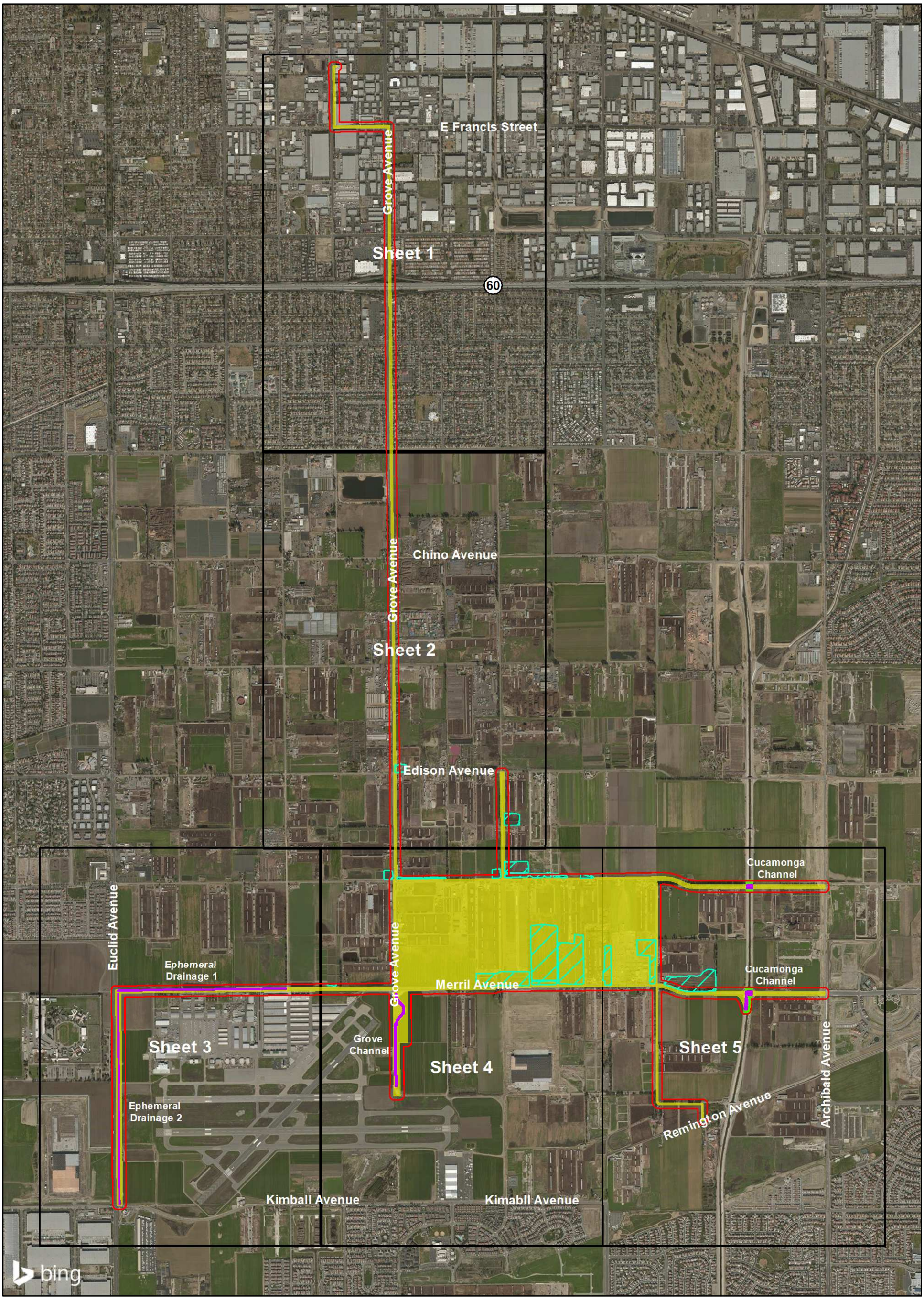


Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

N

0 1,125 2,250 4,500

Feet

1 inch = 2,250 feet

MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Key Map

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutKEY.mxd

Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

1 Width in Feet

N

0 350 700 1,400

Feet

1 inch = 700 feet

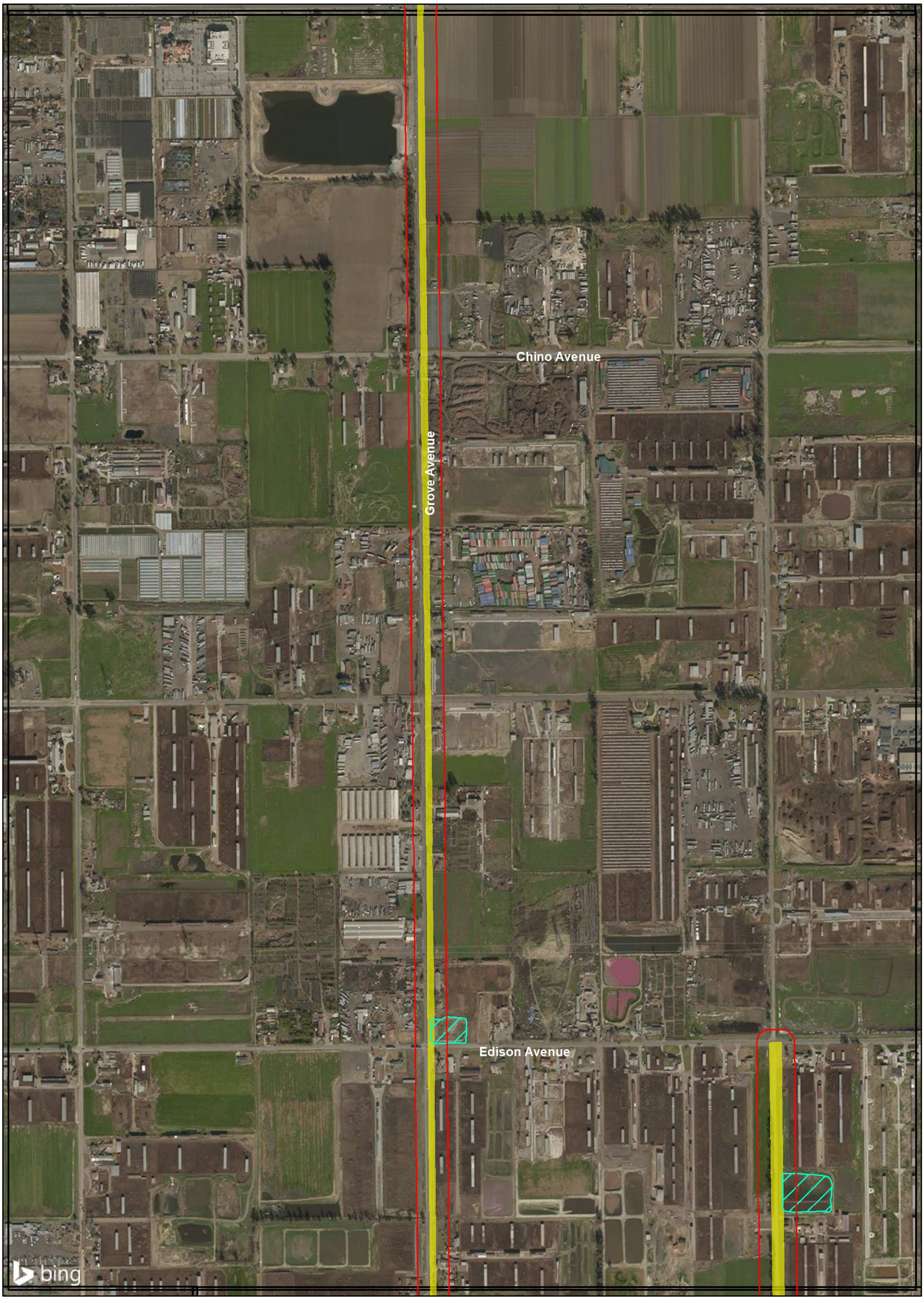
MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Sheet 1 of 5

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutSheets.mxd



Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

1 Width in Feet

N

0 350 700 1,400

Feet

1 inch = 700 feet

MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Sheet 2 of 5

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutSheets.mxd

Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

1 Width in Feet

N

0 350 700 1,400

Feet

1 inch = 700 feet

MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Sheet 3 of 5

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutSheets.mxd

Grove Avenue

Merril Avenue

40

45

20

Grove
Channel

Kimabll Avenue

bing

Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

1

Width in Feet

N

0 350 700 1,400

Feet

1 inch = 700 feet

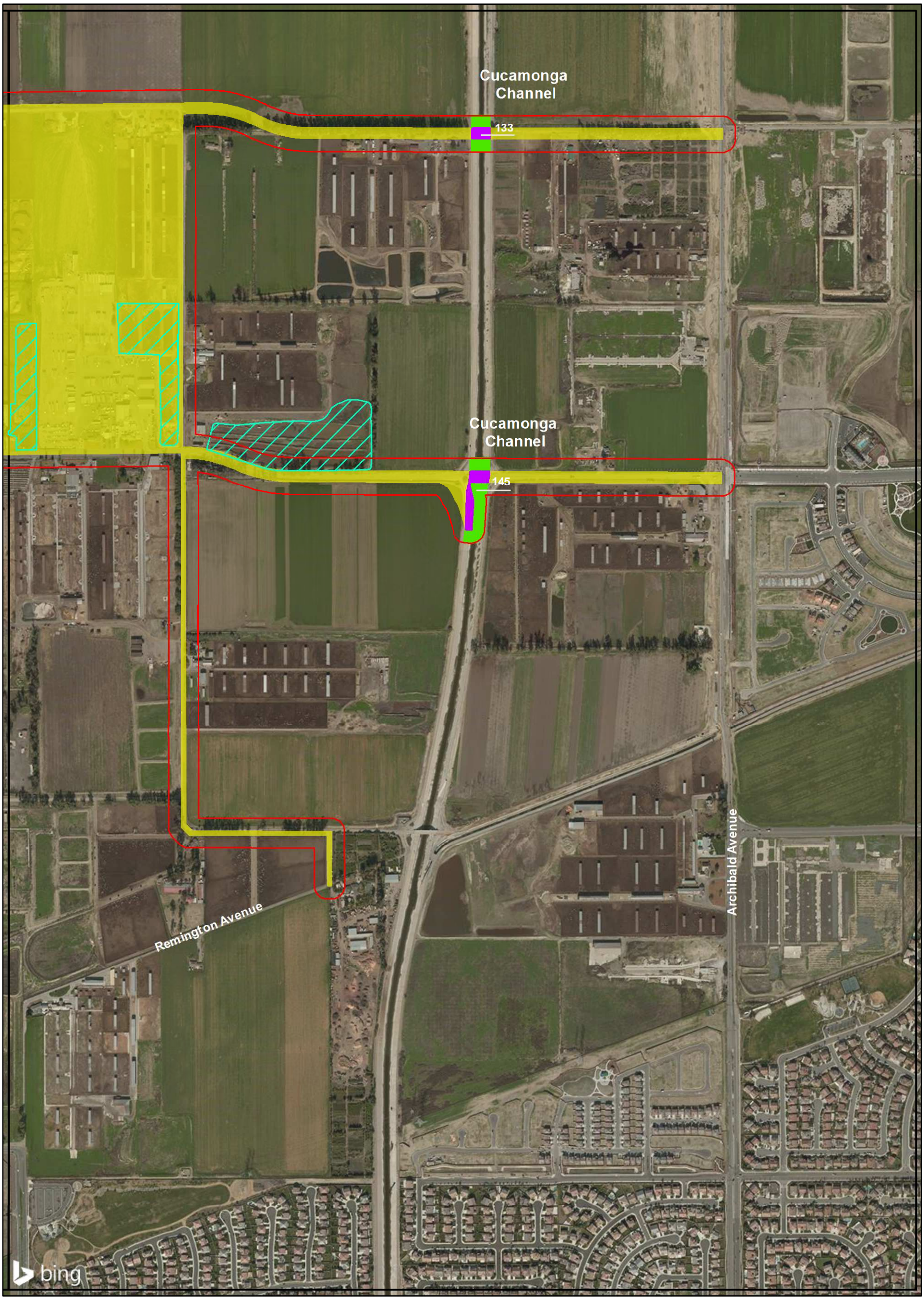
MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Sheet 4 of 5

