Stantec

Memo

To:	Charity Wagner Charity.wagner@gmail.com	From:	Jared Elia, Stantec Senior Biologist Michelle Tovar, Stantec Principal Biologist
		Date:	October 8, 2020

Reference: Middle Green Valley Development Project – Preliminary Survey Results

This memorandum (memo) provides the summary of preliminary results for botanical and biological surveys conducted in 2019 and 2020 for the Middle Green Valley Development Project (Project). Surveys were conducted following state and/or Federal guidelines and consisted of pedestrian surveys to document observations within all portions of the Plan Area (Attachment A Figure 1). Preliminary results discussed in this memo are associated with the following surveys:

- Aquatic resources delineation surveys
- California red-legged frog (*Rana draytonii*) surveys
- Botanical surveys for special-status plants
- Callippe silverspot butterfly (*Speyeria callippe callippe*) host plant surveys (*Viola pedunculata*)
- Swainson's hawk (*Buteo swainsoni*) nesting surveys
- Western burrowing owl (*Athene cunicularia*) assessment

Aquatic Resources Delineation Survey Results

The aquatic resources field assessment was conducted by multiple Stantec biologists from May 22 to August 6, 2019. Prior to conducting fieldwork, the following resources were reviewed:

- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory
- Google Earth color aerial imagery dating back to 1985
- U.S. Geological Survey (USGS) 7.5-minute topographic maps
- USGS National Hydrography Dataset

These resources were used to identify potential aquatic features based on changes in vegetation, topographic changes, or visible drainage patterns. Prior to field surveys, potential features were digitized into a working field map that was then used as a reference during field surveys.

A total of 60.946 ac of wetlands and open water potentially under the jurisdiction of the Regional Water Quality Control Board (RWQCB) and United States Army Corps of Engineers (USACE) were mapped. A total of 56.462 ac consisting of 31.796 ac of riparian wetland (canopy) and 24.665 ac of herbaceous wetlands or ponds potentially under the jurisdiction of the California Department of Fish and Wildlife (CDFW) were also mapped and shown in Figure 1 and Table 1. In addition, 9.448 ac of drainages potentially under the jurisdiction of RWQCB and USACE and 16.043 ac potentially under the jurisdiction of CDFW were also mapped (57,795.711 linear feet).

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Table 1: Summary of Potentially Jurisdictional Aquatic Features within the Plan Area

Feature Type	USACE and RWQCB		CDFW	
	Acres[1]	Linear Feet	Acres[2]	Linear Feet
Wetlands	45.309	N/A	40.825	N/A
Ponds/Impoundments	15.637	N/A	15.637	N/A
Subtotal – Wetland/Open Water	**60.946**	**--**	**56.462**	**--**
Ephemeral Drainages	2.308	26,157.495	5.816	26,157.495
Intermittent Drainages	3.068	22,636.352	5.100	22,636.352
Perennial Drainages	4.072	9,001.864	5.127	9,001.864
Subtotal – Drainages	**9.448**	**57,795.711**	**16.043**	**57,795.711**
Total Jurisdictional Area	**70.394**	**57,795.711**	**72.505**	**57,795.711**

Notes:

[1] Acreage was calculated using the area within the OHWM and includes culverts.

[2] CDFW-jurisdictional acreage was calculated as follows: drainages used the area within TOB including culverts; wetlands were defined as areas associated with drainages that are forested or vegetated with shrubs or are herbaceous wetlands connected to drainages that also meet the USACE criterion for hydrophytic vegetation. In some cases, the forested or scrub/shrub wetlands extend beyond TOB.

Based on the results of the aquatic resources delineation, impacts to potential state and Federal waters will require the appropriate permits from the regulatory agencies. These include a 404 permit issued by the USACE, a 401 Water Quality Certification issued by the RWQCB, and a 1602 Streambed Alteration Agreement issued by the CDFW. Impacts to aquatic features may also require mitigation to offset Project impacts.

