

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
song sparrow – “Suisun Population” <i>Melospiza melodia maxillaris</i>	BCC, SSC	Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and <i>Salicornia</i> ; also known to frequent tangles bordering sloughs.	No Potential [to nest]. The Study Area is located outside this subspecies’ range along Suisun Bay.
Swainson’s hawk <i>Buteo swainsoni</i>	ST, BCC	Summer resident in California’s Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	Present. During surveys conducted in 2018 WRA biologists identified two nests for this species within the Study Area. Two additional nests were observed during the same surveys in close proximity to the Study Area, but outside of the actual property boundary.
tricolored blackbird <i>Agelaius tricolor</i>	BCC, SSC, SC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs. Nesting area must be large enough to support about 50 pairs.	Moderate Potential [to nest]. There are records of the species within 5 miles of the Study Area, and likely breeding colonies within 10 miles (CDFW 2018a). Though the majority of the Study Area does not provide suitable habitat for the species, freshwater marshes with dense emergent vegetation on the margins of the Study Area, especially in the south, could potentially support habitat for a breeding colony. Current maintenance of much of the Liberty Farms area as managed wetlands could limit food availability during the nesting season, thus the restoration project would increase the chances that a colony would be found in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
western yellow-billed cuckoo <i>Coccyzus americanus</i>	FT, SE, BCC, FS sensitive	Summer resident, breeding in dense riparian forests and jungles, typically with early successional vegetation present. Utilizes densely-foliaged deciduous trees and shrubs. Eats mostly caterpillars. Current breeding distribution within California very restricted.	No Potential [to nest]. The Study Area does not contain the dense old-growth riparian forest required by this species.
western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, BCC, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	No Potential [to nest]. The Study Area does not contain sandy beaches, alkaline lakes or other such suitable habitat to support nesting by this species.
whimbrel <i>Numenius phaeopus</i>	BCC	Breeds in tundra habitat, from wet lowlands to dry heath. In migration, frequents various coastal and inland habitats, including fields and beaches. Winters in tidal flats and shorelines, occasionally visiting inland habitats.	No Potential [to nest]. This species does not nest in this portion of California (USFWS 2018a). The species can be found foraging in the area during winter migrations only. Because the species does not nest in the area, there is no potential to impact nesting by this species from the Project.
white-tailed kite <i>Elanus leucurus</i>	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	Moderate Potential [to nest]. This species typically uses grassland or agricultural fields like those within the Study Area for foraging. Additionally, scattered large trees throughout the area may provide nesting habitat for the species. No active nests for this species were observed during surveys by WRA; however, there is still a moderate potential for the species to nest in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
willet <i>Tringa semipalmata</i>	BCC	Inhabits open beaches, bayshores, marshes, mudflats, and rocky coastal zones. Nests inland on the ground along pond edges and other seasonal wetlands, or on raised sites near water, often in native grasslands.	No Potential [to nest]. This species does not nest in this portion of California (USFWS 2018a). The species can be found foraging in the area during winter migrations only. Because the species does not nest in the area, there is no potential to impact nesting by this species from the Project.
wrentit <i>Chamaea fasciata</i>	BCC	Year-round resident in coastal scrub and chaparral along the West Coast. Nests in many types of vegetation including California sage, coyote brush, blackberry, poison oak, coffeeberry, Douglas-fir, bush lupine, wild rose, valley oak, and wild grape.	Unlikely [to nest]. The Study Area does not contain scrub or chaparral which is more characteristic of the species habitat. The Study Area provides suboptimal habitat for the species, and while it may infrequently be observed in the area, it is unlikely to nest in the Study Area.
yellow warbler <i>Setophaga (Dendroica) petechia brewsteri</i>	BCC, SSC	Frequents riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Moderate Potential [to nest]. Willow riparian areas lining Lookout Slough and within portions of Liberty Farms provide potential nesting habitat for the species. Potential foraging habitat is also supported throughout the riparian and edge habitat as well.
yellow-billed magpie <i>Pica nuttalli</i>	BCC	Endemic to the Central Valley and central Coast Ranges. Favors open park-like areas with expanses of open ground, including oak savannah, orchards, and along stream courses. Large, dome-shaped stick nests are placed in trees.	Unlikely [to nest]. This species is not known to nest in this area of Solano County (Rippey et al 2014). Additionally, suitable nest trees are fairly uncommon except along waterways which are not typically favored nesting situations for the species. While the species has been observed on site, and may opportunistically forage in the Study Area, it is unlikely to nest at the site due to the absence of woodland habitat typical of the species nesting habitat requirements.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
yellow-breasted chat <i>Icteria virens</i>	SSC	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape.	Unlikely [to nest]. The Study Area does not contain dense riparian habitat to support foraging or nesting in this species. Additionally, this species is uncommon in the region and has very few documented nesting occurrences in Solano County (Rippey et al 2014; eBird 2017).
yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	SSC	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	Unlikely [to nest]. This species is not known to nest within this portion of Solano County (Rippey et al 2014). Individuals may winter with mixed flocks of blackbirds in the area; however, no nesting colonies have been documented within Solano or Yolo County (CDFW 2019). The Study Area is lacking suitable dense emergent wetlands bordering deep water characteristic of the species nesting habitat.
Reptiles and Amphibians			
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to estivation habitat.	Unlikely. This species was evaluated as part of the Solano County HCP and the Study Area was determined to be outside of the species known range within Solano County (Solano 2012). The species was not observed during field surveys either, and it is unlikely to occur in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
California tiger salamander <i>Ambystoma californiense</i>	FE/FT, ST, SSC	Inhabits grasslands, oak woodland and scrublands. Spends most of the year underground in mammal burrows and Adults utilize mammal burrows as estivation habitat.	Unlikely. The Study Area does not fall within the potential or known range of the species within Solano County (Solano 2012). The Study Area has been farmed as flood irrigated agriculture, a practice which is destructive to salamander habitat (Ford et al 2013). Additionally, the Study Area lies within the 100-year floodplain, an area which does not typically support the species due to loss of estivation habitat (FEMA 2017, Ford et al 2013).
giant garter snake <i>Thamnophis gigas</i>	FT, ST, RP	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	Present. During reconnaissance level eDNA surveys in 2018 this species was detected in Lookout and Sycamore Sloughs. Additionally, a specimen of this species was recorded in the CNDDDB on the roadway atop the boundary levee at the southeastern edge of the Study Area (CDFW 2018a).
western pond turtle <i>Actinemys marmorata</i>	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	Present. Within the slough complex surrounding the Study Area deep water habitat, foraging opportunities and basking sites such as downed trees and rocks are present and may support use by the species. Grassland habitat on the existing levees and within the Study Area provide potential nesting habitat.
Fish			