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutSheets.mxd



Project Study Area

Project Footprint

CDFW Non-Riparian Stream

Impacted CDFW Non-Riparian Stream

Non-jurisdictional Waste Treatment Basin

1 Width in Feet

N

0 350 700 1,400

Feet

1 inch = 700 feet

MERRILL COMMERCE CENTER SPECIFIC PLAN

CDFW Jurisdictional Delineation/Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 8B - Sheet 5 of 5

X:\0363-THE REST\0849-32BORB\849-32_GIS\Impacts\849-32CDFWImpactsLayoutSheets.mxd

Photograph 1: View to the north of pasture land within existing dairy operations, with covered corrals visible in the background.

Photograph 2: View to the west of areas of open ground within existing dairy operations.

Photograph 3: View to the north of debris piles that could potentially be used by burrowing owls beneath large Eucalyptus trees, which could potentially be used by roosting lasiurine bat species and nesting raptors.

Photograph 4: View to the south of large Eucalyptus trees, which could potentially be used by roosting lasiurine bat species and nesting raptors.

GLENN LUKOS ASSOCIATES

Exhibit 9, Sheet 1

MERRILL COMMERCE CENTER SPECIFIC PLAN

Site Photographs

Photograph 5: View to the northwest of a non-jurisdictional dairy waste treatment basin. Note the large Eucalyptus trees in the background, which could potentially be used by roosting lasiurine bat species and nesting raptors.

Photograph 6: View to the west of a non-jurisdictional dairy waste treatment basin. Note the complex of California ground squirrel burrows located along the upper margins of the basin.

Photograph 7: View to the west of a non-jurisdictional dairy waste treatment basin. Note the complex of California ground squirrel burrows located along the upper margins of the basin.

Photograph 8: View to the south of the Cucamonga Channel from the existing Merrill Avenue Bridge crossing.

GLENN LUKOS ASSOCIATES

Exhibit 9, Sheet 2

MERRILL COMMERCE CENTER SPECIFIC PLAN

Site Photographs

Photograph 9: View to the south of a concrete-lined portion of the Grove Channel, located within a portion of the Chino Airport.

Photograph 10: View to the south of a rip rap/earthen portion of the Grove Channel, located within a portion of the Chino Airport. Note that a single burrowing owl was observed within a burrow located atop the rip rap.

Photograph 11: View to the east of Ephemeral Drainage 1, located along the northern shoulder of Merrill Avenue.

Photograph 12: View to the south of Ephemeral Drainage 2, located along the eastern shoulder of Euclid Avenue.

GLENN LUKOS ASSOCIATES

Exhibit 9, Sheet 3

MERRILL COMMERCE CENTER SPECIFIC PLAN

Site Photographs

Appendix A

Floral Compendium

FLORAL COMPENDIUM

The floral compendium lists all species identified during floristic level/focused plant surveys conducted for the Project site. Taxonomy typically follows the Angiosperm Phylogeny Group (APG), which in some cases differs from The Jepson Manual (1993). Common plant names are taken from Hickman (1993), Munz (1974), and Roberts et al (2004) and Roberts (2008). An asterisk (*) denotes a non-native species.

SCIENTIFIC NAME	COMMON NAME
MAGNOLIOPHYTA	**FLOWERING PLANTS**
MAGNOLIIDS	**MAGNOLIID CLADE**
MAGNOLIACEAE	**Magnolia Family**
Magnolia grandiflora	southern magnolia
MONOCOTYLEDONS	**MONOCOTS**
AGAVACEAE	**Agave Family**
* *Yucca baccata*	Spanish dagger
AMARYLLIDACEAE	**Amaryllis Family**
* *Clivia miniata*	bush lily
ARECACEAE	**Palm Family**
Washingtonia filifera	California fan palm
* *Washingtonia robusta*	Mexican fan palm
POACEAE	**Grass Family**
* *Bromus diandrus*	ripgut grass
* *Cynodon dactylon*	Bermuda grass
* *Echinochloa colona*	jungle rice
* *Hordeum murinum*	foxtail barley
* *Lolium perenne*	perennial ryegrass
* *Polypogon monspeliensis*	rabbitfoot grass
TYPHACEAE	**Cat-Tail Family**
Typha domingensis	southern cat-tail
EUDICOTYLEDONS	**EUDICOTS**
CELASTRACEAE	**Staff Vine Family**
* *Euonymus* cultivar.	winter creeper

AMARANTHACEAE		**Amaranth Family**
*	*Amaranthus albus*	tumbling pigweed
	Amaranthus blitoides	prostrate pigweed
	Atriplex lentiformis subsp. *lentiformis*	Brewer's saltbush
*	*Bassia hyssopifolia*	five-hook bassia
*	*Chenopodium album*	lamb's quarters
*	*Salsola tragus*	Russian-thistle
ANACARDIACEAE		**Sumac Family**
*	*Schinus molle*	Peruvian pepper tree
ASTERACEAE		**Sunflower Family**
*	*Cirsium vulgare*	bull thistle
*	*Lactuca serriola*	prickly lettuce
*	*Silybum marianum*	milk thistle
*	*Sonchus oleraceus*	common sow-thistle
	Verbesina encelioides	earless crownbeard
BRASSICACEAE		**Mustard Family**
*	*Raphanus sativus*	wild radish
*	*Sisymbrium irio*	London rocket
CACTACEAE		**Cactus Family**
*	*Opuntia ficus-indica*	Indian fig
FABACEAE		**Legume Family**
*	*Parkinsonia aculeata*	Mexican palo verde
GERANIACEAE		**Geranium Family**
*	*Erodium cicutarium*	red-stemmed filaree
LYTHRACEAE		**Loosestrife Family**
*	*Punica granatum*	pomegranate
MALVACEAE		**Mallow Family**
*	*Malva parviflora*	cheeseweed
	Malvella leprosa	alkali-mallow
MORACEAE		**Mulberry Family**
*	*Ficus carica*	common fig
*	*Morus alba*	white mulberry
MYRTACEAE		**Myrtle Family**
*	*Eucalyptus* sp.	gum tree

NYCTAGINACEAE	**Four O'Clock Family**
* *Bougainvillea* sp.	bougainvillea
OLEACEAE	**Olive Family**
* *Fraxinus uhdei*	Shamel ash
* *Olea europaea*	European olive
POLYGONACEAE	**Buckwheat Family**
* *Polygonum aviculare*	prostrate knotweed
* *Rumex crispus*	curly dock
PORTULACACEAE	**Purslane Family**
* *Portulaca oleracea*	common purslane
ROSACEAE	**Rose Family**
* *Pyrus* cultivar.	ornamental pear
SIMAROUBACEAE	**Simarouba Family**
* *Ailanthus altissima*	tree of Heaven
SOLANACEAE	**Nightshade Family**
* *Datura stramonium*	thorn-apple
Datura wrightii	jimsonweed
* *Nicotiana glauca*	tree tobacco
* *Nicotiana glauca*	tree tobacco
* *Solanum elaeagnifolium*	horse nettle
ULMACEAE	**Elm Family**
* *Ulmus* sp.	elm species
URTICACEAE	**Nettle Family**
* *Urtica urens*	dwarf nettle
VITACEAE	**Grape Family**
* *Parthenocissus quinquefolia*	Virginia creeper
ZYGOPHYLLACEAE	**Caltrop Family**
* *Tribulus terrestris*	puncture vine

Appendix B

Faunal Compendium

FAUNAL COMPENDIA

Vertebrates identified in the field by sight, calls, tracks, scat, or other signs are cited according to the nomenclature of Collins (1997) for amphibians and reptiles, AOU (1998) for birds, and Jones et al. (1992) for mammals. Species were noted by direct observation, call identification, or detection of tracks, scat, or other diagnostic signs.

LEGEND

† Denotes special-status species
* Denotes non-native species

TERRESTRIAL INVERTEBRATES

NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES

Vanessa atlanta
red admiral

PIERIDAE - WHITES AND SULPHURS

**Pieris rapae*
cabbage white

FORMICIDAE - ANTS

Pogonomyrmex sp.
harvester ant

SCARABAEIDAE - SCARAB BEETLES

**Popillia japonica*
Japanese green beetle

THERIDIIDAE - TANGLE-WEB AND COBWEB SPIDERS

Latrodectus sp.
black widow spider

ACRIDIDAE - GRASSHOPPERS

Trimerotropis pallidipennis
pallid-winged grasshopper

TERRESTRIAL VERTEBRATES

REPTILES

IGUANIDAE - IGUANID LIZARDS

Sceloporus occidentalis
western fence lizard

BIRDS

ANATIDAE - SWANS AND GEESE

Branta canadensis
Canada goose
Aythya americana
redhead
Anas platyrhynchos
mallard
Anas americana
American wigeon
Anas cyanoptera
cinnamon teal

CATHARTIDAE - NEW WORLD VULTURES

Cathartes aura
turkey vulture

ACCIPITRIDAE - HAWKS

Accipiter cooperi
Cooper's hawk
Buteo jamaicensis
red-tailed hawk

PHASIANIDAE - PHEASANTS & QUAILS

**Gallus domesticus*
domestic chicken
**Pavo cristatus*
Indian peafowl

RALLIDAE - RAILS

Fulica Americana

American coot

CHARADRIIDAE - SHOREBIRDS

Charadrius vociferus
killdeer

SCOLOPACIDAE - SHOREBIRDS

Numenius phaeopus
whimbrel
Limnodromus sp.
dowitcher
Calidris minutilla
least sandpiper
Gallinago delicata
Wilson's snipe