California Red-legged Frog Survey Results

To conduct the California red-legged frog (CRLF) habitat assessment within the Plan Area, the USFWS Guidance was followed which provides criteria for performing site assessments. Site assessment data sheets for surveys conducted in and around aquatic and riparian habitat were used to ensure a consistent level of effort for CRLF habitat assessments. The habitat assessment followed USFWS Guidance to answer the three questions posed in the Guidance:

1. Is the site within the current or historical range of the CRLF?
2. Are there known records of CRLF at the site or within a 1.6-kilometer (1-mile) radius of the site?
3. What are the habitats within the project site and within 1.6 kilometers (1-mile) of the project boundary?

Stantec senior biologist Jared Elia conducted daytime surveys and habitat assessments within the Plan Area on June 12, 14, 25, and July 28, 2019. Information collected during the habitat assessment include data on the following characteristics: aquatic habitat type, aquatic features such as size and depth of pond, riparian

and upland vegetation communities, shoreline features, presence of introduced predator species, surrounding land use, barriers to CRLF movement, and presence of CRLF required habitat for breeding and dispersal.

There have been a total of seven CRLF sighting observations within approximately 1-mile from the Plan Area between 2003 and 2016. Project specific studies have observed one sub-adult CRLF along the banks of Pond 4 on June 25, 2019 (shown in Figure 1) and one adult was observed at Pond 2 in 2010.

Table 2 summarizes the results of the assessment of aquatic habitats within the Plan Area and the 1-mile buffer area of the project (Study Area). Within the Plan Area, all ponds, segments of Hennessey Creek and segments of Green Valley Creek provide suitable CRLF breeding habitat. The remaining portions of the Study Area, including the unnamed creek, were determined to provide suitable dispersal habitat but not suitable breeding habitat.

Suitable upland refugia, in the form of large burrow complexes, were not observed within the Plan Area; however, the dense oak woodland and riparian canopies present throughout, could meet this biological requirement. It is also apparent that Ponds 1, 2, 3, and 4 retain water year-round which could allow CRLF to remain within and adjacent to these ponds throughout the year.

Table 2. Results of the Assessment of Potential Habitat for California Red-Legged Frog

Site Name	Figure Number	Habitat Type	Habitat Potential
Potential Habitat within the Study Area			
Pond 1	2	Perennial Pond	Potentially suitable breeding habitat.
Pond 2	2	Perennial Pond	Potentially suitable breeding habitat. One adult CRLF found in 2010.
Pond 3	2	Perennial Pond	Potentially suitable breeding habitat
Pond 4	2	Perennial Pond	Potentially suitable breeding habitat. One sub-adult CRLF found on the northern bank in 2019.
Pond 5	2	Perennial Pond	Potentially suitable breeding habitat.
Unnamed Creek	2	Intermittent Creek	Suitable dispersal habitat.
Hennessey Creek	2	Ephemeral Creek	No suitable breeding habitat; suitable dispersal habitat.
Green Valley Creek	2	Perennial Creek	Pooled areas provide suitable breeding habitat.
Potential Habitat within 1-mile of the Plan Area			
Pond 6	2	Perennial Pond	Potentially suitable breeding habitat.
Pond 7	2	Perennial Pond	Potentially suitable breeding habitat.

Based on the results of the CRLF habitat assessment, impacts to potentially suitable breeding habitat and suitable terrestrial habitat may require consultation with the USFWS and a Biological Opinion. Mitigation for impacts to potentially suitable habitat may also be required.

Botanical – Special-Status Plant Survey Results

Stantec botanist conducted rare plant surveys in two rounds: the first in April 2020 and the second in August and September 2020. Prior to conducting plant surveys, reference populations of known special-status plants were visited to determine if they were blooming. Surveys were conducted within the Project footprint with a 500 foot buffer (Survey Area) and were floristic in nature and focused on approximately 535 acres buffered off

Reference: **Middle Green Valley Development Project – Preliminary Survey Results**

of the proposed development footprint. A total of six rare plant species were detected and documented within the Survey Area, including one species not previously detected in prior surveys, *Iris longipetala* (coast iris). One species detected within the Plan Area in 2018 surveys (*Balsamorhiza macrolepis*) was not detected in 2020 surveys because the 2020 Survey Area was reduced and is no longer co-located with this occurrence. The 2018 occurrence location was visited in 2020 as a reference site, and no additional plants were located within the 2020 Survey Area. The preliminary results of botanical surveys are found in Table 3 below.