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
Chinook salmon, Central Valley fall/late fall-run Evolutionary Significant Unit (ESU) <i>Oncorhynchus tshawytscha</i>	SSC, NMFS	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles may remain in fresh water for 1 or more years before migrating downstream to the ocean	High Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are upstream of the Study Area; therefore, it is likely that they will pass through and forage in sloughs surrounding the Study Area during outmigrations. The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.
Chinook salmon, Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i>	FT, ST, NMFS	Anadromous, spending most of life cycle in the ocean. Federal listing includes populations spawning in the Sacramento River and its tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	High Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are upstream of the Study Area; therefore, it is likely that they will pass through and forage in sloughs surrounding the Study Area during outmigrations.
Chinook salmon, Sacramento River winter-run ESU <i>Oncorhynchus tshawytscha</i>	FE, SE, NMFS	Occurs in the Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 degrees C for spawning. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles typically migrate to the ocean soon after emergence from the gravel.	High Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are upstream of the Study Area; therefore, it is likely that they will pass through and forage in sloughs surrounding the Study Area during outmigrations. The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
coho salmon, central California coast ESU <i>Oncorhynchus kisutch</i>	FE, SE, NMFS	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	No Potential. This species has been extirpated from the waters of San Francisco Bay and its tributaries.
Delta smelt <i>Hypomesus transpacificus</i>	FT, SE	Endemic to the Sacramento Delta, where it is distributed from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. The delta smelt is a pelagic and euryhaline species	High Potential. Cache, Hass and Shag Sloughs that surround the Study Area are typical habitat used by adults and juveniles of this species. Nearby occurrences in CDFW trawls have confirmed the species is present in the Cache Slough Complex (CDFW 2017b). The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.
green sturgeon, southern Distinct Population Segment (DPS) <i>Acipenser medirostris</i>	FT, SSC NMFS	Spawn in the Sacramento River and the Klamath River. Spawn at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock. Spawn in deep pools or "holes" in large, turbulent, freshwater river mainstems. Adults live in oceanic waters, bays, and estuaries when not spawning. Species is known to forage in estuaries and bays.	Moderate Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are upstream of the Study Area within the Feather and Sacramento Rivers, therefore it is likely that the species will pass through or forage in sloughs surrounding the Study Area during outmigrations. The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
hardhead <i>Mylopharodon conocephalus</i>	SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Typically found with Sacramento Pikeminnow and Sacramento Sucker.	Unlikely. This species forages, rears and spawns in creeks or rivers with deep clear pools, and gravelly bottoms. These conditions are not present within or surrounding the Study Area.
longfin smelt <i>Spirinchus thaleichthys</i>	ST, FC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	High Potential. Cache, Hass and Shag Sloughs that surround the Study Area are typical habitat used by adults and juveniles of this species. Nearby occurrences in CDFW trawls have confirmed the species is present in the Cache Slough Complex (CDFW 2017b). The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.
Sacramento Splittail <i>Pogonichthys macrolepidotus</i>	SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Splittail are primarily freshwater fish, but are tolerant of moderate salinity and can live in water where salinity levels reach of 10-18 parts per thousand.	Present. During fisheries surveys in 2018 this species was observed within the irrigation ditches running throughout the Study Area. Nearby occurrences in CDFW trawls have also confirmed the species is present in the Cache Slough Complex (CDFW 2018b).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
steelhead - Central Valley DPS <i>Oncorhynchus mykiss</i>	FT, NMFS	Anadromous, spending most of life cycle in the ocean. Occurs in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	High Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are also upstream of the Study Area; therefore, it is likely that they will pass through and forage in sloughs surrounding the Study Area during outmigrations. The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.
tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Habitat is characterized by brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant. Restricted to waters with low to moderate salinities in California's coastal wetland habitats.	No Potential. This species has been extirpated from the waters of San Francisco Bay and its tributaries.
white sturgeon <i>Acipenser transmontanus</i>	SSC	Found in most estuaries along the Pacific coast. Adults in the San Francisco Bay Estuary system spawn in the Sacramento River and are not known to enter freshwater or non-tidal reaches of Estuary streams. Spawn May through June.	Moderate Potential. Cache, Hass and Shag Sloughs surround the Study Area and are used by juveniles of this species as rearing habitat. Typical spawning grounds for this species are upstream of the Study Area within the Sacramento and Feather Rivers, therefore it is likely that they will migrate through waters surrounding the Study Area during outmigrations. The existing levee structure and water diversion system with the Study Area; however, excludes this species from occurring within the interior aquatic features of the site.
Invertebrates			