ARDEIDAE - HERONS AND STORKS

Ardea alba
great egret

THRESKIORNITHIDAE - IBIS

Plegadis chihi
white-faced ibis

RECURVIROSTRIDAE - STILTS AND AVOCETS

Himantopus mexicanus
black-necked stilt
Recurvirostra Americana
American avocet

PHALACROCORACIDAE - CORMORANTS

Phalacrocorax auritus
double-crested cormorant

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove
**Streptopelia decaocto*
Eurasian collared dove
**Columba livia*
rock pigeon

APODIDAE - SWIFTS

Aeronautes saxatalis

white-throated swift

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

FALCONIDAE - FALCONS

Falco sparverius
American kestrel

TYTONIDAE - BARN OWLS

Tyto alba
barn owl

STRIGIDAE - TRUE OWLS

†*Athene cunicularia*
burrowing owl

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe
Sayornis saya
Say's phoebe
Tyrranis verticalis
western kingbird
Tyrranis vociferans
Cassin’s kingbird

CORVIDAE - JAYS & CROWS

Corvus brachyrhynchos
American crow
Corvus corax
common raven

HIRUNDINIDAE - SWALLOWS

Hirundo rustica
barn swallow
Hirundo pyrrhonota
cliff swallow
Stelgidopteryx serripennis
northern rough-winged swallow

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

MIMIDAE - THRASHERS

Mimus polyglottos
Northern mockingbird

STURNIDAE - STARLINGS

**Sturnus vulgaris*
European starling

MOTACILLIDAE - PIPITS

Anthus rubescens
American pipit

PARULIDAE - WOOD WARBLERS

Setophaga coronata
yellow-rumped warbler
†*Setophaga petechia*
yellow warbler
Geothlypis trichas
common yellowthroat

EMBERIZIDAE – SPARROWS, BUNTINGS, WARBLERS, & RELATIVES

Melospiza melodia
song sparrow
Passerculus sandwichensis
savannah sparrow
Zonotrichia leucophrys
white-crowned sparrow

ICTERIDAE - BLACKBIRDS AND ORIOLES

Sturnella neglecta
western meadowlark
Euphagus cyanocephalus
Brewer's blackbird
Agelaius phoeniceus
red-winged blackbird
Xanthocephalus xanthocephalus
yellow-headed blackbird
**Molothrus ater*
brown-headed cowbird

Quiscalus mexicanus
great-tailed grackle

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch
Carduelis psaltria
lesser goldfinch

CARDINALIDAE - CARDINALS AND ALLIES

Piranga ludoviciana
western tanager

PASSERIDAE - OLD WORLD SPARROWS

**Passer domesticus*
house sparrow

PASSERELLIDAE - AMERICAN SPARROWS

Zonotrichia leucophrys
White-crowned sparrow

ALAUDIDAE - AMERICAN SPARROWS

Eremophila alpestris actia
California horned lark

MAMMALS

MEPHITIDAE - SKUNKS AND STINK BADGERS

Mephitis mephitis
striped skunk

GEOMYIDAE - POCKET GOPHERS

Thomomys bottae
Botta's pocket gopher

CANIDAE - CANINES

**Canis familiaris*
domestic dog

LEPORIDAE - RABBITS AND HARES

Sylvilagus audubonii
desert cottontail

FELIDAE - WILD CATS

**Felis silvestris*
domestic cat

SCIURIIDAE - SQUIRRELS

Otospermophilus beecheyi
California ground squirrel

CAMELIDAE - CAMELS, LLAMAS, AND ALPACAS

**Lama glama*
domestic llama

BOVIDAE - CATTLE

**Ovis aries*
domestic sheep
**Capra aegagrus hircus*
domestic goat
**Bos taurus*
domestic cow

Appendix C

Focused Habitat Assessment for the Delhi Sands Flower-loving Fly

--DRAFT--

Delhi Sands Flower-loving Fly Habitat Suitability Evaluation

Merrill Commerce Center Specific Plan

Site Location:
City of Ontario
County of San Bernardino
“Corona North”, "Prado Dam", Guasti", and "Ontario"
7.5-minute USGS Quadrangle Maps

Prepared for:
Zack West
Principal/Senior Biologist
Glenn Lukos Associates, Inc.
29 Orchard
Lake Forest, California 92630

Prepared by:
Scott Cameron
Ecological Sciences, Inc.
24307 Magic Mountain Parkway, #538
Valencia, CA 91355
scameron@ecosciencesinc.com
805.921.0583

Total Area Surveyed:
± 536 acres

Survey Conducted by:
Scott Cameron
Principal Biologist

Survey Conducted On:
September 4, 2018
September 5, 2018

Report Date:
January 8, 2019

ECOLOGICAL SCIENCES, inc.

January 8, 2019

Zack West
Senior Biologist/Regulatory Specialist
Glenn Lukos Associates, Inc.
29 Orchard
Lake Forest, California 92630

SUBJECT: ***Results of a Habitat Suitability Evaluation, Merrill Commerce Center Specific Plan, City of Ontario, San Bernardino County, California***

Dear Zack:

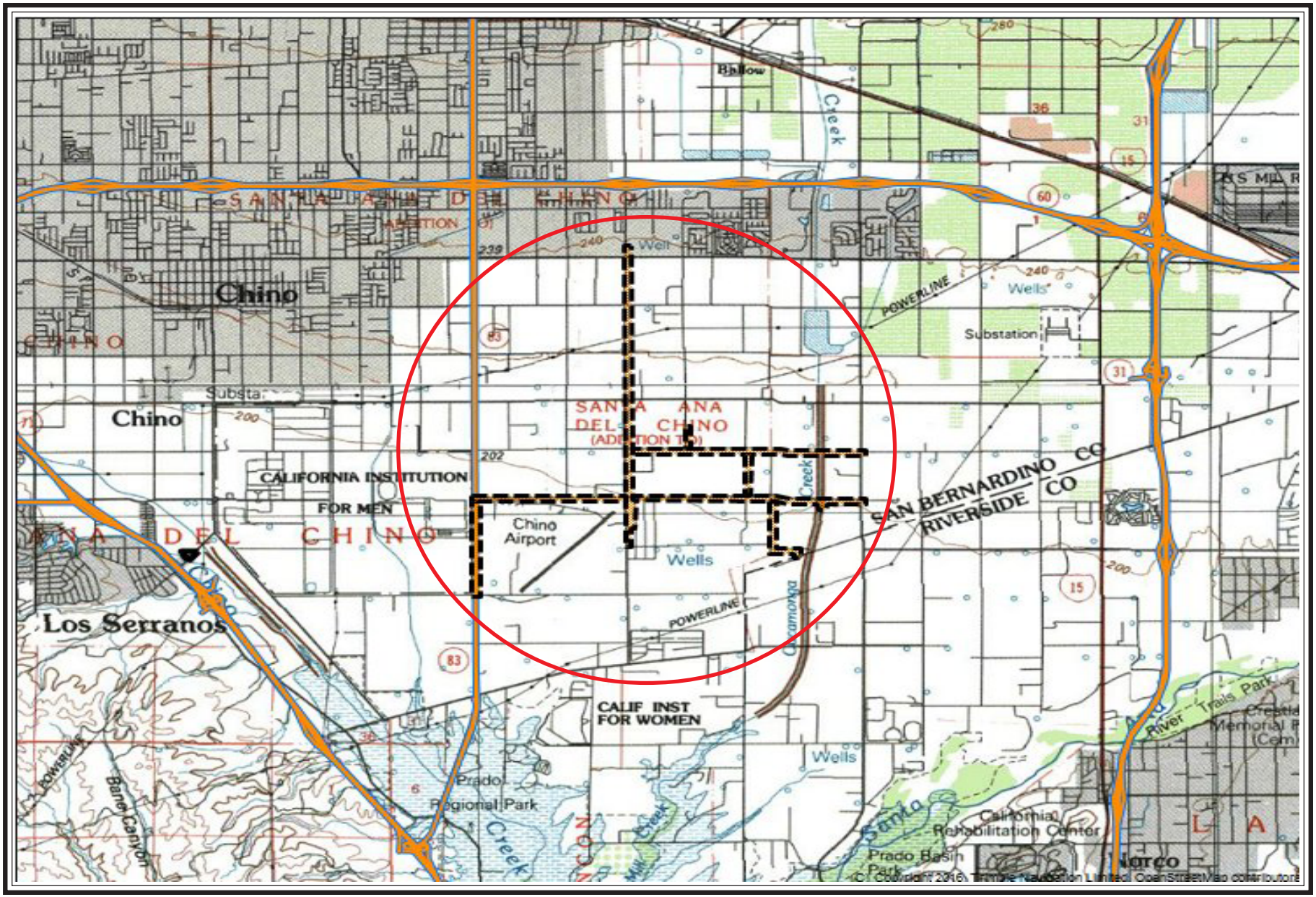
This letter report presents findings of a reconnaissance-level survey conducted to generally evaluate the suitability of a ±536-acre linear site (Merrill Commerce Center Specific Plan-herein site or study area) to support the federally-listed endangered Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*-herein DSFF).

Introduction

The study area is regionally located in San Bernardino County, California (***Plate 1***). Specifically, the project site is located in the City of Ontario (City), generally south of the Pomona Freeway (60), north of Kimball Avenue, east of Euclid Avenue, and west of Archibald Avenue. The site occurs on the "Corona North", "Prado Dam", Guasti", and "Ontario" USGS 7.5-minute topographic maps (***Plate 2***). ***Plate 3-0*** provides an regional aerial photograph of the study area followed by vicinity aerial ***Plates 3-1*** to ***3-6***. Projects proposed in the area that contain potentially suitable habitat to support sensitive biological resources such as the DSFF must demonstrate to reviewing agencies that potential project-related impacts to sensitive biological resources are avoided or minimized. In order to meet the environmental documentation and review requirements, potentially occurring sensitive biological resources must be addressed to demonstrate the applicant's conformance to California Environmental Quality Act (CEQA) and the federal Endangered Species Act (ESA) of 1973, as amended. As such, this report is intended to provide biological information to the applicant and reviewing agencies in support of the environmental review process.

As a federally listed endangered species, the DSFF is protected under the ESA. As such, federal law prohibits "take" of listed species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. In some cases, habitat modification can constitute prohibitive "take". A section 10(a) permit is required for projects where a determination of "take" is likely to occur during a proposed non-federal activity. If the project were to require a federal permit (e.g., USACE 404 permit), the federal agency issuing the permit would consult with the FWS to determine how the action may affect the DSFF under Section 7 of the Act.