Table 3. Preliminary Results for Botanical Surveys

Species	Detected in 2018	Listing Status	Notes
Centromadia parryi ssp. *parryi* (pappose tarplant)	Yes	CRPR 1B.2	An additional previously undetected population of thousands of individuals in a pasture was mapped in 2020.
Eryngium jepsonii (Jepson's coyote thistle)	Yes	California Rare Plant Rank (CRPR) 1B.2	One previously undetected population located in a disturbed area adjacent to a hayfield was mapped during 2020 surveys. In addition, the two occurrences mapped in 2018 associated with a stock pond were not detected. However, a common species of *Eryngium* (*E. aristulatum* var. *aristulatum*) was detected at the stock pond location. It is unclear if the previous identification was incorrect or if the plants did not emerge this year.
Helianthella castanea (Diablo helianthella)	Yes	CRPR 1B.2	Two new occurrences were detected in addition to the 2018 occurrences.
Iris longipetala (coast iris)	No	CRPR 4.2	All occurrences mapped in 2020 were new. Most were associated with intermittent to ephemeral drainages and seasonal wetlands.
Juglans hinsdii (Northern California black walnut)	Yes	CRPR 1B.1	Individuals were documented. However, these are likely of hybrid origin and are not considered rare.
Leptosiphon acicularis (bristly Leptosiphon)	Yes	CRPR 4.2	No new occurrences were detected; the population size was larger in 2020 than in 2018.

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Photo 1. Diablo helianthella (*Helianthella* castanea), CRPR 1B.2, within the Survey Area.

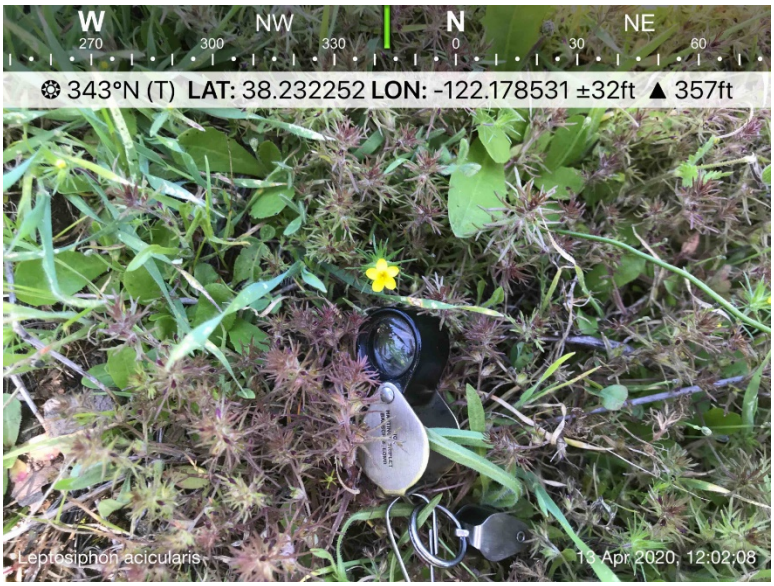

Photo 2. Bristly Leptosiphon (*Leptosiphon acicularis*), CRPR 4.2, within the Survey Area.

Callippe Silverspot Butterfly Host Plant Survey Results

Callippe silverspot butterfly host plant surveys for johnny jump up (*Viola pedunculata*) (Photo 3) were conducted on March 5 and 6, 2020. Prior to conducting plant surveys, reference populations of known johnny jump up plants were visited to determine if they were blooming. Surveys were performed by conducting pedestrian surveys within the Plan Area, focusing on habitats associated with grasslands adjacent to oak woodlands.

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Within the Plan Area, a large population of plants (over 100 individual plants) was observed encompassing approximately 7,500 square feet located near Hennessey Creek on the Lawton parcel (148-180-040). This population is shown in Photo 4 and Figure 1. Another large population (over 500 plants) encompassing approximately 18,600 square feet was observed near the western limits of the Plan Area in the Lawton parcel (148-180-010), shown in Photo 5 and Figure 1. Other smaller populations of individual plants and clusters between 5-20 plants were observed adjacent to these larger populations. Based on these results, the Plan Area provides suitable habitat for Callippe silverspot butterfly and potential impacts to these habitats may require consultation and permitting from the USFWS. Mitigation for impacts to suitable habitat may also be required.