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	SSI	<i>Anthicus antiochensis</i> is apparently extirpated from the type locality at Antioch Dunes. Stabilization of the dunes in the 1950s may have eliminated the loose, sandy substrate preferred by this species. In the early 1990s it was collected for the first time at several sites along the Sacramento River in Glenn, Tehama, Shasta, and Solano Counties, and from one site at Nicolas on the Feather River in Sutter County (Davis 1991). bare, unvegetated sand	No Potential. The Study Area is outside of the known range for this species.
California linderiella <i>Linderiella occidentalis</i>	SSI	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE, SSI	Two populations in San Bruno mountain and the Cordelia Hills are recognized. Hostplant is <i>Viola pedunculata</i> , which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	No Potential. The Study Area is outside of the very restricted range of this species and does not contain suitable habitat nor the host plant.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE, SSI, RP	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabits astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).
Delta green ground beetle <i>Elaphrus viridis</i>	FT, SSI, RP	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis Air Force Base. Prefers the sandy mud substrate where it slopes gently into the water, with low-growing vegetation, 25 to 100% cover.	No Potential. The Project does not contain vernal pools suitable to support this species. Additionally grazing, farming, duck hunting and flood irrigation are practices which diminish conditions required to support this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
midvalley fairy shrimp <i>Branchinecta meso Vallensis</i>	SSI	Known only from the Central Valley, primarily its central portions. Typically inhabits short-lived, grass-bottomed vernal pools and other seasonal water features.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	SSI	Small aquatic beetle known only from pond habitats scattered around the San Francisco Bay area, including Marin, Sonoma, Alameda, and Contra Costa counties. Extensive surveys from 1988 failed to locate this species. The locations of existing populations remain unknown (Hafernick 1989).	No Potential. The Study Area is outside of the species known range.
Sacramento anthicid beetle <i>Anthicus sacramento</i>	SSI	<i>Anthicus sacramento</i> is found in several locations along the Sacramento and San Joaquin rivers, from Shasta to San Joaquin counties, and at one site along the Feather River at Nicolaus. Inhabit sand slipfaces among bamboo and willow. Interior sand dunes and sand bars; has also been found in dredge spoil heaps	No Potential. The Study Area is not within the limited range for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT, SSI, RP	Occurs only in the central valley of California, in association with blue elderberry (<i>Sambucus</i> spp.). Prefers to lay eggs in elderberry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	Unlikely. Lands within the Study Area have been used for flood irrigated pasture and winter waterfowl management collectively for several decades. Land management, grazing practices, and levee maintenance result in frequent disturbance and alteration of vegetation within the Study Area. In 2018, focus surveys for elderberry (the species host plant) were conducted and only one small isolated group of elderberry shrubs were found on the outboard (flood side) of the levee, in an area devoid of a dominant riparian canopy vegetation layer. Surveys followed USFWS 2017 <i>Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle</i> , which included all areas within 50 m (165 ft) of the host plant. No exit holes of any type were observed in the elderberry shrubs; which only occurred in an area subject to flooding and within an area where levee maintenance frequently occurs as evident by riprap near the plants. Due to the extensive disturbance, isolation of the Study Area from documented occurrences, marginal host plant availability, and absence of exit holes, it is unlikely that the species would occur in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
Vernal pool andrenid bee <i>Andrena blennospermatis</i>	SSI	A solitary, ground-nesting bee found in upland areas near vernal pools. Its host plant is <i>Blennosperma spp.</i> and does not forage far from the host plant. Range is Contra Costa, El Dorado, Lake, Placer, Sacramento, San Joaquin, Solano, Sonoma, Tehama, and Yolo counties.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, SSI, RP	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood-irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Wildlife			
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE, SSI, RP	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.	No Potential. While occurrences of this species are recorded within 5-miles of the Study Area, they are restricted to higher elevation uplands to the north and west (CDFW 2018a). Uplands in these areas support vernal pools, which are required by the species. The Study Area is outside of both the historic and current distribution of vernal pools within Solano County (Solano 2012). Additionally, lands within the Study Area have been used for flood-irrigated pasture and winter waterfowl management collectively for several decades which are practices that eliminates use of an area as branchiopod habitat (USFWS 2007).
western bumble bee <i>Bombus occidentalis</i>	SSI	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2017). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	Unlikely. Lands within the Study Area have been used for flood-irrigated pasture and winter waterfowl management collectively for several decades. Land management, grazing practices, and levee maintenance result in frequent disturbance and minimize available small mammal burrows. Therefore, the Study Area is unlikely to support nesting by the species.