The U.S. Fish and Wildlife Service (FWS) routinely reviews environmental documentation for proposed development projects in the area, and as such, would recommend that any impacts to sensitive biological resources be adequately addressed and mitigated pursuant to the ESA and CEQA. Due to the inherent limitations of unseasonal or habitat-based data, definitive conclusions regarding the actual presence or absence of DSFF cannot be made in this evaluation, although these limitations do not affect our conclusion that the property does not contain suitable habitat for the DSFF. Accordingly, this report is intended to provide the applicant with general information relative to the potential occurrence of DSFF based solely on the nature and condition of habitat present.



= Specific Study Area

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plate **1**

Regional Site Location

Merrill Commerce Center Specific Plan

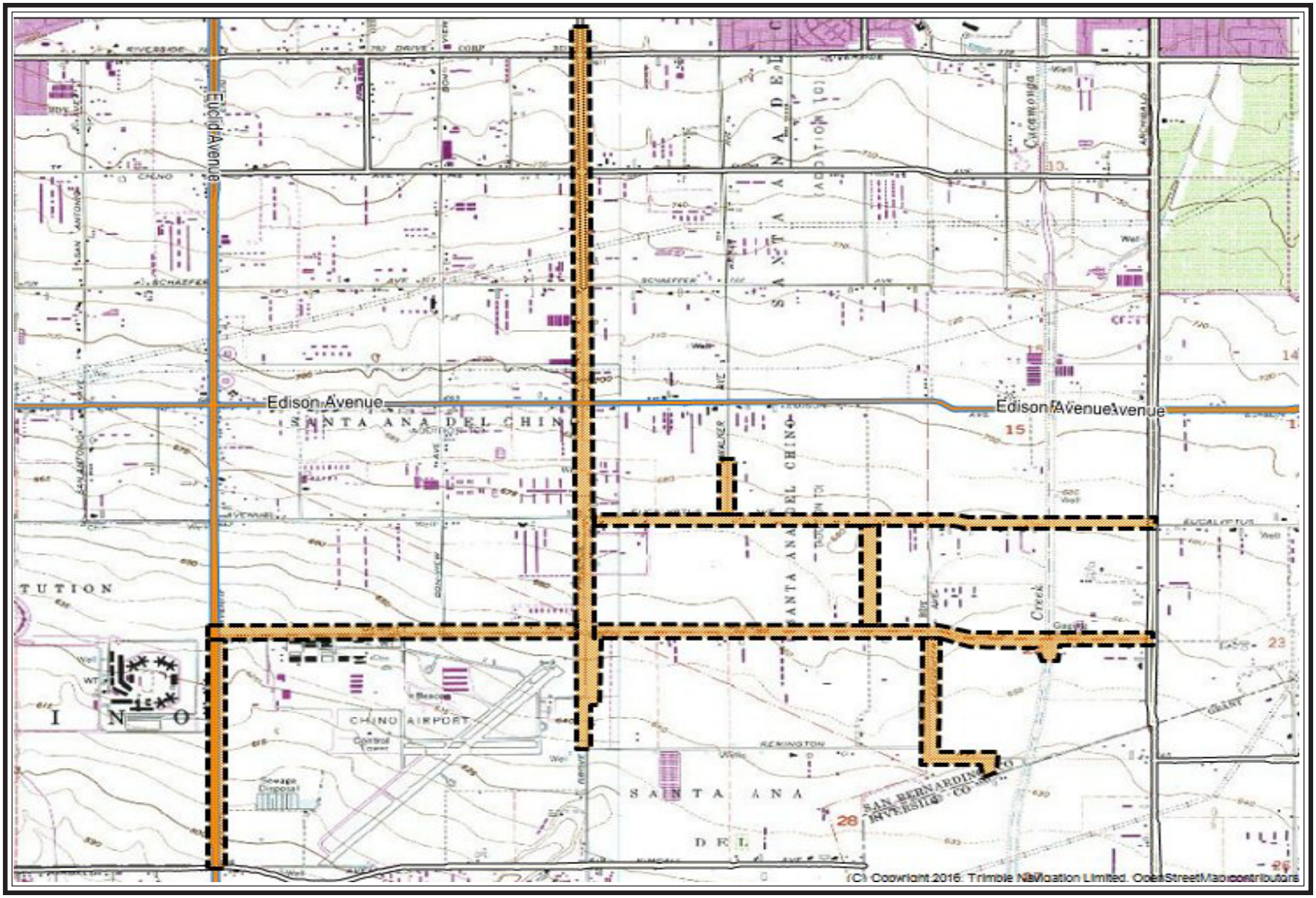

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plate **2**

USGS Topographic Site Vicinity

Merrill Commerce Center Specific Plan

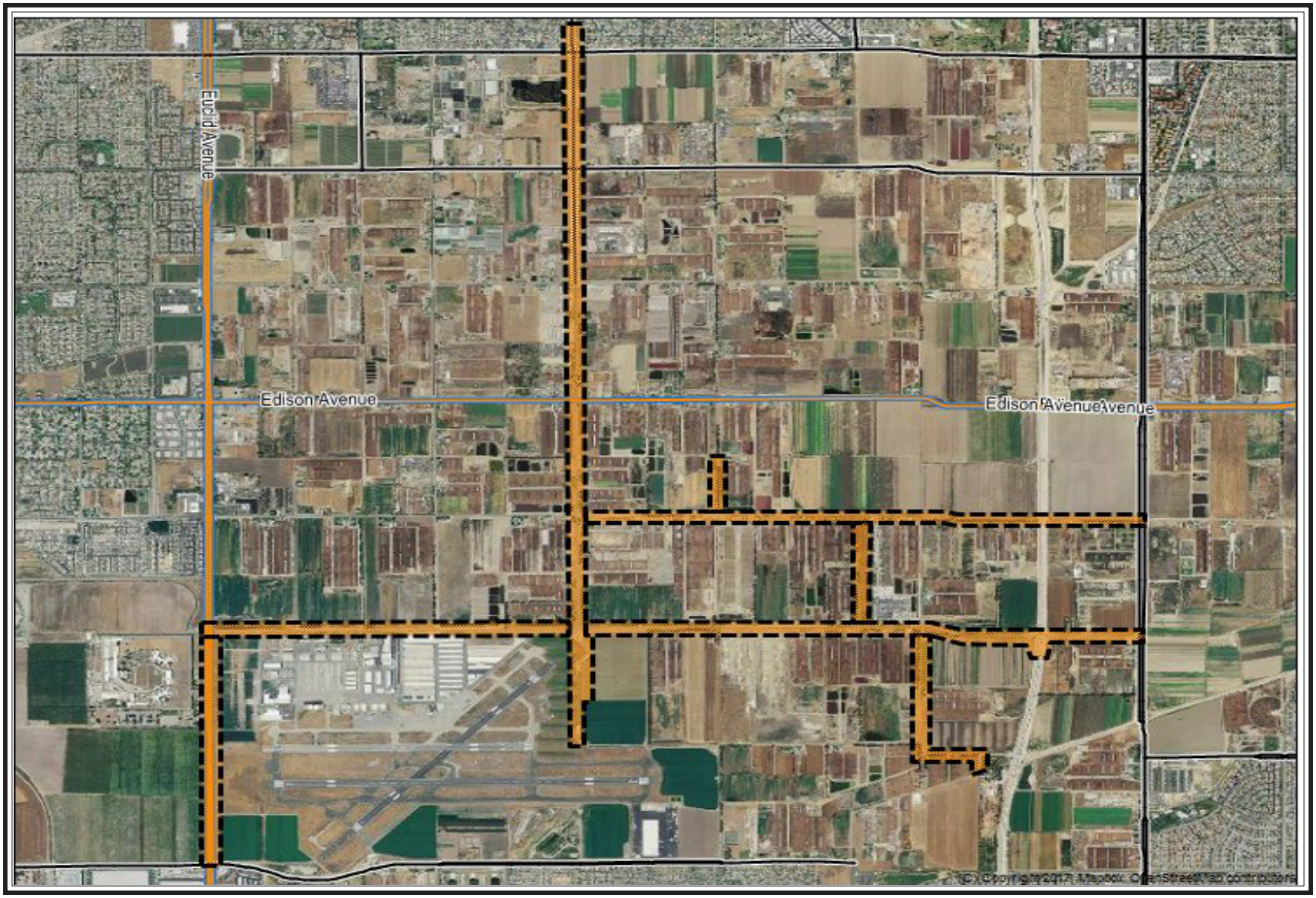

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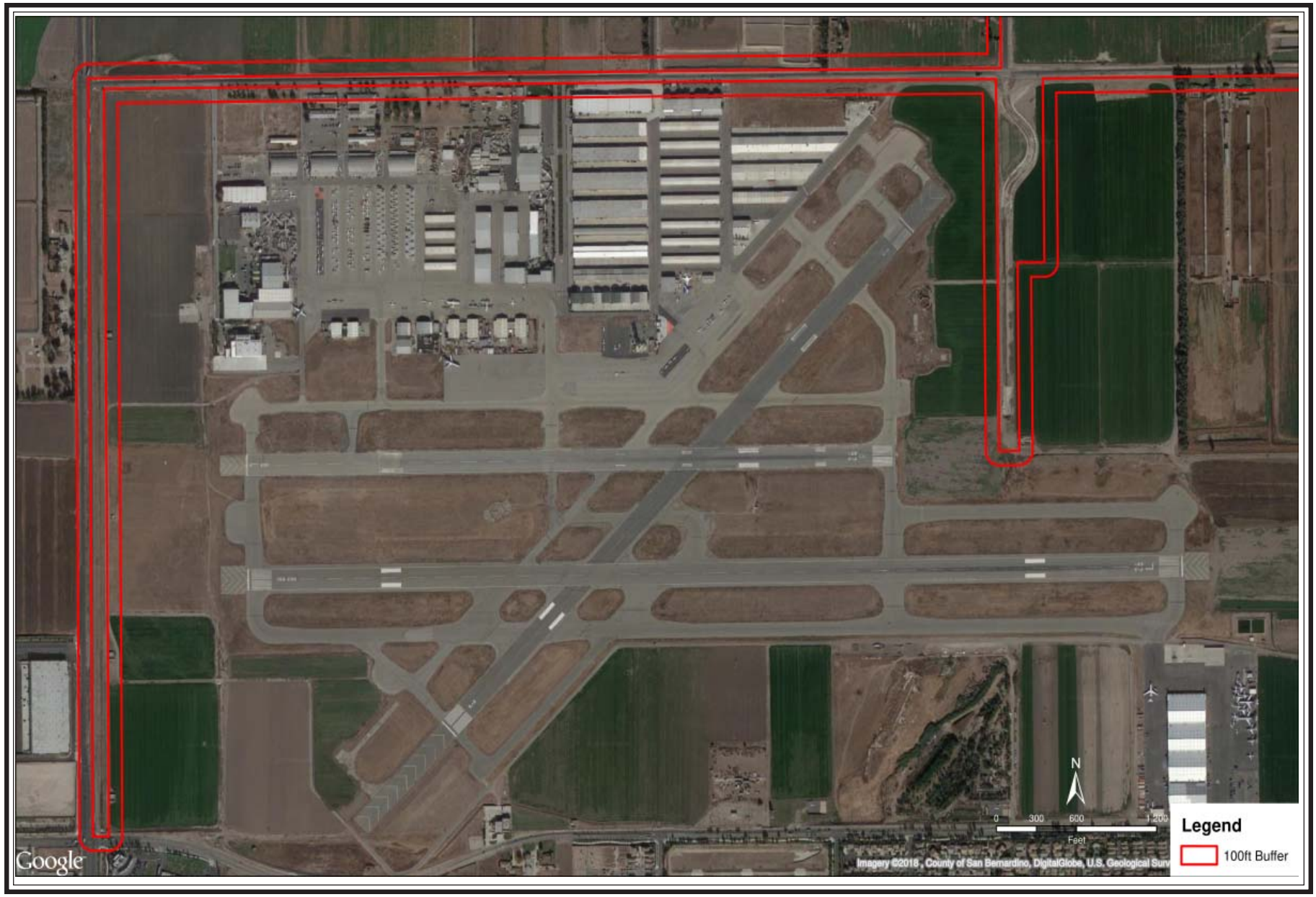
plate **3-0**

