Dear Ms. Clement:

Per your request, FirstCarbon Solutions, Inc. (FCS) reviewed LSA’s Biological Site Assessment for 187 Sacramento Avenue (APN 177-17209, 10, 18, and 20) Property, Marin County, California (LSA BSA) as it relates to the items discussed in Section I. 5.B of the Marin County Planning Commission Resolution No. PC20-006.

Based on a site survey conducted by a qualified Biologist and certified wetland delineator on January 29, 2021; additional analysis of background information including aerial imagery; review of the Arborist Report for 187 Sacramento Avenue prepared by Arborscience, LLC; and review of the updated Topographic Map provided by BKF (Attachment A), FCS evaluated relevant parameters presented in the LSA BSA as they relate to protected trees, the location and extent of stream and drainage features, the location of TOB, the extent of riparian and non-riparian woodland habitat, and subsequently the Stream Conservation Area as referred to in the Marin Countywide Plan¹ (CWP) and the Land Owner Resource Guide for Properties Near Streams² (Stream Guide), where applicable.

BKF’s topographic survey and map (Attachment A) was updated in January 2021 to include additional survey data including location of top of bank (TOB) and exact location of trunks and canopy driplines of non-riparian trees.

LSA provides a spatial analysis of the Stream Course, Riparian Canopy, Stream Conservation Area, the off-site trunk location and canopy dripline of an Oregon Oak through its Figure 1 Stream Conservation Area and Protected Tree (LSA Figure 1). It is FCS professional opinion that LSA Figure 1 may not adequately represent the relevant information needed to determine protected trees and stream resources; specifically, it appears to be inadequate related to the following elements:

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Completeness of Stream Resources

In addition to the stream shown on LSA Figure 1, two additional ephemeral stream channels are converging on the project site along its northern boundary, as shown on the BKF Topographic Map Exhibit 1 (Attachment A), FCS Exhibit 1, Biological Constraints Analysis Map (Attachment B), and Photo 1 (Attachment C). Because of presence of riparian vegetation for more than 100 feet along this stream (within and upstream from the project site), CWA Policy BIO 4.1 Restricted Land Use in Stream Conservation Areas (i.e., implementation of an SCA) would be applicable.

Additionally, FCS evaluated a vegetated swale on the northern portion of the property. This swale runs east to west for approximately 140 feet, terminating at the main blue-line stream, as shown on FCS Exhibit 1, and Photos 2 and 3. At the time of the survey, the swale did not show evidence of substantial concentrated flow, e.g., no ordinary high-water mark or other parameters typically indicative of a stream (including ephemeral headwater streams) were present. This lack of concentrated flow appears relevant because an atmospheric river system passed over the area that added approximately 2.5 inches of rain within the 3 days prior to the survey, which would have resulted in flow indicators if the feature functioned as an ephemeral headwater stream.

Vegetation in the swale consisted of a mix of native and non-native herbaceous species with a composition similar to the vegetation type of surrounding areas, and generally associated with upland conditions (i.e., not indicative of wetland or stream conditions), including non-native grasses such as ripgut brome (Bromus diandrus), wild oat (Avena sp.), Italian ryegrass (Festuca perennis), purple false brome (Brachypodium distachyon), and rattlesnake grass (Briza maxima). Forbs observed included soap plant (Chlorogalum pomeridianum), hairy cat’s ear (Hypochaeris radicata), bristly ox-tongue (Helminthotheca echioides), fennel (Foeniculum vulgare), and Italian thistle (Carduus pycnocephalus). No hydric soil indicators (e.g., distinct redoximorphic features) were present in a soil sample taken from the bottom of the swale, where anoxic (i.e., waterlogged) conditions would be expected, if present.

In conclusion, the swale is not considered a stream or a wetland. Therefore, and in combination with the fact that the swale does not support riparian vegetation for more than 100 feet, CWA Policy BIO 4.1 Restricted Land Use in Stream Conservation Areas (i.e., implementation of an SCA) would not be applicable to this swale.

Top of Bank

LSA Figure 1 does not include the location of top of bank (TOB), which would be required in order to determine the extent of the SCA. (Additionally, the TOB is typically used to aid the determination of riparian versus non-riparian woodland).

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BKF conducted additional surveying to determine the exact location of TOB, and issued an updated Topographic Map dated January 14, 2021 (Attachment A).

**Stream Conservation Area**

Per CWA Policy BIO 4.1, parcels between 2 and 0.5 acres in size shall provide a minimum 50-foot development setback on each side of the top of bank. LSA Figure 1 shows an area labeled “Stream Conservation Area”, however it appears that the extent of the SCA as shown on LSA Figure 1 is not based on TOB. FCS spatial analysis results in a different extent of SCA when based on the TOB as provided by BKF, as shown on FCS Exhibit 1. For a discussion of why an SCA is not applicable to the non-wetland swale located on the property, please see section *Completeness of Stream Resources*, above.

**Woody Riparian Vegetation**

The Stream Guide defines riparian vegetation as “vegetation associated with a watercourse and relies on the higher level of water the watercourse provides.” LSA Figure 1 appears to adequately show the extent of riparian woodland along the western stream; however, because the northern stream was not mapped, woody riparian vegetation would include additional trees on the northern property boundary, as shown on FCS Exhibit 1.

**Protected Trees**

Based on the *Arborist Report for 187 Sacramento Avenue* prepared by Arborscience, LLC, the trees shown on FCS Exhibit 1 as “Coast Live Oak” and “Buckeyes” would be protected by the Marin County Native Tree Ordinance. While not addressed in the Arborist Report, the tree shown as “Oak” on FCS Exhibit 1 (Photo 4) would also be protected because a substantial portion of it falls within the SCA, and it would also be afforded protection under the Marin County Native Tree Ordinance. Additionally, the canopy of an Oregon oak that is growing off site partially overhangs onto the Project site as shown on Exhibit 1 and Photo 5; accordingly, this tree would also qualify as a protected tree.

**Recommendations**

FCS recommends revising the spatial analysis and LSA Figure 1 and associated text in the LSA BSA to include the changes related to completeness of stream resources, top of bank, Stream Conservation Area, woody riparian vegetation, and protected trees as provided above and in the attached FCS Exhibit 1 (Attachment B). Alternatively, the Project team may use the information provided in this letter and Exhibit 1 to support the environmental review process. Please do not hesitate to reach out to FCS with questions or concerns.

Sincerely,

Bernhard Warzecha, Senior Biologist
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380  
Walnut Creek, CA 94597

Attachment A:  BKF Topographic Map  
Attachment B:  Biological Constraints Analysis Map  
Attachment C:  Site Photographs
Attachment A:
BKF Topographic Map
Attachment B:
Biological Constraints Analysis Map
Attachment C:
Site Photographs
Photograph 1: Converging ephemeral stream channels on the northern boundary of the Project site, looking north

Photograph 2: Non-wetland swale looking west (downslope).
Photograph 3: Non-wetland swale looking east (upslope).

Photograph 4: Non-riparian oak partially overlapping with the SCA.
Photograph 5: Oregon oak located off site, looking north.