*** Key to status codes:**

EPA	Eagle Protection Act Species
FE	Federal Endangered
FT	Federal Threatened
FD	Federal Delisted
FC	Federal Candidate
BCC	USFWS Birds of Conservation Concern
SE	State Endangered
ST	State Threatened
SD	State Delisted
SC	State Candidate

SSC	CDFW Species of Special Concern
SSI	CDFW Special-Status Invertebrate
CFP	CDFW Fully Protected Animal
WBWG	Western Bat Working Group (High or Medium) Priority species
NMFS	Managed by the National Marine Fisheries Service

California Rare Plant Ranks:

Rank 1A	California Rare Plant Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	California Rare Plant Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2B	California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	California Rare Plant Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	California Rare Plant Rank 4: Plants of limited distribution (a watch list)

Threat Ranks for California Rare Plant Rank Plant Species

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 (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

APPENDIX D
SITE PHOTOGRAPHS

This page intentionally left blank



Photo 1. View facing northeast of tidal waters of Shag Slough along the eastern portion of the Study Area. Photograph taken from perimeter levee on August 27, 2018.



Photo 2. Developed land within the eastern portion of Liberty Farms. Photograph taken April 28, 2017 facing south from perimeter levee with tidal Shag Slough on left.



Photo 3. View of non-native grassland in northern portion of Liberty Farms, located centrally in the Study Area. Photograph taken April 5, 2015.



Photo 4. View facing north of coastal and valley freshwater marsh within Liberty Farms. Photograph taken August 27, 2018.



Photo 5. View facing west of terminus of non-tidal open waters of Lookout Slough with great valley mixed riparian on right. Photograph taken from perimeter levee in northeastern portion of the Study Area on April 5, 2018.



Photo 6. View facing east of non-tidal open waters of Lookout Slough with great valley mixed riparian in background. Photograph taken from perimeter levee in southwest portion of Study Area on July 28, 2017.



Photo 7. View facing northeast of tidal waters of Shag Slough along the eastern portion of the Study Area. Photograph taken from perimeter levee on August 27, 2018.



Photo 8. Non-tidal waters associated with Sycamore Slough in Bowlsbey Ranch. Taken January 6, 2017 and facing north.



Photo 9. View facing south of tidal waters of Cache Slough within the southern portion of the Study Area, with the Vogel property on the right and Liberty Farms on the left. Photograph taken August 27, 2018.



Photo 10. View facing south of tidal waters of Haas Slough within western portion of Study Area. Photograph taken September 19, 2017.



Photo 11. View facing north of irrigated pasture within Bowsbey Ranch. Photograph taken August 27, 2018.



Photo 12. Developed (agricultural road), irrigated pasture, and open water (drainage ditch) biological communities on Bowsbey Ranch. Taken January 6, 2017 and facing west.



Photo 13. Non-native grassland biological community on Vogel Island. Taken January 6, 2017 and facing south.



Photo 14. Developed (perimeter levee road) and great valley mixed riparian biological communities on Vogel property. Taken January 6, 2017 and facing south.

This page intentionally left blank.

Appendix B:
Cultural Resources Report
Bole & Associates 2019

“Confidential” appendix under separate cover

Appendix C:
Phase 1 Environmental Site Assessment (ESA)
See Attached CD-R
WRA, Inc. 2017

Appendix D:
Greenhouse Gas (GHG) Emissions Reduction Plan
Consistency Determination (Baseline)
Baseline 2019

Greenhouse Gas(GHG) Emissions Reduction Plan

Consistency Determination

For Projects Using Contractors or Other Outside Labor

This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan. This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are used to implement the project.

Additional Guidance on filling out this form can be found at:

http://dwrclimatechange.water.ca.gov/guidance_resources.cfm

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at:

<https://water.ca.gov/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan>

Project Name:	Lookout Slough Restoration Project
Environmental Document Type:	Initial Study
Manager's Name:	Heather Green
Manager's E-mail:	Heather.green@water.ca.gov
Division:	Division of Environmental Services
Office, Branch, or Field Division:	Mitigation and Restoration Branch

Short Project Description:

The Lookout Slough Restoration Project is a part of the Fish Restoration Program and proposes to restore tidal hydrology in a 3,395-acre area in unincorporated Solano County and Yolo County. Proposed construction activities include earthwork, vegetation and existing infrastructure removal on the site, lowering of the Shag Slough Levee, creation of levee breeches in Shag Slough, Cache Slough, and Vogel Levee, excavation of tidal channels, construction of a new Setback Levee and vehicle access. Main construction activities would occur from early-2020 to mid-2021.

Project GHG Emissions Summary:

Total Construction Emissions	18,441	mtCO ₂ e
Maximum Annual Construction Emissions	10,761	mtCO ₂ e

☒ All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.

Extraordinary Construction Project Determination:

Do total project construction emissions exceed 25,000 mtCO₂e for the entire construction phase or exceed 12,500 mtCO₂e in any single year of construction?

- ☒ No- Additional analysis not required ☐ Yes - Project specific emissions mitigation measures have been included in the environmental analysis document for the project

Project GHG Reduction Plan Checklist:

☒ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. (Project Level GHG Emissions Reduction Measures)

Or

☐ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and Measures not incorporated have been listed and determined not to apply to the proposed project (include as an attachment)

☒ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures (Specific Action GHG Emissions Reduction Measures)

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

☐ Yes ☒ No

If you answered Yes, attach a letter documenting that the project has consulted with the DWR SWP Power and Risk Office regarding the additional power requirements of the project.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

☐ Yes ☒ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR CEQA Climate Change Committee has determined that:

- ☒ The entire proposed project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gases emitted by the project are covered by the plan's analysis.
- ☐ The operational and maintenance phase of the project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gases emitted by the project are covered by the plan's analysis. Emissions from the construction phase of the project are not covered by the DWR Greenhouse Gas Emissions Reduction Plan and will be mitigated as part of the project.

