-				
Stage 2	597	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	240	529	1005	-	-	-				
Mov Cap-2 Maneuver	240	-	-	-	-	-				
Stage 1	572	-	-	-	-	-				
Stage 2	592	-	-	-	-	-				
Approach	EB	EB	NB	NB	SB	SB				
HCM Control Delay, s	16	16	0.2	0.2	0	0				
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR					
Capacity (veh/h)	1005	-	340	-	-					
HCM Lane V/C Ratio	0.009	-	0.04	-	-					
HCM Control Delay (s)	8.6	-	16	-	-					
HCM Lane LOS	A	-	C	-	-					
HCM 95th %ile Q(veh)	0	-	0.1	-	-					

Intersection									
Int Delay, s/veh	0.9								
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	W		W	W	W	W			
Traffic Vol, veh/h	26	30	12	688	573	21			
Future Vol, veh/h	26	30	12	688	573	21			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized	-	None	-	None	-	None			
Storage Length	0	-	50	-	-	-			
Veh in Median Storage, #	0	-	0	-	0	-			
Grade, %	0	-	-	0	0	-			
Peak Hour Factor	100	100	100	100	100	100			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	26	30	12	688	573	21			
Major/Minor									
	Minor2		Major1		Major2				
Conflicting Flow All	1296	584	594	0	-	0			
Stage 1	584	-	-	-	-	-			
Stage 2	712	-	-	-	-	-			
Critical Hdwy	6.42	6.22	4.12	-	-	-			
Critical Hdwy Stg 1	5.42	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	-	-	-	-	-			
Follow-up Hdwy	3.518	3.318	2.218	-	-	-			
Pot Cap-1 Maneuver	179	512	982	-	-	-			
Stage 1	557	-	-	-	-	-			
Stage 2	486	-	-	-	-	-			
Platoon blocked, %	-	-	-	-	-	-			
Mov Cap-1 Maneuver	177	512	982	-	-	-			
Mov Cap-2 Maneuver	177	-	-	-	-	-			
Stage 1	557	-	-	-	-	-			
Stage 2	480	-	-	-	-	-			
Approach									
	EB	EB	NB	NB	SB	SB			
HCM Control Delay, s	21.6	21.6	0.1	0.1	0	0			
HCM LOS	C	C							
Minor Lane/Major Mvmt									
	NBL	NBT	EBLn1	SBT	SBR				
Capacity (veh/h)	982	-	273	-	-	-			
HCM Lane V/C Ratio	0.012	-	0.205	-	-	-			
HCM Control Delay (s)	8.7	-	21.6	-	-	-			
HCM Lane LOS	A	-	C	-	-	-			
HCM 95th %ile Q(veh)	0	-	0.8	-	-	-			

Intersection									
Int Delay, s/veh	0.4								
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	W		W	W	W	W			
Traffic Vol, veh/h	9	11	14	573	581	21			
Future Vol, veh/h	9	11	14	573	581	21			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized	-	None	-	None	-	None			
Storage Length	0	-	50	-	-	-			
Veh in Median Storage, #	0	-	0	-	0	-			
Grade, %	0	-	-	0	0	-			
Peak Hour Factor	100	100	100	100	100	100			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	9	11	14	573	581	21			
Major/Minor									
	Minor2		Major1		Major2				
Conflicting Flow All	1193	592	602	0	-	0			
Stage 1	592	-	-	-	-	-			
Stage 2	601	-	-	-	-	-			
Critical Hdwy	6.42	6.22	4.12	-	-	-			
Critical Hdwy Stg 1	5.42	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	-	-	-	-	-			
Follow-up Hdwy	3.518	3.318	2.218	-	-	-			
Pot Cap-1 Maneuver	206	506	975	-	-	-			
Stage 1	553	-	-	-	-	-			
Stage 2	547	-	-	-	-	-			
Platoon blocked, %	-	-	-	-	-	-			
Mov Cap-1 Maneuver	203	506	975	-	-	-			
Mov Cap-2 Maneuver	203	-	-	-	-	-			
Stage 1	553	-	-	-	-	-			
Stage 2	539	-	-	-	-	-			
Approach									
	EB	EB	NB	NB	SB	SB			
HCM Control Delay, s	17.7	17.7	0.2	0.2	0	0			
HCM LOS	C	C							
Minor Lane/Major Mvmt									
	NBL	NBT	EBLn1	SBT	SBR				
Capacity (veh/h)	975	-	303	-	-	-			
HCM Lane V/C Ratio	0.014	-	0.066	-	-	-			
HCM Control Delay (s)	8.7	-	17.7	-	-	-			
HCM Lane LOS	A	-	C	-	-	-			
HCM 95th %ile Q(veh)	0	-	0.2	-	-	-			

