Memorandum

Date: April 11, 2023

To: James Haliburton, Director, BRW Architects, Inc.

From: Robert Carroll, Biologist

Subject: Biological Resources Due Diligence Memorandum at APN 0034-050-320 in Fairfield, CA

FirstCarbon Solutions (FCS) conducted a biological resources due diligence-level assessment for the proposed Archway Recovery Services Project (proposed project). This Biological Resources Due Diligence Memorandum (Memorandum) documents the existing conditions on the project site; discusses the suitability of the project site to support habitat for special-status species; evaluates the potential for the presence of development constraints related to sensitive or regulated biological resources; and documents any biological resource constraints that were identified from the proposed project and recommends measures as appropriate to avoid or minimize potential project impacts on sensitive and regulated biological resources.

PROJECT LOCATION AND PROJECT DESCRIPTION

This project site is located within an urbanized area in the City of Fairfield (Exhibit 1). Specifically, the project site consists of Accessor's Parcel Number (APN) 0034-050-320 and is located at the corner of Peach Tree Drive and Heath Drive (Exhibit 2). The project site is surrounded by dense residential development and commercial developments and is located within the *Fairfield North, California* United States Geological Surveys (USGS) 7.5-minute Topographic Quadrangle Map.

The proposed project consists of the design and construction of an approximately 16,900-square-foot, 2-story building on the 1.77-acre site. The proposed project would utilize approximately 56 percent of the 1.77 acres and would contain a 62-bed addiction recovery center with associated services including a commercial grade kitchen. The proposed plan includes the rehabilitation facility, parking, paving, sidewalks, and landscaped areas. Additionally, the covered parking along the southern border is anticipated to be covered with a solar panel array on the roof for on-site power generation.

METHODS

Analysis of the biological resources associated with the proposed project entailed a thorough review of relevant literature followed by a reconnaissance-level field survey to document existing site conditions

and identify biological resource constraints, including the potential for special-status species to occur on-site. The survey area included the entire project site as well as the immediate vicinity where access was possible.

Literature Review

A literature review included topographic maps and recent and historic aerial imagery, the Natural Resources Conservation Service (NRCS) soil survey database, special-status species observation databases, hydrology databases, and others, as detailed below.

Topographic Maps and Aerial Photographs

An FCS Biologist reviewed current topographic maps and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity. Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations.[1] Aerial photographs were reviewed to provide a perspective of site conditions relative to on-site and off-site land uses, preliminary plant community locations, and potential locations of wildlife movement corridors.

Soil Surveys

An FCS Biologist reviewed the NRCS Web Soil Survey to determine soil series (i.e., group of soils with similar profiles) and soil mapping units occurring at the project site.[2] An FCS Biologist reviewed habitat requirements pertaining to soils and substrates for special-status species to establish whether on-site conditions are suitable for occurrence of special-status plant and wildlife species.

Special-status Species Database Search

An FCS Biologist reviewed the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), a special-status species and plant community account database, the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system, and the California Native Plant Society Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California database for the *Fairfield North, California,* USGS 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangles.[3,4,5]

---

1 United States Environmental Protection Agency (EPA). 2023. Watershed Assessment, Tracking, and Environmental Results System (WATERS). Website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed March 2023.

2 Natural Resources Conservation Service (NRCS). 2023. United States Department of Agriculture (USDA). Soil Survey Official Soil Series Descriptions. Website: http://www.nrcs.usda.gov/. Accessed March 2023.

3 California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view /RareFind.aspx. Accessed March 2023.

4 United States Fish and Wildlife Service (USFWS). 2023. Information for Planning and Consultation (IPaC). Website: https://ecos.fws.gov/ipac/. Accessed March 2023.

5 California Native Plant Society (CNPS). 2020. California Native Plant Society Rare and Endangered Plant Inventory (CNPSEI). Website: http://www.rareplants.cnps.org/. Accessed March 2023.

State or Federally Protected Waters and Wetlands

An FCS Biologist queried the United States Environmental Protection Agency (EPA) Watershed Assessment, Tracking, and Environmental Results System (WATERS) database and aerial photography to identify potential natural drainage features and water bodies.[6] A preliminary assessment in the field was conducted to determine the location of any potential wetlands, existing drainages, and the limits of project-related grading activities to aid in determining whether a formal delineation of waters of the United States or State is necessary.