Project Manager Signature: _____

Heath Com

Date: _____

3/21/19

C4 Approval Signature: _____

Date: _____

Attachments:

☒ GHG Emissions Inventory

☐ List and Explanation of excluded Project level GHG Emissions Reduction Measures

☐ SWP Power and Risk Office Consultation Letter

Links:

<https://current.water.ca.gov/programs/icc/SitePages/Home.aspx>

<https://water.ca.gov/Programs/All-Programs/Climate-Change-Program>

[illegible]

CalEEMod Input for On-Site Construction Equipment

ACTIVITY	AG TRACTORS	DOZER	SCRAPER	EXCAVATOR	COMPACT OR	MOTOR GRADER	BACKHOE	LOADERS	HAUL TRUCKS	WATER TRUCKS	Telehandler
Equipment Name in CalEEMod	Crawler Tractors	Rubber-Tired Dozers	Scrapers	Excavators	Plate Compactors	Graders	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Off-Highway Trucks	Off-Highway Trucks	Cranes
Horsepower	212	247	367	158	8	187	97	97	402	402	231
CLEARING - 2020	4348	3210	0	0	0	0	0	0	0	0	0
GRADING (EX) - 2020	4357	21575	15553	15667	856	149	0	3490	2095	2477	40
GRADING (FILL) - 2020	12003	5843	11328	170	6817	375	0	0	1000	1244	0
GRADING (EX) - 2021	3312	3952	24237	15891	0	1149	0	0	7995	4134	0
GRADING (FILL) - 2021	5956	2245	590	835	1507	0	552	0	550	80	0
TOTAL PER EQ HOURS PER CLASS	29976	36825	51708	32563	9180	1673	552	3490	11640	7935	40

CalEEMod Input for On-Road Vehicles

ACTIVITY	Work Days	Total Worker Trips	Worker Trip Length (One-	Haul Trips
CLEARING - 2020	150	3900	105	85
GRADING (EX) - 2020			105	780
GRADING (FILL) - 2020			105	0
GRADING (EX) - 2021	150	3900	105	0
GRADING (FILL) - 2021			105	0

Lookout Slough v1 - Solano-Sacramento County, Annual

Lookout Slough v1
Solano-Sacramento County, Annual**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	3,395.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	6.8	Precipitation Freq (Days)	56
Climate Zone	4			Operational Year	2021
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

Lookout Slough v1 - Solano-Sacramento County, Annual

Project Characteristics - Utility details not included as GHG was analyzed using a separate tool.

Land Use - Arbitrary use of user defined recreational land use would not affect the output of construction emissions.

Construction Phase - Select all construction hours in 2020 and 2021 to happen on one day each year to obtain total emissions

Off-road Equipment - According to equipment hours provided by project applicant.

Off-road Equipment - According to equipment hours provided by project applicant.

Off-road Equipment - According to equipment hours provided by project applicant.

Off-road Equipment - According to equipment hours provided by project applicant.

Off-road Equipment - According to equipment hours provided by project applicant.

Grading - Assume all material export would occur in 2020

Demolition - Demo debris tonnage given by project applicant

Trips and VMT - Assume maximum scenario of 150 workdays per year, 26 workers per day, 3.5-hour worker roundtrips. Haul trips calculated based on material export.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10,000.00	1.00
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	NumDays	6,000.00	1.00
tblConstructionPhase	NumDays	6,000.00	1.00
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	PhaseEndDate	6/3/2058	2/4/2020
tblConstructionPhase	PhaseEndDate	2/14/2777	2/4/2020
tblConstructionPhase	PhaseEndDate	6/2/2081	2/4/2020
tblConstructionPhase	PhaseStartDate	12/18/2734	2/4/2020
tblConstructionPhase	PhaseStartDate	6/4/2058	2/4/2020
tblGrading	MaterialExported	0.00	15,600.00
tblLandUse	LotAcreage	0.00	3,395.00
tblOffRoadEquipment	LoadFactor	0.37	0.37

Lookout Slough v1 - Solano-Sacramento County, Annual

tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Graders

Lookout Slough v1 - Solano-Sacramento County, Annual

tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	21,575.00
tblOffRoadEquipment	UsageHours	8.00	3,952.00
tblOffRoadEquipment	UsageHours	8.00	3,210.00
tblOffRoadEquipment	UsageHours	8.00	3,490.00
tblTripsAndVMT	HaulingTripNumber	0.00	85.00
tblTripsAndVMT	HaulingTripNumber	1,542.00	780.00
tblTripsAndVMT	WorkerTripLength	10.00	105.00
tblTripsAndVMT	WorkerTripLength	10.00	105.00
tblTripsAndVMT	WorkerTripLength	10.00	105.00
tblTripsAndVMT	WorkerTripLength	10.00	105.00
tblTripsAndVMT	WorkerTripLength	10.00	105.00
tblTripsAndVMT	WorkerTripNumber	5.00	1,300.00
tblTripsAndVMT	WorkerTripNumber	25.00	1,300.00
tblTripsAndVMT	WorkerTripNumber	20.00	1,300.00
tblTripsAndVMT	WorkerTripNumber	20.00	1,950.00

Lookout Slough v1 - Solano-Sacramento County, Annual

tblTripsAndVMT	WorkerTripNumber	18.00	1,950.00
----------------	------------------	-------	----------