Regional Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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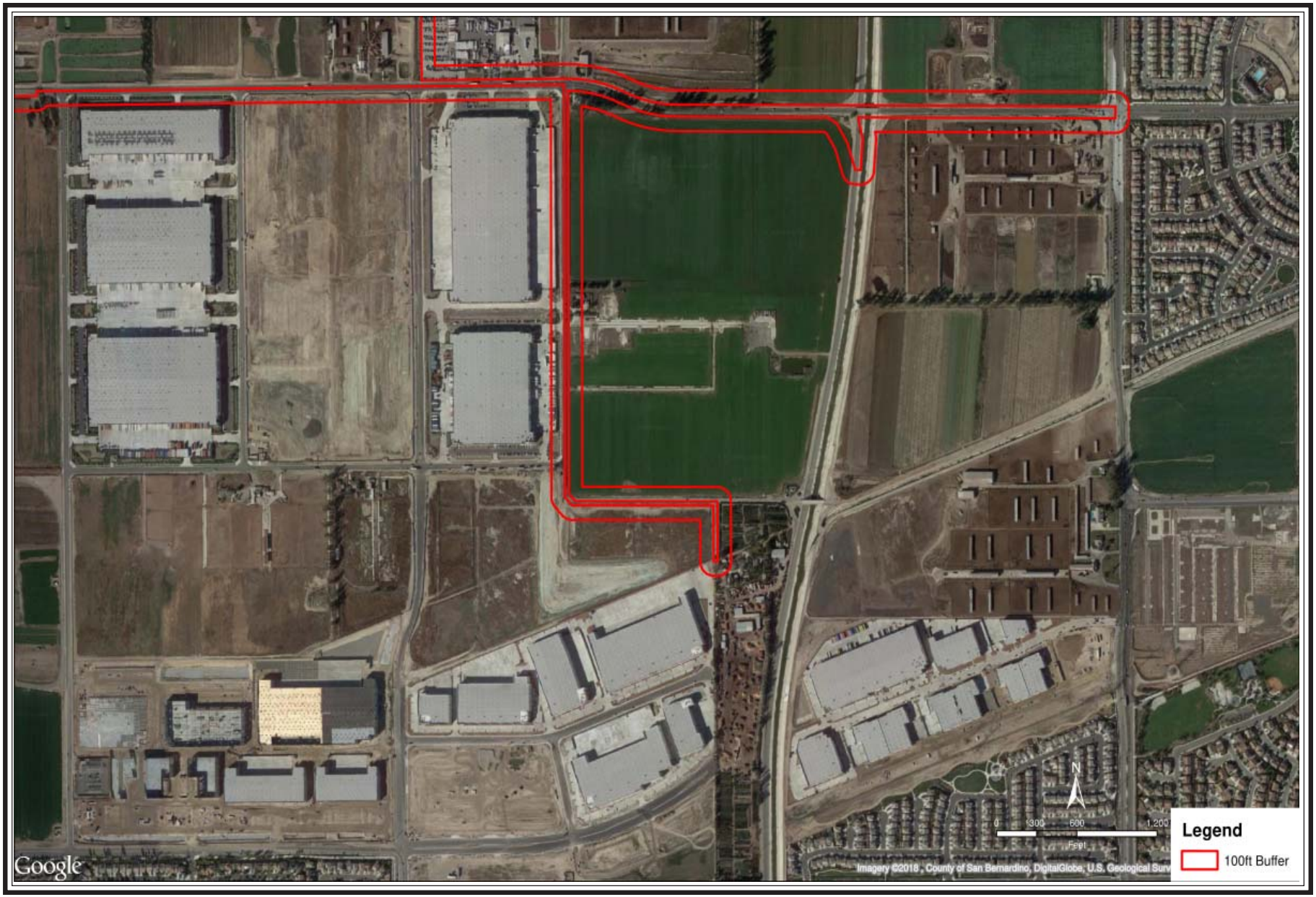
plate **3-1**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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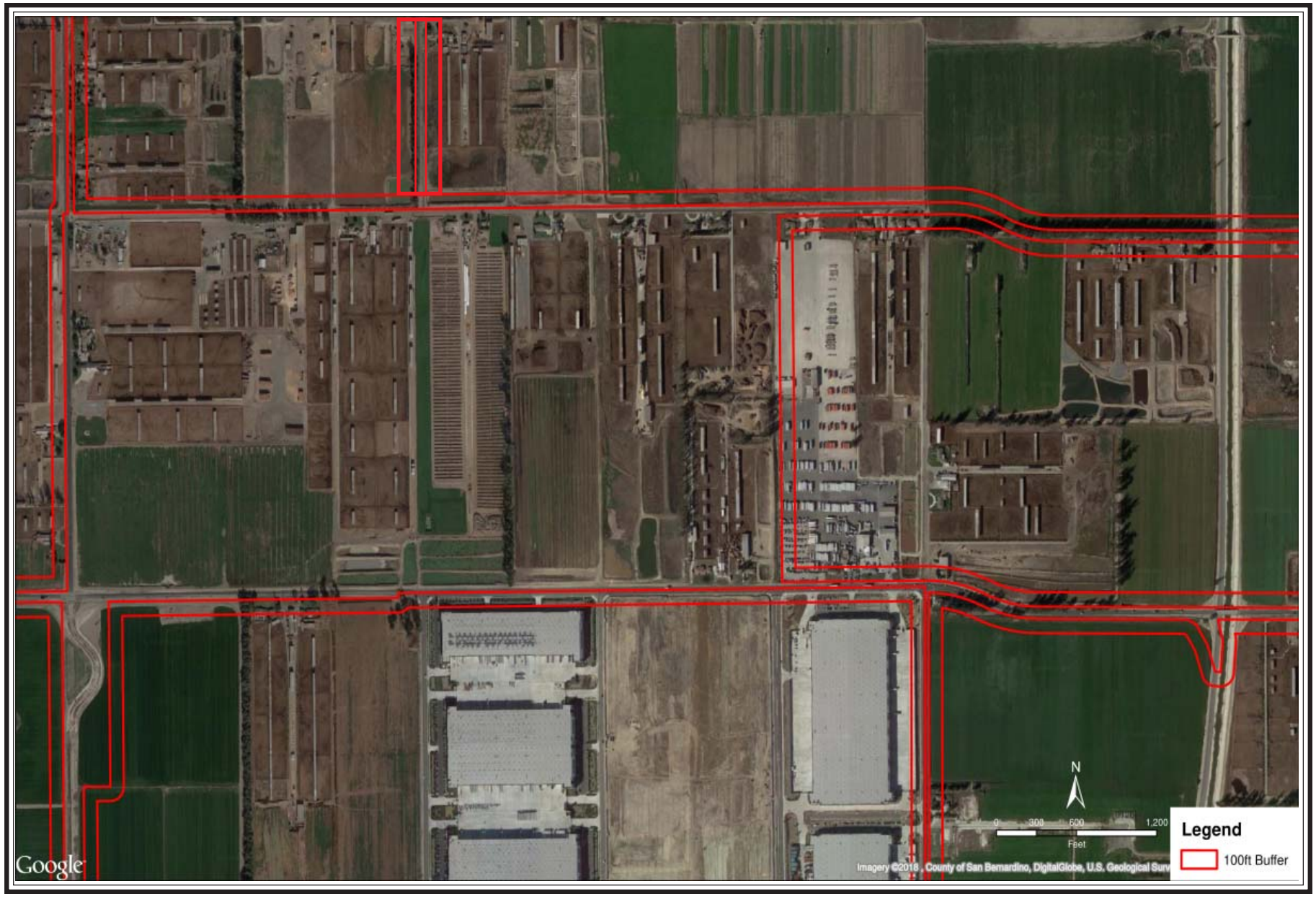
plate **3-2**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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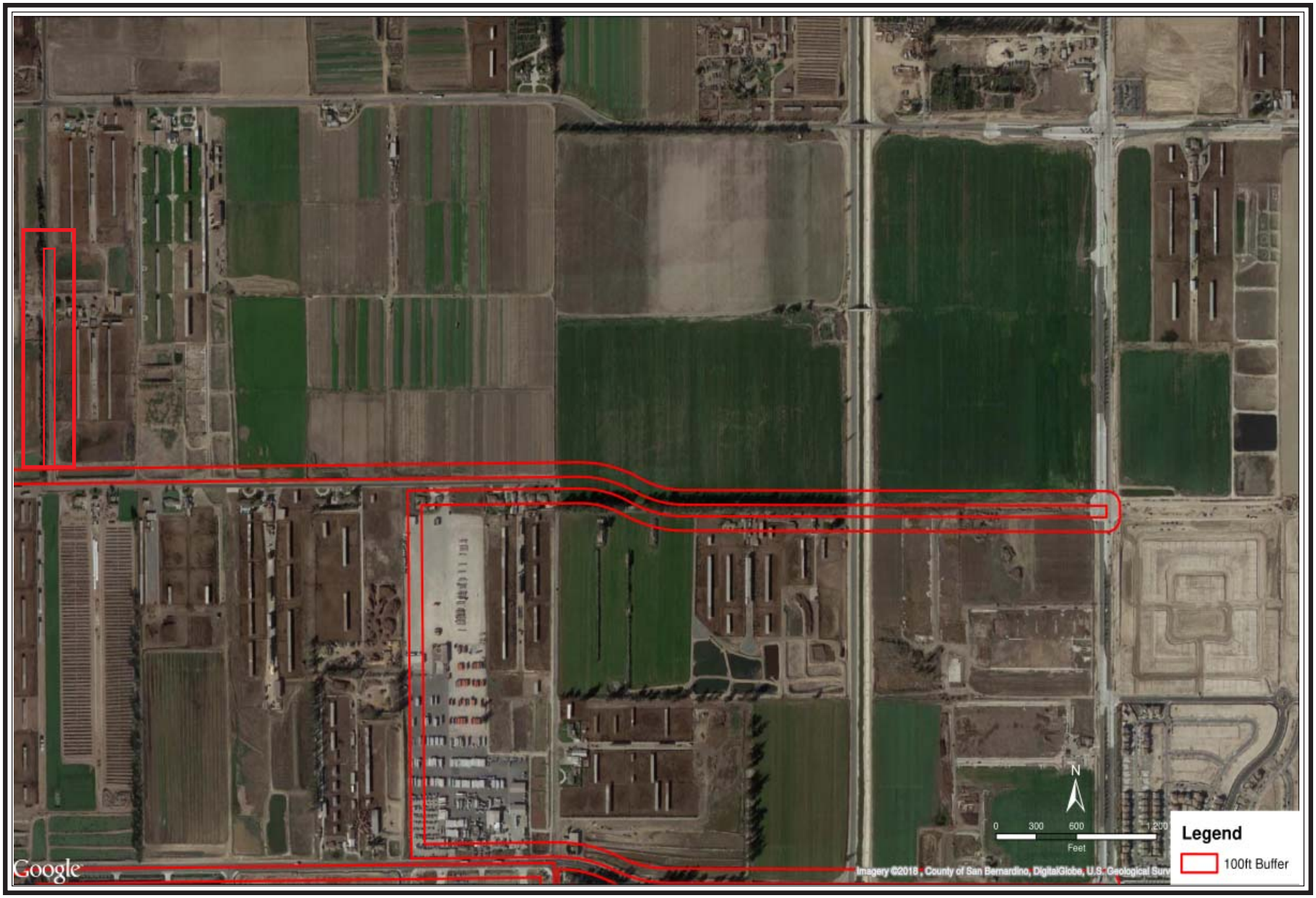