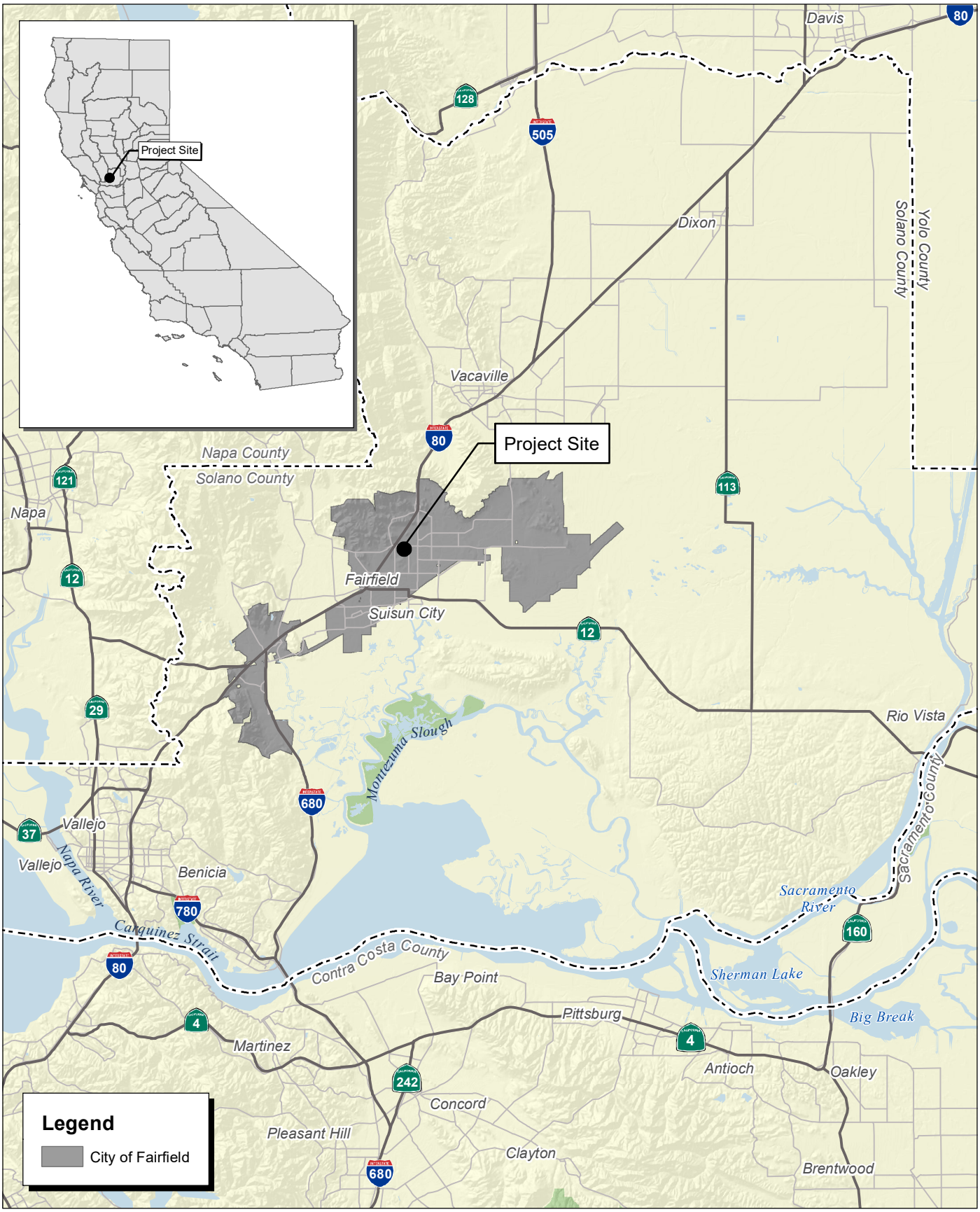
Protected Trees

An FCS Biologist reviewed applicable City ordinances pertaining to tree preservation and protective measures and their tree replacement conditions or permits required.

Reconnaissance-Level Field Survey

A reconnaissance-level field survey was conducted on March 9, 2023, by a qualified FCS Biologist. Weather conditions during the field survey were overcast, with an approximate temperature of 52°F (degrees Fahrenheit). Wind speeds averaged 4 miles per hour (mph). Notes were taken on general site conditions, vegetation, and suitability of habitat for various special-status elements. The object of the survey was to assess and characterize the biological conditions on-site, including an evaluation on whether sensitive biological resources, including suitable habitat for special-status plant and wildlife species are present. Representative site photographs can be found in Attachment B.

[6] United States Environmental Protection Agency (EPA). 2023. Watershed Assessment, Tracking and Environmental Results System (WATERS). Website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed March 2023.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

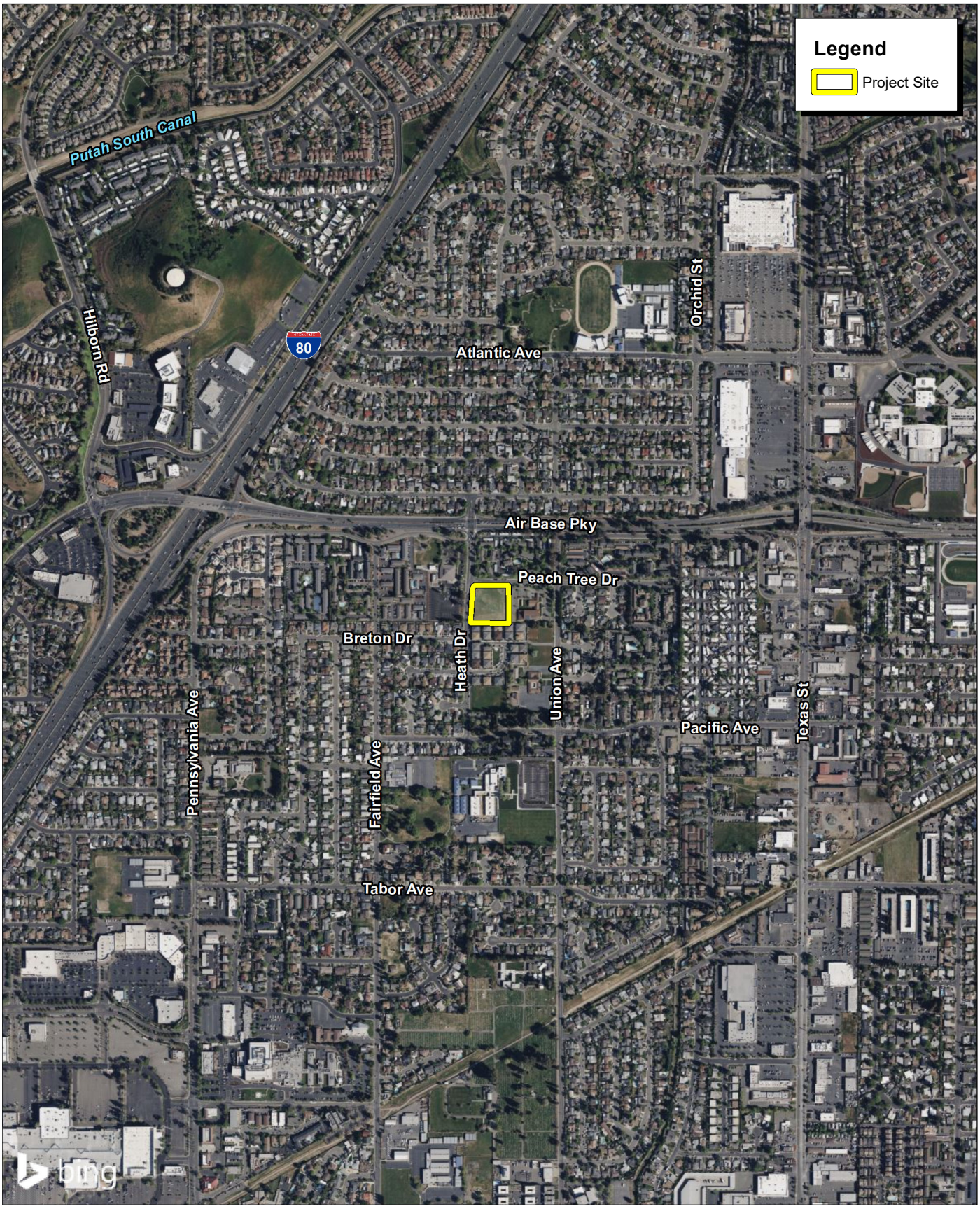
FIRSTCARBON SOLUTIONS™

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

41710007 • 04/2023 | 1_regional.mxd

BRW ARCHITECTS, INC.
PEACH TREE DRIVE SITE
BIOLOGICAL RESOURCES DUE DILIGENCE MEMORANDUM



Source: Bing Aerial Imagery. BRW Architects, 2023.