Intersection										
Int Delay, s/veh	0.7									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	17	20	8	645	523	14				
Future Vol, veh/h	17	20	8	645	523	14				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	0	-	0	-				
Peak Hour Factor	88	88	88	88	88	88				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	19	23	9	733	594	16				
Major/Minor	Minor2		Major1		Major2					
Conflicting Flow All	1353	602	610	0	-	0				
Stage 1	602	-	-	-	-	-				
Stage 2	751	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	165	500	969	-	-	-				
Stage 1	547	-	-	-	-	-				
Stage 2	466	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	163	500	969	-	-	-				
Mov Cap-2 Maneuver	163	-	-	-	-	-				
Stage 1	547	-	-	-	-	-				
Stage 2	462	-	-	-	-	-				
Approach	EB	EB	NB	NB	SB	SB				
HCM Control Delay, s	21.8	21.8	0.1	0.1	-	0				
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR					
Capacity (veh/h)	969	-	256	-	-					
HCM Lane V/C Ratio	0.009	-	0.164	-	-					
HCM Control Delay (s)	8.8	-	21.8	-	-					
HCM Lane LOS	A	-	C	-	-					
HCM 95th %ile Q(veh)	0	-	0.6	-	-					

Intersection										
Int Delay, s/veh	0.3									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	6	7	9	490	535	14				
Future Vol, veh/h	6	7	9	490	535	14				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	0	-	0	-				
Peak Hour Factor	96	96	96	96	96	96				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	6	7	9	510	557	15				
Major/Minor	Minor2		Major1		Major2					
Conflicting Flow All	1094	565	572	0	-	0				
Stage 1	565	-	-	-	-	-				
Stage 2	529	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	237	524	1001	-	-	-				
Stage 1	569	-	-	-	-	-				
Stage 2	591	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	235	524	1001	-	-	-				
Mov Cap-2 Maneuver	235	-	-	-	-	-				
Stage 1	569	-	-	-	-	-				
Stage 2	586	-	-	-	-	-				
Approach	EB	EB	NB	NB	SB	SB				
HCM Control Delay, s	16.2	16.2	0.2	0.2	-	0				
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR					
Capacity (veh/h)	1001	-	334	-	-					
HCM Lane V/C Ratio	0.009	-	0.041	-	-					
HCM Control Delay (s)	8.6	-	16.2	-	-					
HCM Lane LOS	A	-	C	-	-					
HCM 95th %ile Q(veh)	0	-	0.1	-	-					

Intersection										
Int Delay, s/veh	1									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	26	30	12	691	583	21				
Future Vol, veh/h	26	30	12	691	583	21				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	-	0	0	-				
Peak Hour Factor	100	100	100	100	100	100				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	26	30	12	691	583	21				
Major/Minor										
Minor2	Minor1			Major2						
Conflicting Flow All	1309	594	604	0	-	0				
Stage 1	594	-	-	-	-	-				
Stage 2	715	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	176	505	974	-	-	-				
Stage 1	552	-	-	-	-	-				
Stage 2	485	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	174	505	974	-	-	-				
Mov Cap-2 Maneuver	174	-	-	-	-	-				
Stage 1	552	-	-	-	-	-				
Stage 2	479	-	-	-	-	-				
Approach										
EB	NB			SB						
HCM Control Delay, s	21.9	0.1			0					
HCM LOS	C									
Minor Lane/Major Mvmt										
NBL	NBT	EBLn1	SBT	SBR						
Capacity (veh/h)	974	-	268	-						
HCM Lane V/C Ratio	0.012	-	0.209	-						
HCM Control Delay (s)	8.7	-	21.9	-						
HCM Lane LOS	A	-	C	-						
HCM 95th %ile Q(veh)	0	-	0.8	-						