plate **3-3**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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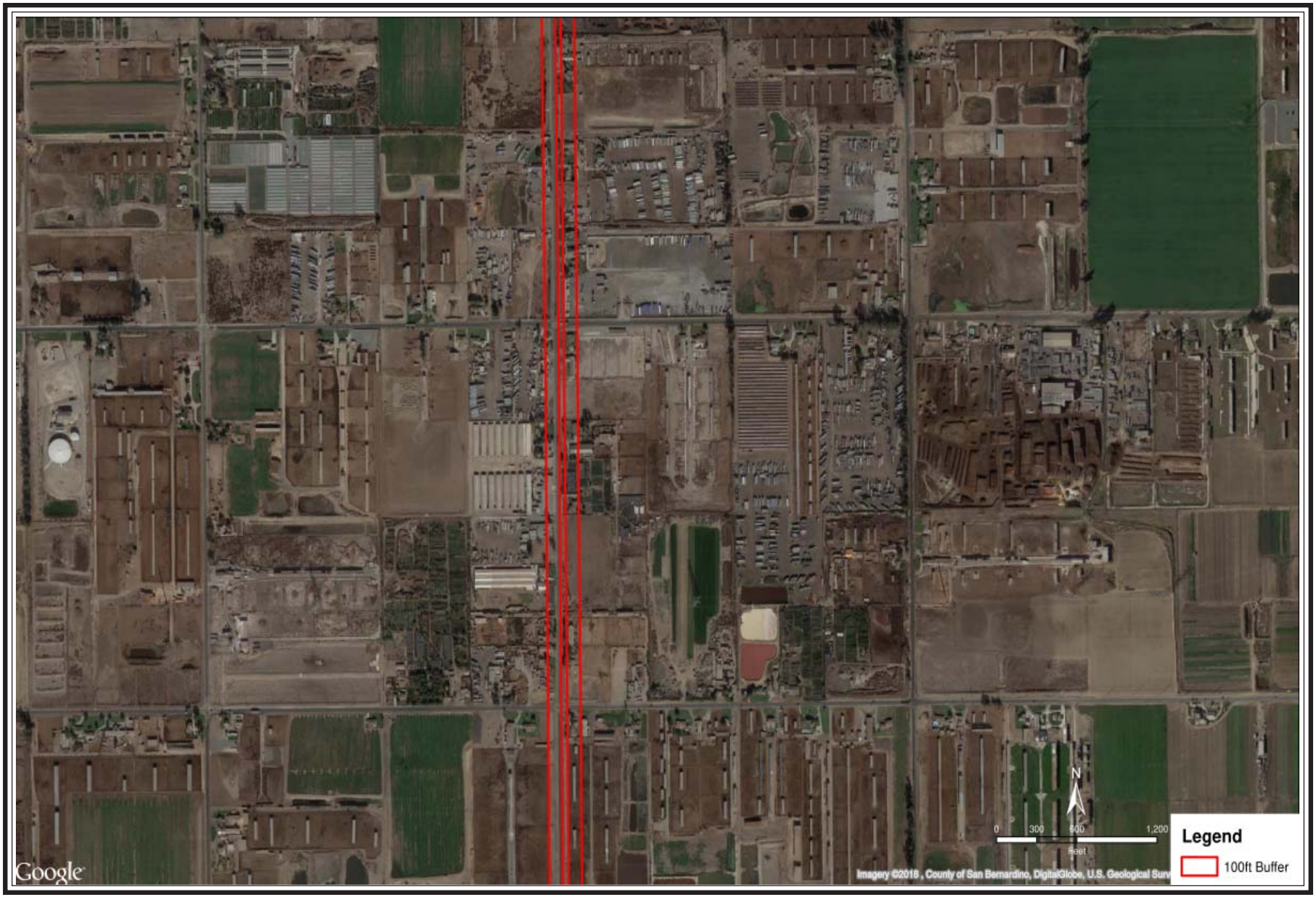
plate **3-4**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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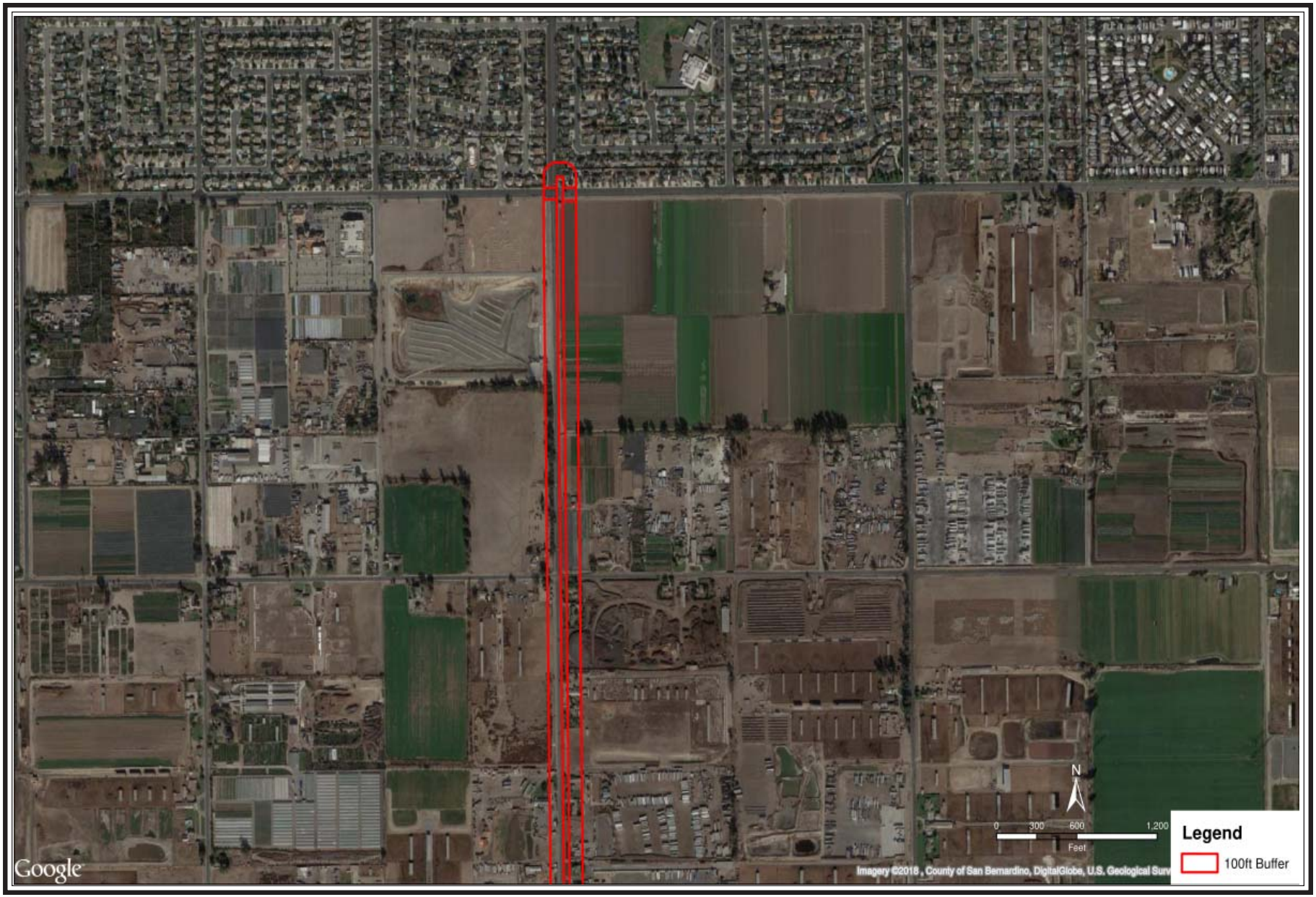
plate **3-5**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan