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000

Feet

Exhibit 2
Local Vicinity Map

41710007 • 04/2023 | 2_local_vicinity.mxd

BRW ARCHITECTS, INC.
PEACH TREE DRIVE SITE
BIOLOGICAL RESOURCES DUE DILIGENCE MEMORANDUM

RESULTS

The following section summarizes the results of the literature review and biological resources survey, including existing conditions, special-status species, State or federally protected waters or wetlands, wildlife movement corridors and nursery sites, protected trees, and others, as detailed below.

Existing Conditions

Soils and Topography

The project site is relatively flat and lies at an elevation between 68 and 72 feet above sea level. The southern and western edges of the site are gently sloped and are situated at a slightly lower elevation than the remainder of the project site.

Soils on the project site are mapped by the NRCS Web Soil Survey as Capay clay, 0 to 2 percent slopes, Major Land Resource Area (MLRA) 17.[7]

Vegetation Communities or Land Cover Types

Ruderal/Disturbed–1.70 Acres

Ruderal/Disturbed habitat is classified as areas that have been physically disturbed by human activity and are no longer recognizable as a native or naturalized vegetation association but continue to retain a soil substrate. Typically, if any vegetation is present, it is nearly exclusively composed of non-native and/or invasive plant species that take advantage of disturbance, or show signs of past or present animal usage that precludes them from providing viable natural habitat for uses other than dispersal. Examples of disturbed land include areas that have been graded, land that is repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e., dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home-sites.

1.70 acres (Exhibit 3) of the project site consists of a ruderal/disturbed field dominated by non-native grasses and forbs, including field mustard (*Brassica rapa*), Shepard's purse (*Capsella bursa-pastoris)*, bromes (*Bromus spp*), common groundsel (*Senecio vulgaris)*, cheeseweed (*Malva parviflora)*, spring vetch (*Vicia sativa)*, ribwort plantain (*Plantago lanceolata)*, and musk stork's-bill (*Erodium cicutarium)*. A row of ornamental trees along Heath Drive was observed during the field survey.

The project site is subject to frequent disturbance. Aerial photography shows evidence of prior grading during the fall of 2003 and ongoing disking and fire suppression activities (e.g., mowing). Additionally, tire tracks were observed during the field survey indicating the site is regularly used by motor vehicles.

[7] Natural Resources Conservation Service (NRCS). 2023. United States Department of Agriculture (USDA). Soil Survey Official Soil Series Descriptions. Website: http://www.nrcs.usda.gov/. Accessed March 2023.

Source: Bing Aerial Imagery. BRW Architects, 2023.

FIRSTCARBON SOLUTIONS™

60 30 0 60 Feet

Exhibit 3
Land Cover Vegetation

Source: Bing Aerial Imagery. BRW Architects, 2023.

FIRSTCARBON SOLUTIONS™

60 30 0 60 Feet

Exhibit 4
Impact Map

Potential Seasonal Wetland–0.06 Acre

A 0.06 acre potential seasonal wetland was observed on the western edge of the project site, as shown in Exhibit 3. Several wetland indicators were observed in the field and included the presence of hydrophytic vegetation in the form of willow dock (Rumex salicifloius), a facultative wetland species. This area also contained standing water, evidence of algal matting, and a water-stained fence that borders the western boundary of the project site. Additionally, soils exhibited redoximorphic features within the top 12 inches of the soil substrate.

Wildlife

The site may provide habitat for generalist and opportunistic wildlife species that are able to tolerate high levels of habitat disturbance, including skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), American crow (*Corvus brachyrhynchos*), and others. Wildlife observed during the field survey was limited to avian species commonly found in urban areas and included mourning dove (*Zenaida macroura*), house sparrow (*Passer domesticus)*, and American crow. Additionally, the trees located on-site and the immediate vicinity could provide suitable habitat for migratory or resident nesting birds. No signs of bat roosts were observed during the field survey, and it is unlikely that the trees on-site would provide roosting habitat.

Special-Status Species

A review of the CNDDB, CNPS, and IPaC Inventories determined that 48 special-status plant species and 37 special-status wildlife species have been recorded within the regional vicinity of the project site. The parameters of these search queries included an area consisting of the *Fairfield North, California*, USGS 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangles (regional vicinity). FCS evaluated each of these species' potential to occur on the project site (Special-Status Species Evaluation; Attachment A). This evaluation includes each species' status, required habitat, and a summary analysis of the potential for each of these species to occur within the project site. Because of the disturbed state of most of the project site and the lack of suitable habitat, many of the species evaluated do not have potential to occur. Special-status species that have at least low potential to occur include burrowing owl and other nesting birds, as discussed below.

Special-status Plant Species

The project site includes ruderal/disturbed habitat and a potential seasonal wetland. The site does not contain suitable habitat (Attachment A; Table 1) for rare plant species, which would require valley grasslands, cismontane woodlands, chaparral, swamps, marshes, serpentine-derived substrate, or outcrops. No special-status plant species or other habitat conditions supporting sensitive plant species were observed during the field survey. Therefore, it is reasonable to conclude that no special-status plant species occur on the project site.

Special-status Wildlife

The only special-status wildlife species with the potential to occur on-site is burrowing owl (*Athene cunicularia*), and other protected nesting birds (Attachment A; Table 2). The project site generally lacks specific habitat conditions and dispersal opportunities to support special-status wildlife species. The required habitat types for these species include sufficiently large and suitable woodland, grassland, specific native hostplants, saltmarsh/estuarine, or suitable freshwater aquatic habitats, or a combination thereof. None of these habitat types or conditions are present on the project site or adjacent areas. Additionally, the project site lacks dispersal opportunities from regionally occurring special-status wildlife species populations by large swaths of surrounding developments. No special-status wildlife species were observed during the field survey. However, potential impacts to burrowing owl and other protected nesting birds would be considered significant if an active nest or burrow were impacted during project construction. Therefore, potential impacts to burrowing owl and protected nesting birds are addressed below.