Intersection										
Int Delay, s/veh	0.4									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations	W		W	W	W	W				
Traffic Vol, veh/h	9	11	14	583	586	21				
Future Vol, veh/h	9	11	14	583	586	21				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	0	-	50	-	-	-				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	-	0	0	-				
Peak Hour Factor	100	100	100	100	100	100				
Heavy Vehicles, %	2	2	2	2	2	2				
Mvmt Flow	9	11	14	583	586	21				
Major/Minor										
Minor2	Major1			Major2						
Conflicting Flow All	1208	597	607	0	-	0				
Stage 1	597	-	-	-	-	-				
Stage 2	611	-	-	-	-	-				
Critical Hdwy	6.42	6.22	4.12	-	-	-				
Critical Hdwy Stg 1	5.42	-	-	-	-	-				
Critical Hdwy Stg 2	5.42	-	-	-	-	-				
Follow-up Hdwy	3.518	3.318	2.218	-	-	-				
Pot Cap-1 Maneuver	202	503	971	-	-	-				
Stage 1	550	-	-	-	-	-				
Stage 2	542	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	199	503	971	-	-	-				
Mov Cap-2 Maneuver	199	-	-	-	-	-				
Stage 1	550	-	-	-	-	-				
Stage 2	534	-	-	-	-	-				
Approach										
EB	NB			SB						
HCM Control Delay, s	17.9	0.2			0					
HCM LOS	C									
Minor Lane/Major Mvmt										
NBL	NBT	EBLn1	SBT	SBR						
Capacity (veh/h)	971	-	298	-						
HCM Lane V/C Ratio	0.014	-	0.067	-						
HCM Control Delay (s)	8.8	-	17.9	-						
HCM Lane LOS	A	-	C	-						
HCM 95th %ile Q(veh)	0	-	0.2	-						

Appendix C

Site Access





N.T.S.



Altamira Family Apartments

SON045-1

Sight Distance Exhibit

8 May 2017

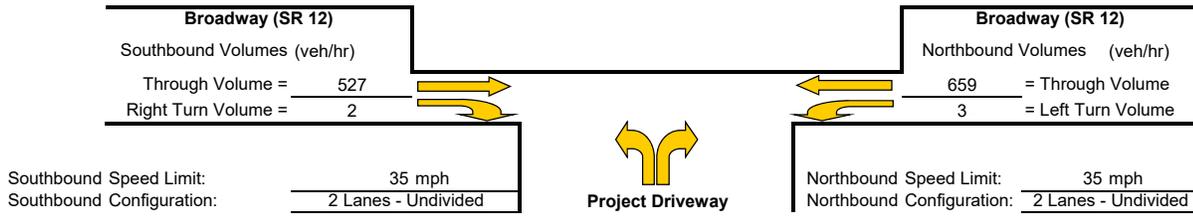
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Broadway (SR 12)/Project Driveway

Study Scenario: AM Existing plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 1035.1
 Advancing Volume Va = 529
 If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 529
 If $AV < Va$ then warrant is met -

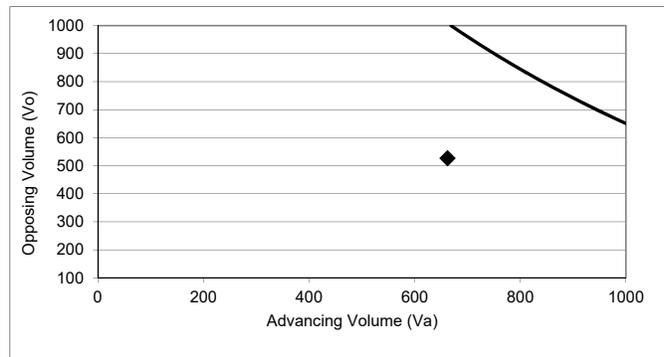
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %lt 0.5 %