Source: Glenn Lukos Associates (2018)

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plate **3-6**

Site Vicinity Aerial

Merrill Commerce Center Specific Plan

Selected Species Overview

The FWS listed the DSFF as an endangered species on September 23, 1993. This species is only known to occur in association with Delhi sand deposits (USFWS 1997), primarily on twelve disjunct sites within a radius of about eight miles in the cities of Colton, Rialto, and Fontana in southwestern San Bernardino and northwestern Riverside counties. However, recent survey data (1997-03) indicates that DSFF occur in low numbers in Ontario, and also in sub-optimal habitat conditions. The DSFF is restricted to the Colton Dunes, which covers approximately 40 square miles. More than 95 percent of the formerly known habitat has been converted to human uses or severely affected by human activities, rendering it apparently unsuitable for occupation by the species (Smith 1993, USFWS 1997 in Kingsley 1996).

General Habitat Characteristics

Areas containing sandy substrates with a sparse cover of perennial shrubs and other vegetation constitute the primary habitat requirements for *Rhaphiomidas* flies (USFWS 1997). Potential habitat for the DSFF is typically defined as areas comprised of sandy soil (Delhi series) in open areas commonly dominated by three indicator plant species: California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californica*), and telegraph weed (*Heterotheca grandiflora*). Annual bur-sage (*Ambrosia acanthicarpa*), Rancher's fireweed (*Amsinckia menziesii*), autumn vinegar weed (*Lessingia glandulifera*), sapphire eriastrum (*Eriastrum sapphirinum*), primrose (*Oenothera* sp.), and Thurber's buckwheat (*Eriogonum thurberi*) are also commonly present at occupied DSFF sites. In addition, insect indicator species such as *Apiocera* and *Nemomydas* are also typically associated with occupied DSFF habitat. It is also important to note that the presence or absence of indicator species does not determine presence/absence of DSFF. Rather, these indicator species exhibit a strong correlation to habitats occupied by DSFF. A gradient of habitat suitability exists for DSFF, composed of varying degrees of both natural and artificial conditions.

Federal DSF Recovery Units / Core Reserves

Subregional areas encompassing smaller areas known to be inhabited by the DSFF or encompassing areas that contain restorable habitat for the DSFF have been grouped into three Recovery Units (RUs) by the FWS based on geographic proximity, similarity of habitat, and potential genetic exchange (USFWS 1997). The subject site is located within an area designated as the Ontario RU. The Ontario RU historically contained the largest block of the Colton Dunes; however, most lands in this RU have been converted to agriculture, or developed for commercial and residential projects (USFWS 1997). The Ontario RU contains several areas that currently support DSFF, and additional areas have been proposed for restoration in the DSFF Recovery Plan. The occupied and/or potentially restorable habitat in the RUs includes only those areas that, at a minimum, contain Delhi Series soils. Further, RUs do not include residential and commercial development, or areas that have been otherwise permanently altered by human actions (USFWS 1997). DSFF will continue to exist in the Ontario RU only with land conservation, a cessation of current habitat-degrading land management practices and recreational uses, and/or a restoration or natural reversion of ecologically damaged lands back to an ecological community typical of Delhi sands formations.

Potentially suitable habitats remaining in the Ontario RU are highly fragmented, and as such, the establishment of a permanent long-term reserve in this RU is currently unresolved. While many degraded sites are currently unsuitable to support DSFF, DSFF have been recorded on certain properties that have been heavily disturbed in the past (e.g., previously graded and/or scraped sites where a cessation of disturbance-related land uses have occurred such that a degree of natural conditions now occur). Accordingly, DSFF may persist on, or disperse to, certain properties that have not been exposed to recurring and/or recent land disturbances. These previously disturbed properties may be important for future preservation of the species in the region. In addition, individual DSFF have been recorded in areas generally considered unsuitable to support this taxon, and with no apparent connectivity to occupied DSFF habitats.

Additional data will be needed on reproduction and mortality rates, dispersal, and habitat variables before further refinement of RU boundaries, development of alternative RU preserve designs, and analyses of population can be made (USFWS 1997). Until such data is obtained, the highest priority will be to protect existing populations of the DSFF (USFWS 1997). To achieve downlisting, areas containing occupied and/or restorable habitat and dispersal corridors need to be evaluated relative to the extent of distribution patterns necessary to support secure populations. Sites to be protected should be selected based on habitat needs of adults and larvae, and willingness of landowners to participate in recovery efforts (USFWS 1997). Several "Core Reserve Areas" have been initially identified by the FWS, but to our knowledge, the actual extent of the proposed reserve areas has not been finalized.

Focused DSFF Survey Guidelines

The FWS prepared Presence/Absence Survey Guidelines for the DSFF in December 1996 (FWS 1996), with revisions in April 2004. In general, the guidelines maintain that in order to more fully determine the presence or absence of DSFF such that the results are acceptable to the FWS, a survey following these guidelines must be conducted. The guidelines require that surveys be conducted in all areas containing Delhi sands twice weekly (two days per week) during the single annual flight period from July 1 to September 20. However, at the discretion of the FWS, survey guidelines may be modified depending upon individual site circumstances (e.g., highly degraded sites that don't support constituent elements of potential DSFF habitat or early seasonal emergence periods). During the environmental review process, recommendations to perform focused DSFF surveys are evaluated by reviewing agencies on a site-by-site basis.

Methodology

Literature Search

Documentation pertinent to the biological resources in the vicinity of the site was reviewed and analyzed. Information reviewed included: (1) the Federal Register listing package for the federally listed endangered DSFF; (2) literature pertaining to habitat requirements of DSFF; (3) the California Natural Diversity Data Base (CNDDB 2019) information regarding sensitive species potentially occurring on the site for the "Corona North", "Prado Dam", "Guasti", and "Ontario" USGS 7.5-minute quadrangle maps, and (4) review of any available reports from the general vicinity of the site.

2018 Habitat-Suitability Evaluation

Ecological Sciences conducted a reconnaissance-level field survey on the subject site to evaluate potential habitat for DSFF on September 4-5, 2018. The survey was conducted by Scott Cameron, Principal Biologist (TE-808642-8) of Ecological Sciences, Inc. Ecological Sciences biologists have observed numerous DSFF in the field since 1995, and have extensive experience conducting both focused surveys and habitat evaluations for this sensitive taxon. Ecological Sciences is well versed with the biotic characteristics of a range of habitats occupied by DSFF, as well as other sensitive wildlife species potentially occurring in the area. The linear site was examined on foot (transects) and by vehicle along areas proposed for development. As mentioned, the primary objective of the two-day field visit was to generally evaluate the site's potential to support DSFF. Dominant plant species and other habitat characteristics present at the site were identified to assess the overall habitat value. Weather conditions included relatively clear skies, 1-3 breezes, and ambient temperatures of 76-87 ºF.

Existing Biological Environment

The subject site is generally characterized as a highly disturbed agricultural area under various forms of development. Active dairy farms and dairy-related infrastructure (sheds, corrals, etc.), feeding preparation areas, detention basins, ruderal pastureland, debris dumping areas, equipment storage areas, and cultivated crops are present. Much of the open pasture areas are exposed to routine discing activities. Manure, associated with ongoing agricultural operations, is present throughout much of the

dairy and pasture areas. The study area is located along existing asphalt/dirt roadways, some with deep, incised adjacent channels. Numerous single-family residences and commercial development are also present within the study area. The western portion of the site is located within the Chino Airport boundaries. Surrounding land uses include areas similar to the subject site such as agricultural, rural residential, and commercial.

Vegetation

The ruderal/disturbed areas support mostly invasive, non-native annual species. Dense non-native grasses generally covers on-site irrigated pasturelands and manure spreading areas. Cattle feeding areas were barren ground covered in manure and mud. Ruderal plants recorded on site included non-native grasses and weedy species such as foxtail chess (*Bromus madritensis* spp. *rubens*), ripgut grass (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), Mediterranean grass (*Schismus barbatus*), filaree (*Erodium* sp.), Lamb's quarter's (*Chenopodium album*), milk thistle (*Silybum marianum*), Russian thistle (*Salsola tragus*), golden crownbeard (*Verbesina encelioides*), puncture vine (*Tribulus terrestris*), black mustard (*Brassica nigra*), cheeseweed (*Malva parviflora*), pigweed (*Chenopodium* sp.), gum tree windrows (*Eucalyptus* sp.), salt cedar (*Tamarix* sp.), and Mexican fan palm (*Washingtonia robusta*). Native plant was recorded on site included common sunflower (*Helianthus annuus*), Jimsonweed (*Datura wrightii*), and rough cocklebur (*Xanthium strumarium*). ***Appendix A*** provides site photographs from various and representative locations throughout the study area.

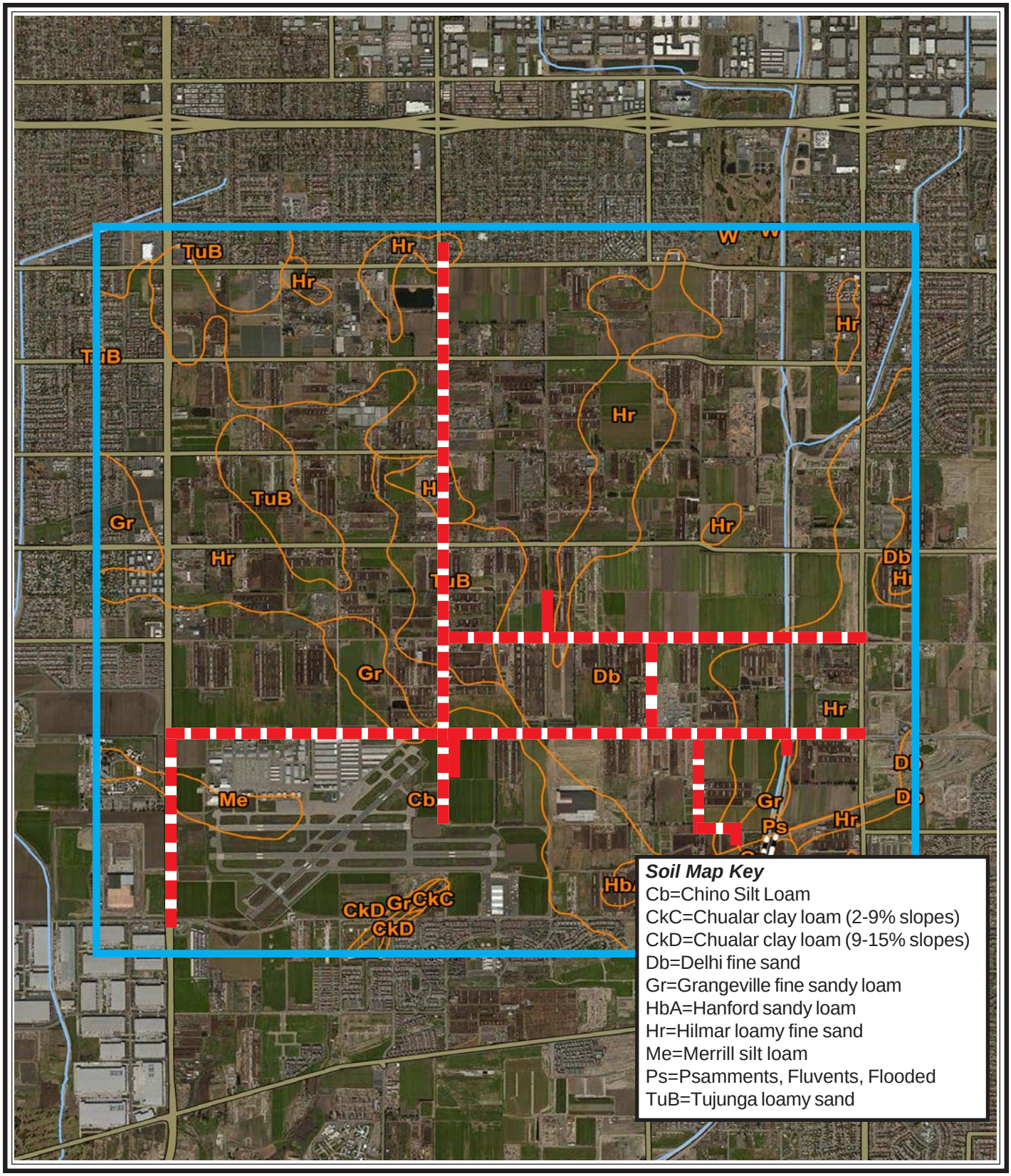
General Soils Analysis / Soil Conservation Map Review

A review of soil maps prepared for the area by the Natural Resource Conservation Service (NRCS 2018) indicate that the subject site is located within an area mapped as containing Chino Silt Loam (Cb), Chualar clay loam (CkC 2-9% slopes), Chualar clay loam (CkD 9-15% slopes) Delhi fine sand (Db), Grangeville fine sandy loam (Gr), Hanford sandy loam (HbA), Hilmar loamy fine sand (Hr), Merrill silt loam (Me); Psamments, Fluvents, Flooded (Ps), and Tujunga loamy sand (TuB). Various long-standing anthropogenic site disturbances such as agriculture have significantly altered the site's mapped surface soil characteristics. A general soils analysis was conducted due to the close association of DSFF to mostly open, sandy friable soils. ***Plate 4-0*** illustrates regional soils. ***Plates 4-1*** to ***4-6*** illustrate site vicinity soils.