Burrowing Owl

The burrowing owl is a California "species of special concern." Its nest, eggs, and young are also protected under California Fish and Game Code (FGC §§ 3503, 3503.5, and 3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10.13).

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically California ground squirrel (*Otospermophilus beecheyi*) burrows, for nesting and cover. They may also on occasion dig their own burrows or use man-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the entrances of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

The closest CNDDB record was documented 1.1 miles north of the project site (CNDDB Occurrence No. 102). No burrowing owls or signs of burrowing owl were observed during the field survey analysis in March 2023. No ground squirrel burrows suitable for burrowing owl were present within the site.

It cannot be ruled out that burrowing owl may appear on-site under certain circumstances before start of construction and could potentially be impacted by the proposed project. Out of an abundance of caution, absence of burrowing owl should be confirmed through a pre-construction survey (and owl protection buffers if found).

Protected Functional Groups

Nesting birds are groups of avian species that are not listed as endangered, rare, or threatened but are protected under federal and State law under certain conditions, as described below.

Nesting Birds

The active nests of most bird species are protected by federal and/or State law (MBTA and Fish and Game Code). Species that are protected pursuant to MBTA are listed by the USFWS.[8] Nests are generally defined as being "active" if they contain eggs or altricial young. The project site contains trees that provide suitable habitat for protected migratory or native resident nesting bird species relatively tolerant of human disturbance. Therefore, construction activities that adversely affect the nesting success of nesting birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds constitute a violation of State and federal laws.

Project-related activities that occur during the breeding season could be constrained through the presence of active nests within the immediate vicinity of the project site. If tree removal or ground disturbance activities are scheduled to commence during the breeding season (February 1 through August 31), pre-construction bird surveys should be conducted by a qualified biologist to identify possible nesting activities. A construction-free buffer of suitable dimensions must be established around any active nests for the duration of the project or until it has been determined that the chicks have fledged.

State or Federally Protected Waters and Wetlands

Based on the preliminary analysis and field indicators observed, the western perimeter of the project area contains a potential seasonal wetland. These field indicators would support the conclusion that this area would meet the United States Army Corp of Engineers (USACE) criteria of a seasonal wetland. However, this area does not have a visible surface connection to an aquatic feature ("significant nexus") and should therefore be considered isolated. Additionally, this potential wetland appears to be a direct result of previous anthropogenic (e.g., grading and compaction) activities, including the construction of Heath Drive, which further constricts drainage on the project site.

Therefore, FCS proposes that the seasonal wetlands on-site are potentially not jurisdictional as waters of the United States due to the lack of a significant nexus to a Traditional Navigable Water of the United States. However, these features are likely jurisdictional as waters of the State. Based on the details provided above, FCS recommends the project applicant conduct a formal Jurisdictional Delineation (JD) during the blooming season (e.g., April, May) and submit the JD to the USACE and Regional Water Quality Control Board (RWQCB) for a jurisdictional determination. Please note that a final jurisdictional determination regarding the jurisdictional status of the seasonal wetland on-site can only be made by the USACE and the RWQCB.

[8] United States Fish and Wildlife Service (USFWS). 2023. Website: https://www.federalregister.gov/documents/2020/04/16/2020-06779/general-provisions-revised-list-of-migratory-birds. Accessed March 2023.

Protected Trees

Trees are regulated by the City of Fairfield under Section 25.36 of the City's Municipal Code. The proposed project would likely require the removal of one or more trees to accommodate the buildout of the project site. Tree removal and preservation should adhere to the City's tree ordinance. If a tree removal permit is required, replacement of removed trees will be required as part of the permitting process.

CONCLUSION

In summary, construction of the proposed project may be constrained by the potential presence of burrowing owls, nesting birds, and/or the potential seasonal wetland within the western edge of the project site. A tree removal permit from the City may also be required if the removal of existing City protected trees occurs.

Focused pre-construction surveys should be completed to determine the extent to which, if at all, burrowing owls and nesting birds could constrain the timing of project construction. Remedial measures (implementation of burrow/nest buffers) may be taken that would avoid impacts to these species, if they are determined to be present on the site, to a less than significant level.

A formal JD is recommended to document and quantify the extent of potentially jurisdictional waters within the project site in coordination with the USACE and RWQCB.