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	5.1456	57.1202	29.6038	0.0656	25.4269	2.4517	27.8786	6.2266	2.2560	8.4826	0.0000	5,770.1536	5,770.1536	1.8133	0.0000	5,815.4864
2021	2.9802	31.8936	20.7161	0.0494	18.6900	1.2865	19.9765	2.5724	1.1836	3.7560	0.0000	4,338.6954	4,338.6954	1.3636	0.0000	4,372.7865
Maximum	5.1456	57.1202	29.6038	0.0656	25.4269	2.4517	27.8786	6.2266	2.2560	8.4826	0.0000	5,770.1536	5,770.1536	1.8133	0.0000	5,815.4864

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	5.1456	57.1202	29.6038	0.0656	9.4745	2.4517	11.9263	4.6348	2.2560	6.8907	0.0000	5,770.1469	5,770.1469	1.8133	0.0000	5,815.4797
2021	2.9802	31.8935	20.7161	0.0494	3.3843	1.2865	4.6708	1.0451	1.1836	2.2287	0.0000	4,338.6904	4,338.6904	1.3636	0.0000	4,372.7814
Maximum	5.1456	57.1202	29.6038	0.0656	9.4745	2.4517	11.9263	4.6348	2.2560	6.8907	0.0000	5,770.1469	5,770.1469	1.8133	0.0000	5,815.4797

Lookout Slough v1 - Solano-Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	70.85	0.00	65.32	35.45	0.00	25.49	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-4-2020	5-3-2020	44.4856	44.4856
5	2-4-2021	5-3-2021	24.9063	24.9063
		Highest	44.4856	44.4856

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

Lookout Slough v1 - Solano-Sacramento County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Lookout Slough v1 - Solano-Sacramento County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Clearing - 2020	Demolition	2/4/2020	2/4/2020	5	1	
2	Grading (Ex) - 2020	Site Preparation	2/4/2020	2/4/2020	5	1	
3	Grading (Fill) - 2020	Paving	2/4/2020	2/4/2020	5	1	
4	Grading (Ex) - 2021	Site Preparation	4/16/2021	4/16/2021	5	1	
5	Grading (Fill) - 2021	Paving	4/16/2021	4/16/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading (Fill) - 2021	Tractors/Loaders/Backhoes	1	552.00	97	0.37
Grading (Ex) - 2020	Crawler Tractors	1	4,357.00	212	0.43
Grading (Ex) - 2020	Rubber Tired Dozers	1	21,575.00	247	0.40
Grading (Ex) - 2021	Crawler Tractors	1	3,312.00	212	0.43
Grading (Ex) - 2021	Rubber Tired Dozers	1	3,952.00	247	0.40
Grading (Fill) - 2021	Crawler Tractors	1	5,956.00	212	0.43
Grading (Ex) - 2021	Scrapers	1	24,237.00	367	0.48
Grading (Ex) - 2020	Scrapers	1	15,553.00	367	0.48
Clearing - 2020	Crawler Tractors	1	4,348.00	212	0.43
Clearing - 2020	Rubber Tired Dozers	1	3,210.00	247	0.40
Grading (Ex) - 2020	Excavators	1	15,667.00	158	0.38

Lookout Slough v1 - Solano-Sacramento County, Annual

Grading (Ex) - 2020	Plate Compactors	1	856.00	8	0.43
Grading (Ex) - 2021	Excavators	1	15,891.00	158	0.38
Grading (Fill) - 2020	Crawler Tractors	1	12,003.00	212	0.43
Grading (Fill) - 2020	Rubber Tired Dozers	1	5,843.00	247	0.40
Grading (Ex) - 2020	Graders	1	149.00	187	0.41
Grading (Ex) - 2020	Tractors/Loaders/Backhoes	1	3,490.00	97	0.37
Grading (Ex) - 2020	Off-Highway Trucks	1	2,095.00	402	0.38
Grading (Ex) - 2020	Off-Highway Trucks	1	2,477.00	402	0.38
Grading (Ex) - 2020	Cranes	1	40.00	231	0.29
Grading (Fill) - 2020	Scrapers	1	11,328.00	367	0.48
Grading (Fill) - 2020	Excavators	1	170.00	158	0.38
Grading (Fill) - 2020	Plate Compactors	1	6,817.00	8	0.43
Grading (Fill) - 2020	Graders	1	375.00	187	0.41
Grading (Fill) - 2020	Off-Highway Trucks	1	1,000.00	402	0.38
Grading (Fill) - 2020	Off-Highway Trucks	1	1,244.00	402	0.38
Grading (Ex) - 2021	Graders	1	1,149.00	187	0.41
Grading (Ex) - 2021	Off-Highway Trucks	1	7,995.00	402	0.38
Grading (Ex) - 2021	Off-Highway Trucks	1	4,134.00	402	0.38
Grading (Fill) - 2021	Rubber Tired Dozers	1	2,245.00	247	0.40
Grading (Fill) - 2021	Scrapers	1	590.00	367	0.48
Grading (Fill) - 2021	Excavators	1	835.00	158	0.38
Grading (Fill) - 2021	Plate Compactors	1	1,507.00	8	0.43
Grading (Fill) - 2021	Off-Highway Trucks	1	550.00	402	0.38
Grading (Fill) - 2021	Off-Highway Trucks	1	80.00	402	0.38