Advancing Volume Threshold AV 1153 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

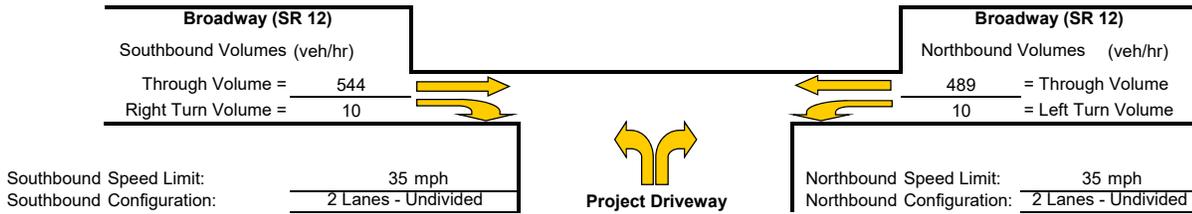
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Broadway (SR 12)/Project Driveway
 Study Scenario: PM Existing plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 975.1
 Advancing Volume Va = 554
 If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

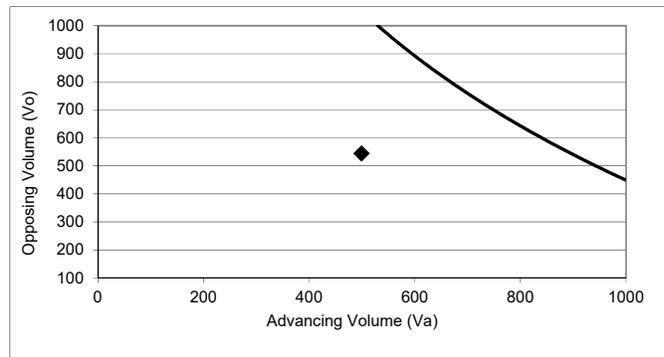
2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 554
 If $AV < Va$ then warrant is met -

Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %lt 2.0 %
 Advancing Volume Threshold AV 896 veh/hr
 If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

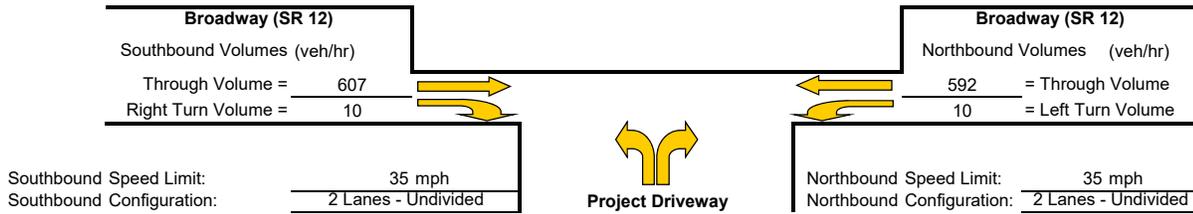
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Broadway (SR 12)/Project Driveway

Study Scenario: PM Existing plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 975.1
 Advancing Volume Va = 617
 If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 617
 If $AV < Va$ then warrant is met -

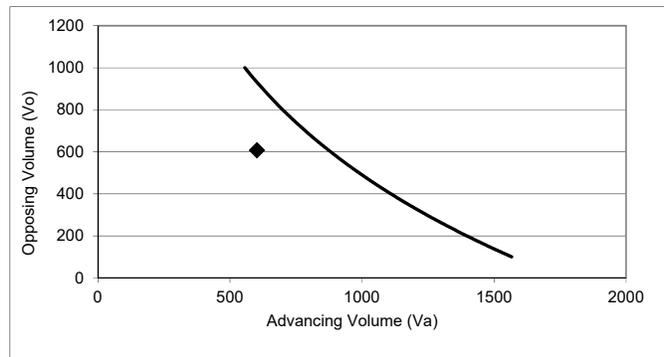
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %lt 1.7 %

Advancing Volume Threshold AV 874 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.



Altamira Family Apartments

Broadway Two-Way Left-Turn Lane Exhibit

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8 May 2017