Attachment A:
Special-status Species Tables

Table 1: Special-status Plant Species Evaluation

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Agrostis hendersonii Henderson's bent grass	—	—	3.2	Valley and foothill grassland, vernal pools. Moist places in grassland or vernal pool habitat. Elevation: 65-1030 m.	**None**: Lack of playas or vernal pools on-site to offer habitat value.
Astragalus tener var. tener alkali milk-vetch	—	—	1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. Elevation: 0-170 m.	**None:** The site is heavily disturbed and does not contain some suitable habitat in the form of vernal pools, alkali flats, or alkali playa.
Atriplex cordulata var. cordulata heartscale	—	—	1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps Elevation: 1–305m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Atriplex depressa brittlescale	—	—	1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkali clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. Elevation: 1-325 m. Blooming period: April-October	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Atriplex persistens vernal pool smallscale	—	—	1B.2	Alkaline vernal pools. Elevation: 3-115 m. Blooming period: June-October	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Balsamorhiza macrolepis big-scale balsamroot	—	—	1B.2	Chaparral, cismontane woodland and valley and foothill grassland. Sometimes occurs in serpentinite soils. Elevation: 45-1555 m. Bloom period: March-June.	**None:** The project site does not contain suitable chaparral/cismontane or grassland habitat or serpentine soils to support this species.
Brodiaea leptandra narrow-anthered brodiaea	—	—	1B.2	Monocot perennial herb found in open mixed-evergreen forest, chaparral, and gravelly soils. Elevation: 40-610 m. Bloom period: May–July. 70–610 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Carex lyngbyei Lyngbye's sedge	—	—	2B.2	Marshes and swamps (brackish or freshwater). Elevation: 0-200 m. Bloom period: April-August	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Castilleja affinis var. neglecta Tiburon paintbrush	FE	ST	1B.2	Valley and foothill grassland. Rocky serpentine sites. Elevation: 120-400 m. Bloom period: April–June	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Castilleja ambigua var. meadii Mead's owls-clover	—	—	1B.1	Vernal pools, meadows and seeps. This plant seems to prefer soils of volcanic origin and tend to have high clay content and be gravelly. Elevation: 450-475 m. Bloom period: April-May	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Ceanothus purpureus holly-leaved ceanothus	—	—	1B.2	Chaparral, cismontane woodland on volcanic substrates or slopes. Elevation: 140-720 m. Bloom period: February-April	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Centromadia parryi ssp. parryi pappose tarplant	—	—	1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernally mesic, often alkaline sites. Elevation: 1-500 m. Blooming period: March-November	**None:** The site is heavily disturbed and is regularly mowed and does not contain chaparral, coastal prairies, meadows and seeps or coastal salt marshes.
Chloropyron molle ssp. hispidum hispid salty bird's-beak	—	—	1B.1	Meadows and seeps, playas, valley and foothill grassland. In damp alkaline soils, especially in alkaline meadows and alkali sinks with *Distichlis*. Elevation: 5-155 m. Blooming period: June-September	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Chloropyron molle ssp. molle soft salty bird's-beak	FE	SR	1B.2	Coastal salt marsh. In coastal salt marsh with Distichlis, Salicornia, Frankenia, etc. Elevation: 0-5 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Cicuta maculata var. bolanderi Bolander's water-hemlock	—		2B.1	Marshes and swamps. In fresh or brackish water. Elevation: 0-20 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Cirsium hydrophilum var. hydrophilum Suisun thistle	FE	—	1B.1	Upper reaches of tidal marshes and wet bogs associated with Typha, Scirpus, Juncus, and Distichlis. Elevation: 0-65 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Delphinium recurvatum recurved larkspur	—	—	1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. Elevation: 3-790 m. Blooming period: March-June	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Downingia pusilla dwarf downingia	—	—	2B.2	Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. Elevation: 1-490 m. Blooming period: March–May	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Erigeron greenei Greene's narrow-leaved daisy	—	—	1B.2	Perennial herb found in chaparral (serpentinite or volcanic) Elevation: 80-1005 m Blooming period: May-September	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Eriogonum truncatum Mt. Diablo buckwheat	—	—	1B.1	Chaparral, coastal scrub, valley and foothill grassland. In dry, exposed clay or sandy substrates. Elevation: 105-350 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Eryngium jepsonii Jepson's coyote-thistle	—	—	1B.2	Vernal pools, valley and foothill grassland. Of on clay. Elevation: 3-305 m. Blooming period: April-August	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Extriplex joaquinana San Joaquin spearscale	—	—	1B.2	Chenopod scrub, meadows and seeps, Playas, Valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. Elevation: 0-800 m.	**None**: The project site does not contain Chenopod scrub, meadows, or foothill grassland habitat to support this species.
Fritillaria pluriflora adobe-lily	—	—	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Usually on clay soils; sometimes serpentine. Elevation: 45-945 m. Blooming period: February-April	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Hesperolinon breweri Brewer's western flax	—	—	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. Elevation: 195-910 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Hesperolinon sharsmithiae Sharsmith's western flax	—	—	1B.2	Chaparral on serpentinite substrates Elevation: 18-670 m. Bloom period: May–July	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Isocoma arguta Carquinez goldenbush	—	—	1B.1	Valley and foothill grassland. Alkaline soils, flats, lower hills. On low benches near drainages and on tops and sides of mounds in swale habitat. Elevation: 1-50 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Lasthenia glabrata ssp. coulteri Coulter's goldfields	—	—	1B.1	Dicot annual herb found in coastal salt marshes, playas, and vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. Elevation: 1-1200m. Bloom period: February-July	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. The site is surrounded by developments.
Lasthenia conjugens Contra Costa goldfields	FE	—	1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland, swales, low depressions, in open grassy areas. Elevation 1-450 m.	**None**: Lack of suitable habitat and high level of development at site preclude presence. Lack of vernal pools and cismontane woodlands on-site. Historic occurrence of this species was recorded 2.5 miles from the project site.
Lathyrus jepsonii var. jepsonii Delta tule pea	—	—	1B.2	Marshes and swamps. In freshwater and brackish marshes. Often found with Typha, Aster lentus, Rosa californica, Juncus spp., Scirpus, etc. Usually on marsh and slough edges. Elevation: 0-5 m.	**None**: Lack of suitable habitat and high level of development at site preclude presence. Lack marshes and swamps and brackish marshes on-site. Recent occurrence of this species was recorded 2.5 miles south from the project site.
Legenere limosa legenere	—	—	1B.1	Vernal pools and in beds of vernal pools. Elevation: 1-1005 m.	**None:** The site does not contain suitable habitat for this species including vernal pools. The site is also heavily disturbed.
Leptosiphon jepsonii Jepson's leptosiphon	—	—	1B.2	Dicot annual herb found in open to partially shaded grassy slopes. On volcanic soils or the periphery of serpentine substrates. Elevation: 100–570 m. Blooming period: March–May.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Lilaeopsis masonii Mason's lilaeopsis	—	SR	1B.1	Marshes and swamps, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. In brackish or freshwater. Elevation: 0-10 m.	**None**: Lack of suitable habitat and high level of development at site preclude presence. Lack marshes and swamps and riparian scrub on-site. Recent occurrence of this species was recorded 2.5 miles south from the project site.
Microseris paludosa marsh microseris	—	—	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation: 3-610 m. Bloom period: April–June (July)	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Navarretia leucocephala ssp. bakeri Baker's navarretia	—	—	1B.2	Cismontane woodland, meadows and seeps, vernal pools and swales on adobe or alkaline soils Elevation: below 1,700 m. Bloom period: April-July	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Navarretia leucocephala ssp. pauciflora few-flowered navarretia	FE	ST	1B.1	Vernal pools. Volcanic ash flow, and volcanic substrate vernal pools. Elevation: 425-855 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Orcuttia inaequalis San Joaquin Valley Orcutt grass	FT	SE	1B.1	Vernal pools. Elevation: 10-755 m. Blooming period: April-September	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Plagiobothrys hystriculus bearded popcornflower	—	—	1B.1	Vernal pools, valley and foothill grassland. Elevation: 1-275 m. Blooming period: April-May	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Puccinellia simplex California alkali grass	—	—	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. In alkaline and vernally mesic soils, flats, and margins. Elevation: 2-930 m. Blooming period: March–May	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Rhynchospora californica California beaked-rush	—	—	1B.1	Bogs and fens, open marshes and swamps, lower montane coniferous forest, meadows and freshwater seeps. Elevation: 45-270 m. Bloom period: May–July	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Sidalcea hickmanii ssp. napensis Napa checkerbloom	—	—	1B.1	Chamise chaparral, rocky volcanic soil. Elevation: 400-600 m. Bloom period: April–June	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Sidalcea keckii Keck's checkerbloom	FE	—	1B.1	Cismontane woodland, valley and foothill grassland. Grassy slopes in blue oak woodland. On serpentine-derived, clay soils, at least sometimes. Elevation: 85-505 m. Blooming period: April-May	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Spergularia macrotheca var. longistyla long-styled sand-spurrey	—	—	1B.2	Marshes and swamps, meadows and seeps. Alkaline. Elevation: 0-220 m.	**None**: Lack of suitable habitat and high level of development on-site preclude presence. Lack of marshes or swamps on-site.
Stuckenia filiformis ssp. alpina northern slender pondweed	—	—	2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. Elevation: 5-2325 m.	**None:** The project site does not contain marsh or swamp habitat to support this species.
Symphyotrichum lentum Suisun Marsh aster	—	—	1B.2	Marshes and swamps (brackish and freshwater). Most often seen along sloughs with Phragmites, Scirpus, blackberry, Typha, etc. Elevation: 0-15 m.	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Trichostema ruygtii Napa bluecurls	—	—	1B.2	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools. Often in sunny, open areas. Elevation: 30-600 m. Bloom period: June-October	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Trifolium amoenum two-fork clover	FE	—	1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite). Elevation: 5-415 m. Bloom period: April–June	**None**: Lack of suitable habitat and no recent occurrence of the species within the project area. Site is surrounded by developments.
Trifolium hydrophilum saline clover	—	—	1B.2	Marshes and swamps, valley and foothill grassland in mesic or alkaline soils, and vernal pools. Elevation: 0-300 m. Bloom period: April–June	**None**: Lack of marshes and swamps and necessary soil composition on-site to offer habitat value.