Trips and VMT

Lookout Slough v1 - Solano-Sacramento County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Clearing - 2020	2	1,300.00	0.00	85.00	105.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading (Ex) - 2020	10	1,300.00	0.00	780.00	105.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading (Fill) - 2021	8	1,950.00	0.00	0.00	105.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading (Ex) - 2021	7	1,950.00	0.00	0.00	105.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading (Fill) - 2020	8	1,300.00	0.00	0.00	105.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Clearing - 2020 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	3.2300e-003	0.0000	3.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3739	4.2974	1.5083	3.8400e-003		0.1876	0.1876		0.1726	0.1726	0.0000	338.0362	338.0362	0.1093	0.0000	340.7694
Total	0.3739	4.2974	1.5083	3.8400e-003	0.0213	0.1876	0.2089	3.2300e-003	0.1726	0.1758	0.0000	338.0362	338.0362	0.1093	0.0000	340.7694

Lookout Slough v1 - Solano-Sacramento County, Annual

3.2 Clearing - 2020 - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	0.0118	2.0200e-003	3.0000e-005	0.0642	4.0000e-005	0.0643	6.5300e-003	4.0000e-005	6.5700e-003	0.0000	3.2598	3.2598	1.3000e-004	0.0000	3.2630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	5.1494	3.1000e-004	5.1497	0.5218	2.9000e-004	0.5221	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0176	0.0259	0.1311	5.2000e-004	5.2137	3.5000e-004	5.2140	0.5283	3.3000e-004	0.5287	0.0000	47.7378	47.7378	1.1300e-003	0.0000	47.7661

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	3.2300e-003	0.0000	3.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3739	4.2974	1.5083	3.8400e-003		0.1876	0.1876		0.1726	0.1726	0.0000	338.0358	338.0358	0.1093	0.0000	340.7690
Total	0.3739	4.2974	1.5083	3.8400e-003	0.0213	0.1876	0.2089	3.2300e-003	0.1726	0.1758	0.0000	338.0358	338.0358	0.1093	0.0000	340.7690

Lookout Slough v1 - Solano-Sacramento County, Annual

3.2 Clearing - 2020 - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5000e-004	0.0118	2.0200e-003	3.0000e-005	6.9000e-004	4.0000e-005	7.3000e-004	1.9000e-004	4.0000e-005	2.3000e-004	0.0000	3.2598	3.2598	1.3000e-004	0.0000	3.2630
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	0.0475	3.1000e-004	0.0478	0.0127	2.9000e-004	0.0130	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0176	0.0259	0.1311	5.2000e-004	0.0482	3.5000e-004	0.0486	0.0129	3.3000e-004	0.0132	0.0000	47.7378	47.7378	1.1300e-003	0.0000	47.7661

3.3 Grading (Ex) - 2020 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3036	0.0000	9.3036	4.5915	0.0000	4.5915	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0612	33.4468	18.3215	0.0380		1.4826	1.4826		1.3640	1.3640	0.0000	3,337.1891	3,337.1891	1.0790	0.0000	3,364.1628
Total	3.0612	33.4468	18.3215	0.0380	9.3036	1.4826	10.7862	4.5915	1.3640	5.9556	0.0000	3,337.1891	3,337.1891	1.0790	0.0000	3,364.1628

Lookout Slough v1 - Solano-Sacramento County, Annual

3.3 Grading (Ex) - 2020 - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2200e-003	0.1079	0.0186	3.1000e-004	0.5894	3.7000e-004	0.5898	0.0599	3.6000e-004	0.0603	0.0000	29.9131	29.9131	1.1700e-003	0.0000	29.9424
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	5.1494	3.1000e-004	5.1497	0.5218	2.9000e-004	0.5221	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0205	0.1221	0.1477	8.0000e-004	5.7388	6.8000e-004	5.7395	0.5817	6.5000e-004	0.5824	0.0000	74.3911	74.3911	2.1700e-003	0.0000	74.4455

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3036	0.0000	9.3036	4.5915	0.0000	4.5915	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0612	33.4468	18.3214	0.0380		1.4826	1.4826		1.3640	1.3640	0.0000	3,337.1852	3,337.1852	1.0790	0.0000	3,364.1588
Total	3.0612	33.4468	18.3214	0.0380	9.3036	1.4826	10.7862	4.5915	1.3640	5.9556	0.0000	3,337.1852	3,337.1852	1.0790	0.0000	3,364.1588

Lookout Slough v1 - Solano-Sacramento County, Annual

3.3 Grading (Ex) - 2020 - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2200e-003	0.1079	0.0188	3.1000e-004	6.3400e-003	3.7000e-004	6.7100e-003	1.7500e-003	3.6000e-004	2.1100e-003	0.0000	29.9131	29.9131	1.1700e-003	0.0000	29.9424
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	0.0475	3.1000e-004	0.0478	0.0127	2.9000e-004	0.0130	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0205	0.1221	0.1477	8.0000e-004	0.0539	6.8000e-004	0.0546	0.0144	6.5000e-004	0.0151	0.0000	74.3911	74.3911	2.1700e-003	0.0000	74.4455

3.4 Grading (Fill) - 2020 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6553	19.2137	9.3662	0.0220		0.7802	0.7802		0.7181	0.7181	0.0000	1,928.3212	1,928.3212	0.6207	0.0000	1,943.8395
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6553	19.2137	9.3662	0.0220		0.7802	0.7802		0.7181	0.7181	0.0000	1,928.3212	1,928.3212	0.6207	0.0000	1,943.8395