Photo 3. *Viola pedunculata* observed within the Plan Area.

Photo 4. Location of large *Viola* population on the Lawton parcel (148-180-040).

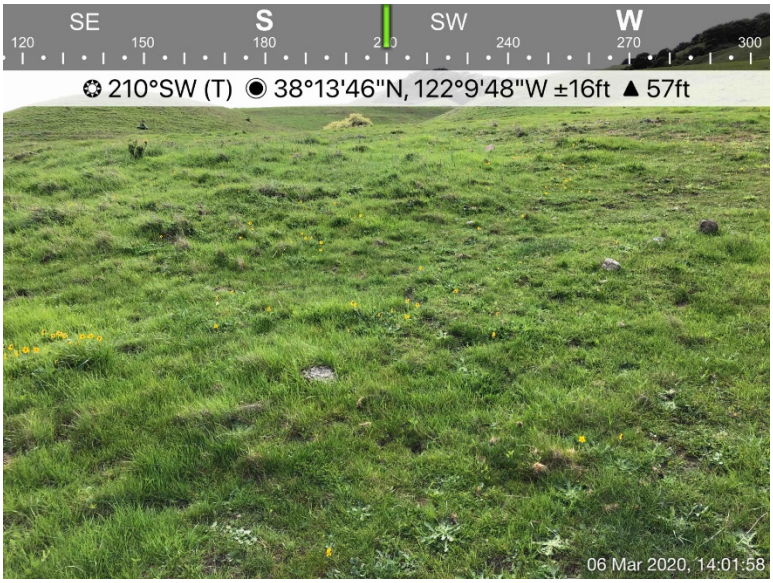

Photo 5. Location of large *Viola* population on the Lawton parcel (148-180-010).

Swainson's Hawk Nesting Survey Results

Swainson's hawk protocol level surveys were conducted on March 5th, 26th, and 27th, 2020 following the Swainson's Hawk Technical Advisory Committee's "*Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*," (May 31, 2000). Surveys were conducted using the windshield and pedestrian survey methods from multiple locations throughout the Plan Area. A 0.5-mile buffer around the Plan Area was also surveyed for potential Swainson's hawk nesting activity. Surveys were conducted during Period 1 (January to March 20th) and Period 2 (March 20th to April 5th) to observe potential nesting sites and nesting behavior. The surveys were focused on the riparian habitat, oak woodlands, and Eucalyptus groves that occur within the Plan Area.

The two Swainson's hawk nest locations that were first identified in a 2018 survey, were observed during the 2020 surveys; however, no old nests or nesting material was found at either of those locations. Four potential nests were observed within the Eucalyptus trees and oak woodlands in and adjacent to the Plan Area. Two of these nests were confirmed to be occupied by red-tailed hawks (*Buteo swainsoni*) and the other two were confirmed not be raptor nests based on the size of the nest. A pair of Swainson's hawks were observed on March 26, 2020 soaring over the riparian habitat and adjacent vineyards within the Plan Area but did not exhibit any nesting behavior. Based on these survey results, the Plan Area does provide suitable nesting habitat for this species and impacts to nesting and foraging habitat may require consultation and permitting by the CDFW.

Western Burrowing Owl Survey Results

Western burrowing owl (BUOW) reconnaissance surveys were conducted in 2019 and 2020 by Stantec biologists to verify the results of a BUOW habitat assessment conducted in 2018. Results of the habitat assessment concluded that no BUOW occurrences were noted within the Plan Area or in the immediate vicinity based on CNDDB, Draft Solano HCP, and eBird searches prior to the site assessment. Based on the results of the reconnaissance surveys in 2019 and 2020, along with the habitat assessment results, no

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suitable BUOW habitat was found, no BUOW were observed, and no ground squirrels suitable for BUOW were observed in the Plan Area; therefore, BUOW was ruled out as potentially occurring within the Plan Area.

Stantec Consulting Services Inc.