Scientific Name Common Name	Status			Habitat Description[4]	Habitat Value and Rationale[5]
	ESA[1]	CESA[2]	CRPR[3]		
Viburnum ellipticum oval-leaved viburnum	—	—	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 215-1400 m.	**None**: Lack of suitable habitat and high level of development on-site precludes presence. Lack of chaparral and cismontane woodland or coniferous forest habitat on-site.

Code Designations

[1] Federal Status: 2023 Endangered Species Act (ESA) Listing	[2] State Status: 2023 California Endangered Species Act (CESA) Listing	[3] California Rare Plant Rank (CRPR): 2023 CRPR Listing
ESU = Evolutionary Significant Unit is a distinctive population. **FE** = Listed as endangered under the Endangered Species Act. **FT** = Listed as threatened under the Endangered Species Act. **FC** = Candidate for listing (threatened or endangered) under the Endangered Species Act. **FD** = Delisted in accordance with the Endangered Species Act. **FPD** = Federally Proposed to be Delisted. **MBTA** = Protected by the Migratory Bird Treaty Act **—** = Not federally listed	**SE** = Listed as endangered under the California Endangered Species Act. **ST** = Listed as threatened under CESA. **SSC** = Species of Special Concern as identified by the CDFW. **FP** = Listed as fully protected under the Fish and Game Code. **CFG** = FGC =protected by Fish and Game Code 3503.5 **CR** = Rare in California. **—** = Not State-listed	**Rank 1A** = Plants species that presumed extinct in California. **Rank 1B** = Plant species that are rare, threatened, or endangered in California and elsewhere. **Rank 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere. **Rank 3** = Plants about which we need more information–A Review List **Rank 4** = Plants of limited distribution–A Watch List **Blooming period:** Months in parentheses are uncommon.

Notes:

[4] **Habitat Description**: Habitat description adapted from CNDDB and CNPS online inventory or other specified source.

[5] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 5 or other specified source.

Sources:

California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed March 2023.

California Native Plant Society (CNPS). 2023. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed March 2023.

California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/. Accessed March 2023.

Table 2: Special-status Wildlife Species Evaluation

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Amphibians				
Ambystoma californiense pop. 1 California tiger salamander	FT	ST	Need underground refuges, especially ground squirrel burrows, and vernal pools, ponds, or other standing water bodies for breeding.	**None**: There is no recorded occurrence of this species on-site or within the project area. There is also little possibility for dispersal due to dense development surrounding the site. Therefore, the project site has no habitat value for this species.
Rana boylii pop. 1 foothill yellow-legged frog-north coast DPS	—	SSC	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. Needs at least 15 weeks to attain metamorphosis.	**None:** The site does not contain suitable habitat to support this species.
Rana draytonii California red-legged frog	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development	**None**: There is no recorded occurrence of this species on-site or within the project area. There is also little possibility for dispersal due to dense development surrounding the site. The project site does not contain riparian vegetation. Therefore, project site has no habitat value for this species.
Birds				
Agelaius tricolor Tricolored blackbird	—	ST SSC	Breeds near fresh water in dense emergent vegetation.	**None:** The site does not contain dense emergent vegetation to support this species. Recent occurrence of this species was recorded 3.2 miles east of the project site.
Ammodramus savannarum grasshopper sparrow	—	SSC	Found in 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. A loosely colonial species when nesting.	**None:** The site does not contain suitable habitat to support this species.
Aquila chrysaetos Golden eagle	—	FP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert	**None:** The site does not contain suitable habitat to support this species.
Asio flammeus short-eared owl	—	SSC	Occur in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	**None:** The site does not contain suitable habitat to support this species.