Lookout Slough v1 - Solano-Sacramento County, Annual

3.4 Grading (Fill) - 2020 - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	5.1494	3.1000e-004	5.1497	0.5218	2.9000e-004	0.5221	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0172	0.0142	0.1291	4.9000e-004	5.1494	3.1000e-004	5.1497	0.5218	2.9000e-004	0.5221	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6553	19.2137	9.3662	0.0220		0.7802	0.7802		0.7181	0.7181	0.0000	1,928.3190	1,928.3190	0.6207	0.0000	1,943.8372
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.6553	19.2137	9.3662	0.0220		0.7802	0.7802		0.7181	0.7181	0.0000	1,928.3190	1,928.3190	0.6207	0.0000	1,943.8372

Lookout Slough v1 - Solano-Sacramento County, Annual

3.4 Grading (Fill) - 2020 - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0172	0.0142	0.1291	4.9000e-004	0.0475	3.1000e-004	0.0478	0.0127	2.9000e-004	0.0130	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031
Total	0.0172	0.0142	0.1291	4.9000e-004	0.0475	3.1000e-004	0.0478	0.0127	2.9000e-004	0.0130	0.0000	44.4781	44.4781	1.0000e-003	0.0000	44.5031

3.5 Grading (Ex) - 2021 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2418	0.0000	3.2418	1.0071	0.0000	1.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4999	26.9192	18.2210	0.0423		1.0801	1.0801		0.9937	0.9937	0.0000	3,717.1236	3,717.1236	1.2022	0.0000	3,747.1784
Total	2.4999	26.9192	18.2210	0.0423	3.2418	1.0801	4.3218	1.0071	0.9937	2.0007	0.0000	3,717.1236	3,717.1236	1.2022	0.0000	3,747.1784

Lookout Slough v1 - Solano-Sacramento County, Annual

3.5 Grading (Ex) - 2021 - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0190	0.1769	7.1000e-004	7.7241	4.6000e-004	7.7246	0.7827	4.2000e-004	0.7831	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856
Total	0.0240	0.0190	0.1769	7.1000e-004	7.7241	4.6000e-004	7.7246	0.7827	4.2000e-004	0.7831	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2418	0.0000	3.2418	1.0071	0.0000	1.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4999	26.9191	18.2209	0.0423		1.0801	1.0801		0.9937	0.9937	0.0000	3,717.1191	3,717.1191	1.2022	0.0000	3,747.1739
Total	2.4999	26.9191	18.2209	0.0423	3.2418	1.0801	4.3218	1.0071	0.9937	2.0007	0.0000	3,717.1191	3,717.1191	1.2022	0.0000	3,747.1739

Lookout Slough v1 - Solano-Sacramento County, Annual

3.5 Grading (Ex) - 2021 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0190	0.1769	7.1000e-004	0.0713	4.6000e-004	0.0717	0.0190	4.2000e-004	0.0195	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856
Total	0.0240	0.0190	0.1769	7.1000e-004	0.0713	4.6000e-004	0.0717	0.0190	4.2000e-004	0.0195	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856

3.6 Grading (Fill) - 2021 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4322	4.9364	2.1415	5.6200e-003		0.2055	0.2055		0.1891	0.1891	0.0000	492.8680	492.8680	0.1588	0.0000	496.8369
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4322	4.9364	2.1415	5.6200e-003		0.2055	0.2055		0.1891	0.1891	0.0000	492.8680	492.8680	0.1588	0.0000	496.8369

Lookout Slough v1 - Solano-Sacramento County, Annual

3.6 Grading (Fill) - 2021 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0190	0.1769	7.1000e-004	7.7241	4.6000e-004	7.7246	0.7827	4.2000e-004	0.7831	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856
Total	0.0240	0.0190	0.1769	7.1000e-004	7.7241	4.6000e-004	7.7246	0.7827	4.2000e-004	0.7831	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4322	4.9364	2.1415	5.6200e-003		0.2055	0.2055		0.1891	0.1891	0.0000	492.8674	492.8674	0.1588	0.0000	496.8363
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4322	4.9364	2.1415	5.6200e-003		0.2055	0.2055		0.1891	0.1891	0.0000	492.8674	492.8674	0.1588	0.0000	496.8363

Lookout Slough v1 - Solano-Sacramento County, Annual

3.6 Grading (Fill) - 2021 - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0190	0.1769	7.1000e-004	0.0713	4.6000e-004	0.0717	0.0190	4.2000e-004	0.0195	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856
Total	0.0240	0.0190	0.1769	7.1000e-004	0.0713	4.6000e-004	0.0717	0.0190	4.2000e-004	0.0195	0.0000	64.3519	64.3519	1.3500e-003	0.0000	64.3856

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Lookout Slough v1 - Solano-Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053

5.0 Energy Detail

Historical Energy Use: N

Lookout Slough v1 - Solano-Sacramento County, Annual

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Lookout Slough v1 - Solano-Sacramento County, Annual

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr.	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Lookout Slough v1 - Solano-Sacramento County, Annual

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

Lookout Slough v1 - Solano-Sacramento County, Annual

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

7.0 Water Detail

Lookout Slough v1 - Solano-Sacramento County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land UseUnmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Lookout Slough v1 - Solano-Sacramento County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Lookout Slough v1 - Solano-Sacramento County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Lookout Slough v1 - Solano-Sacramento County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation