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Attachment: Attachment A Figure 1

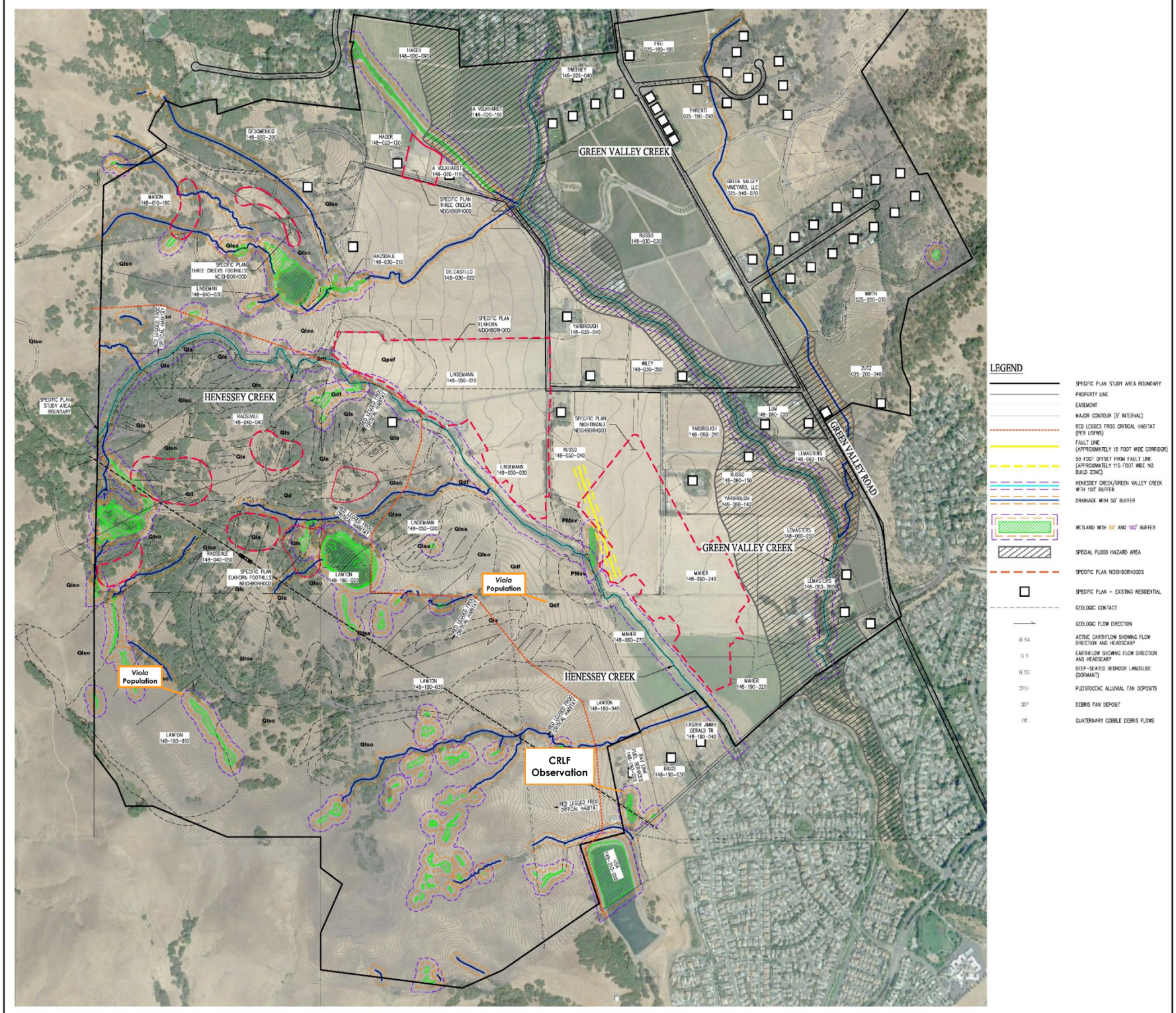

EXHIBIT A

CONSTRAINTS ANALYSIS

MIDDLE GREEN VALLEY

SOLANO COUNTY CALIFORNIA

0' 400' 1,200' 1,600'

SCALE: 1" = 400' DATE: JULY 10, 2020

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