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Athene cunicularia Burrowing owl	—	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low:** Historic occurrence of this species was located 1.1 miles north of the project site. The site contains marginal grassland habitat; however, no California ground squirrel burrows were observed.
Buteo swainsoni Swainson's hawk	—	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savanna. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**None:** The project site does contain riparian areas adjacent to large agricultural spaces for nesting. Additionally, the project site lacks adequate foraging habitat to support this species. Additionally, the project site is surrounded by previous developments further limiting the potential of this species to occur on-site. Higher quality nesting and foraging habitat outside the urbanized portion of the City.
Buteo regalis ferruginous hawk	—	WL	Grassland and arid shrublands with an abundance of prey species, such as pocket gophers, black-tailed jackrabbits, and desert cottontails. Will winter near cultivated fields that have an abundance of pocket gophers.	**None:** The site does not contain suitable habitat to support this species. Site is surrounded by developments and does not contain grassland habitat with an abundance of prey to support this species.
Circus hudsonius northern harrier	—	SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**None**: The site lacks meadows, coastal salt, or freshwater marsh habitat to support this species.
Coturnicops noveboracensis yellow rail	—	SSC	Shallow marshes, and wet meadows; in winter, drier fresh water and brackish marshes, as well as dense, deep grass, and rice fields.	**None:** The site does not contain suitable aquatic habitat for this species.
Elanus leucurus white-tailed kite	—	FP	Grasslands and open coastal scrub in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous, open stages of most habitats mostly in cismontane California.	**None:** The site does not contain foraging habitat large enough to provide habitat value. Site is surrounded by dense human development.
Falco peregrinus anatum American peregrine falcon	—	WL	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**None:** The site does not contain suitable foraging or breeding habitat including scrub or grassland terrain or cliffs.
Geothlypis trichas sinuosa saltmarsh common yellowthroat	—	SSC	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**None**: Lack of marsh habitat precludes this species.

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Icteria virens yellow-breasted chat	—	SSC	Occurs and nests in riparian thickets of willow and other bushy tangles near watercourses. Long-distance migrant.	**None:** The site does not contain riparian thickets or other suitable aquatic resources to support this species.
Laterallus jamaicensis coturniculus California black rail	—	FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**None:** The project site does not contain marsh habitat or saltwater marshes bordering a large bay. The dense developments surrounding the project site further precludes this species.
Melospiza melodia pusillula Alameda song sparrow	—	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	**None:** The project site does not contain Salicornia marsh habitat to support this species.
Rallus obsoletus obsoletus California Ridgway's rail	FE	FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**None:** The project site does not contain salt water/brackish marsh habitat with pickleweed to support this species.
Fish				
Acipenser medirostris pop. 1 green sturgeon-southern DPS	FT	—	Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder.	**None:** The site does not contain suitable aquatic habitat to support this species.
Pogonichthys macrolepidotus Sacramento splittail	—	SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	**None:** The site does not contain suitable aquatic habitat to support this species.
Spirinchus thaleichthys longfin smelt	FC	ST	Longfin smelt spend their adult life in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn. Spawning occurs primarily from January through March, after which most adults die.	**None:** The site does not contain suitable aquatic habitat to support this species.

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE	—	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	**None:** The site does not contain required aquatic features, including vernal pools, to support this species.
Branchinecta lynchi vernal pool fairy shrimp	FT	—	Small vernal pools with cool water (10ºC), moderate alkalinity and conductivity, and less than 1 m deep.	**None:** The site does not contain required aquatic features, including vernal pools, to support this species.
Danaus plexippus plexippus pop. 1 monarch-California overwintering population	FC	—	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**None:** The site does not contain wind protected tree groves to support this species.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT	—	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries. Common in riparian scrub.	**None:** Historic occurrence of this species was found 1.25 mi away from the project site. However, the site does not contain blue elderberry bushes or riparian scrub.
Elaphrus viridis Delta green ground beetle	FT	—	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis AFB. Prefers the sandy mud substrate where it slopes gently into the water, with low-growing vegetation, 25-100 percent cover.	**None:** The site does not contain suitable habitat to support this species.
Lepidurus packardi vernal pool tadpole shrimp	FE	—	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid	**None:** The site does not contain suitable habitat to support this species.
Speyeria callippe callippe callippe silverspot butterfly	FE	—	Restricted to the northern coastal scrub of the San Francisco Peninsula. Hostplant is *Viola pedunculata*. Most adults found on east facing slopes; males congregate on hilltops in search of females.	**None:** The site does not contain suitable habitat to support this species.

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Mammals				
Antrozous pallidus Pallid bat	—	SSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures and include trees and buildings. Species is very sensitive to disturbance of roosting sites.	**None**: Lack of suitable roosting habitat and high level of disturbance at site.
Corynorhinus townsendii Townsend's big-eared bat	—	SSC	Throughout California in a wide variety of habitats. Most common in areas associated with mixed conifer forest, desert scrub, or pine forest habitat. Roosts in caves, mines, and buildings. Extremely sensitive to human disturbance.	**None**: Lack of suitable roosting habitat and high level of disturbance on-site.
Dipodomys venustus elephantinus big-eared kangaroo rat	—	SSC	Chaparral-covered slopes of the southern part of the Gabilian Range, in the vicinity of the Pinnacles. Forages under shrubs and in the open. Burrows for cover and for nesting.	**None:** The site does not contain any foraging habitat such as chaparral slopes or shrublands. No burrows were observed on-site.
Lasiurus blossevillii western red bat	—	SSC	Occurs in cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**None**: The project site does not contain woodland or forest features to support this species.
Reithrodontomys raviventris salt-marsh harvest mouse	—	FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	**None:** The project site does not contain pickleweed or marsh habitat to support this species.
Sorex ornatus sinuosus Suisun shrew	—	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	**None:** The site does not contain suitable habitat to support this species.
Taxidea taxus American badger	—	SSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils, specifically grassland environments. Natal dens occur on slopes.	**None**: The site does not contain suitable habitat to support this species.

Scientific Name Common Name	Status		Habitat Description[3]	Habitat Value and Rationale[4]
	ESA[1]	CESA/FGC[2]		
Reptiles				
Emys marmorata western pond turtle	—	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 foot elevation.	**None.** The project site does not contain marsh, river, stream, or irrigation ditches to support this species.

Code Designations

[1] Federal Status: 2023 Endangered Species Act (ESA) Listing	[2] State Status: 2023 California Endangered Species Act (CESA) Listing
ESU = Evolutionary Significant Unit is a distinctive population.	**SE** = Listed as endangered under CESA.
FE = Listed as endangered under the Endangered Species Act.	**ST** = Listed as threatened under CESA.
FT = Listed as threatened under the Endangered Species Act.	**SSC** = Species of Special Concern as identified by the CDFW.
FC = Candidate for listing (threatened or endangered) under the Endangered Species Act.	**FP** = Listed as fully protected under the Fish and Game Code.
FD = Delisted in accordance with the Endangered Species Act.	**CFG** = FGC = protected by Fish and Game Code 3503.5
FPD = Federally Proposed to be Delisted.	**CR** = Rare in California.
MBTA = protected by the Migratory Bird Treaty Act	**—** = Not State-listed
— = Not federally listed	

Notes:
[3] **Habitat Description**: Habitat description adapted from CNDDB or other specified source.
[4] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 5 or other specified source.

Sources:
California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed March 2023.

California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/. Accessed March 2023.

Attachment B:
Site Photographs

Photograph 1: Potential seasonal wetland, looking south.

Photograph 2: Algal matting and surface flow.

Photograph 3: Saturated soil pit.

Photograph 4: Northeastern corner of site, looking southwest.

September 6, 2023

Tendai Mtunga
City of Fairfield
1000 Webster Street 2nd Floor
Fairfield, CA 94533

Subject: **Mitigation Measures in Response to FCS Biological Due Diligence Memorandum**

Dear Tendai:

Pursuant to our call on August 29, 2023, FCS has provided draft mitigation measure language to the City of Fairfield to assist in writing an IS/MND for the proposed Archway Recovery Facility. The mitigation measures provided herein address potential impacts to burrowing owls, nesting birds, and a potential seasonal wetland.

Sincerely,

Robert Carroll, Senior Biologist
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

UNITED STATES

T +1 888 826 5814
T +1 714 508 4100
F +1 714 508 4110
E info@fcs-intl.com

Irvine
250 Commerce
Suite 210
Irvine, CA 92602

Bay Area
2999 Oak Road
Suite 250
Walnut Creek, CA 94597

Central Valley
7726 N. First Street
#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

CANADA

UNITED KINGDOM

PORTUGAL

FRANCE

KENYA

AUSTRALIA

PHILIPPINES

CHINA

MALAYSIA

SINGAPORE

Draft Mitigation Measure Language

Burrowing owl:

Prior to any ground disturbance, pre-construction surveys for burrowing owl shall be conducted by walking the entire project site. The pre-construction surveys shall be conducted within 14 days prior to the onset of any ground-disturbing activities. Surveys shall be conducted by a qualified biologist following California Department of Fish and Wildlife (CDFW) 2012 staff report survey methods. If no burrowing owls are detected during the pre-construction survey, no further action is necessary. If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed in accordance with previously described methods.

If burrowing owls are found to occupy the project site during the nonbreeding season (September 1 to January 31), occupied burrows shall be avoided by establishing a no-disturbance buffer zone a minimum of 100 feet around the burrow. Buffers may be increased to address site-specific conditions using the impact assessment approach described in the CDFW 2012 staff report. If a qualified biologist determines the location of an occupied burrow/s may be impacted even with the implementation of the 100-foot buffer, or the burrow(s) are in a location(s) on the project site where a buffer cannot be established without preventing the proposed project from moving forward, then a passive relocation effort may be instituted to relocate the individual(s) out of harm's way pursuant to a Burrowing Owl Exclusion Plan prepared in accordance with the CDFW 2012 staff report. The applicant shall notify CDFW at least 14 days prior to the implementation of the Burrowing Owl Exclusion Plan.

If burrowing owl are found to be present during the breeding season (February 1 to August 31), the proposed project ground-disturbing activities shall follow the CDFW 2012 staff report recommended avoidance protocol whereby occupied burrows shall be avoided with a no-disturbance buffer of between 50 meters and 500 meters depending on time of year and disturbance level, as described in the 2012 CDFW staff report. This breeding season buffer zone shall remain until the young have fledged or an unsuccessful nesting attempt is documented.

Nesting birds:

Removal of trees shall be limited to only those necessary to construct the proposed project as reflected in the relevant project approval documents. If the proposed project requires vegetation to be removed during the nesting season (February 1 to August 31), pre-construction surveys shall be conducted no more than 7 days prior to the start of ground or vegetation disturbance (including tree removal) to determine whether or not active nests are present.

If an active nest is located during pre-construction surveys, a qualified biologist shall determine an appropriately sized avoidance buffer based on the species and anticipated disturbance level. (CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors.) A qualified biologist shall delineate the avoidance buffer using Environmentally Sensitive Area fencing, pin flags, and/or yellow caution tape. The buffer zone shall be maintained around the active nest site(s) until the young have fledged and are foraging independently, as confirmed by a qualified biologist. No construction activities or construction foot traffic is allowed to occur within the avoidance buffer(s).

In consultation with USFWS or CDFW (as appropriate), the qualified Biologist shall monitor the active nest during construction activities and modify the protection zone accordingly to prevent project-related nest disturbance, until the young have fledged.

Seasonal wetland:

Prior to the fill of any potentially jurisdictional water as part of the proposed project, the project applicant shall consult with the United States Army Corps of Engineers (USACE) to determine the extent, if at all, that waters of the United States may be impacted by the proposed project. The applicant shall obtain a Section 404 CWA permit for impacts to waters of the United States, if required. The applicant shall also obtain a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB). This permit and certification shall be obtained prior to issuance of grading permits for the implementation of the proposed project.

If the seasonal wetland is found to be exempt from being regulated by the USACE as a water of the United States, the applicant shall consult with the RWQCB and obtain a WDR if deemed necessary. The applicant shall design the proposed project to the extent feasible, to result in no net loss of functions and values of waters of the United States/State by incorporating impact avoidance, impact minimization, and/or compensatory mitigation for the impact, as determined in the CWA 404/401 or WDR. Compensatory mitigation may consist of (1) obtaining credits from a mitigation bank; (2) making a payment to an in-lieu fee program that will conduct wetland, stream, or other aquatic resource restoration, creation, enhancement, or preservation activities; and/or (3) providing compensatory mitigation through an aquatic resource restoration, establishment, enhancement, and/or preservation activity. This final type of compensatory mitigation may be provided at or adjacent to the impact site (i.e., on-site mitigation) or at another location, usually within the same watershed as the permitted impact (i.e., off-site mitigation). The project/permit applicant retains responsibility for the implementation and success of the mitigation project.