Discussion

DSFF have relatively narrow habitat requirements that are determined by appropriate plant species and open sand as defining characteristics (Kingsley 1996). It has long been established that a gradient of suitability exists composed of varying degrees of natural and artificial conditions. Observations such as the DSFFs apparent avoidance of dense (both native and non-native) vegetation (>75% coverage) or general avoidance of vegetation that is sparse or not present at all (<5% coverage) appear to suggest that DSFF generally select habitats with a combination of some vegetation, including several species of plants, and some open space with bare sand (Kiyani 1996). The presence of Delhi soils appears to be the most determinative factor of whether an area can provide suitable DSFF habitat. Delhi sands constitute the primary component of a complex ecosystem. A variety of microhabitat characteristics generally constitute potential DSFF habitat (e.g., Delhi soils, vegetation composition, soil chemistry, topography, percent vegetative cover, frequency of non-native plant species, exposure to disturbances, etc.).

While the aforementioned microhabitat conditions are considered optimal/essential to support DSFF, DSFF sometimes occur in areas not typically considered suitable for this taxon. Although individual DSFF have been recorded from sites supporting mostly ruderal, non-native vegetation, most known DSFF-occupied sites contain areas, or are adjacent to areas, of relatively undisturbed exposed patches of friable, sandy soils in association with selected native plant species. History of DSFF colony sites indicates that previously disturbed (by grading, certain types of agriculture, etc.) Delhi sands formations may revert over a few years (through erosion, aeolian processes, fossorial animal activity, and natural



Source: Natural Resources Conservation Service (NRCS-website accessed September 2018)

= Study Areas

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plate **4-0**

Regional Soils

Merrill Commerce Center Specific Plan

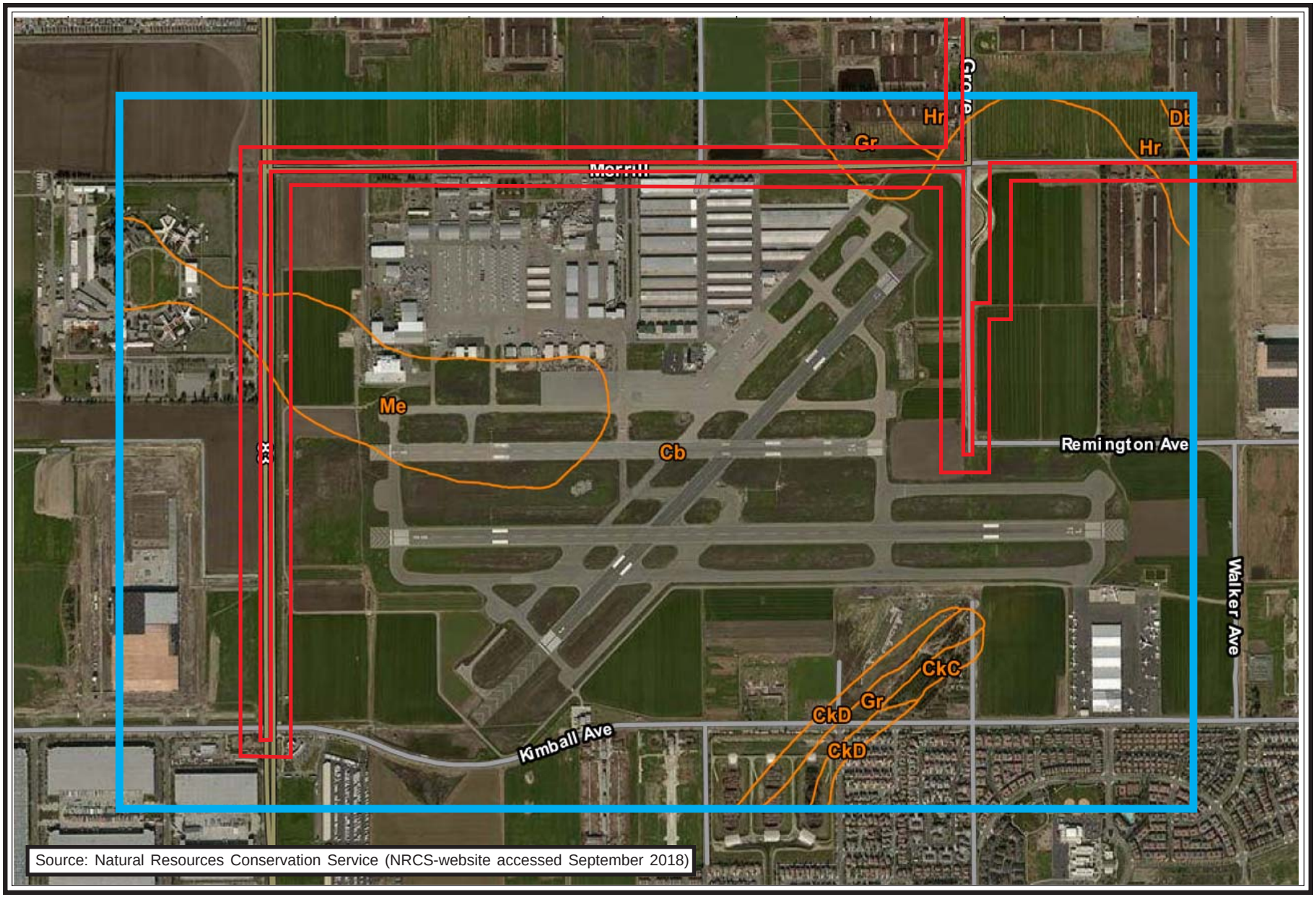

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plate **4-1**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

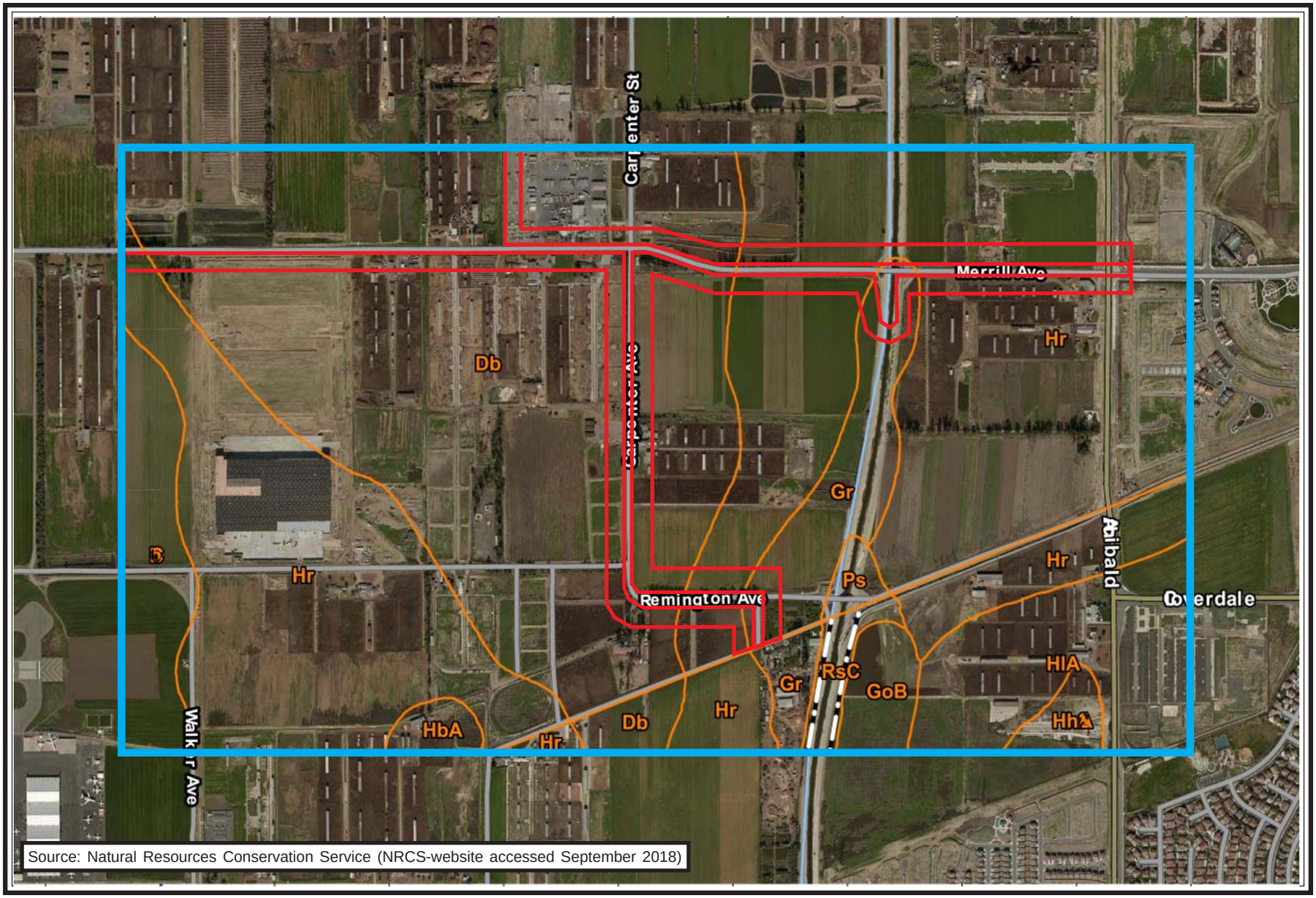

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plate **4-2**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

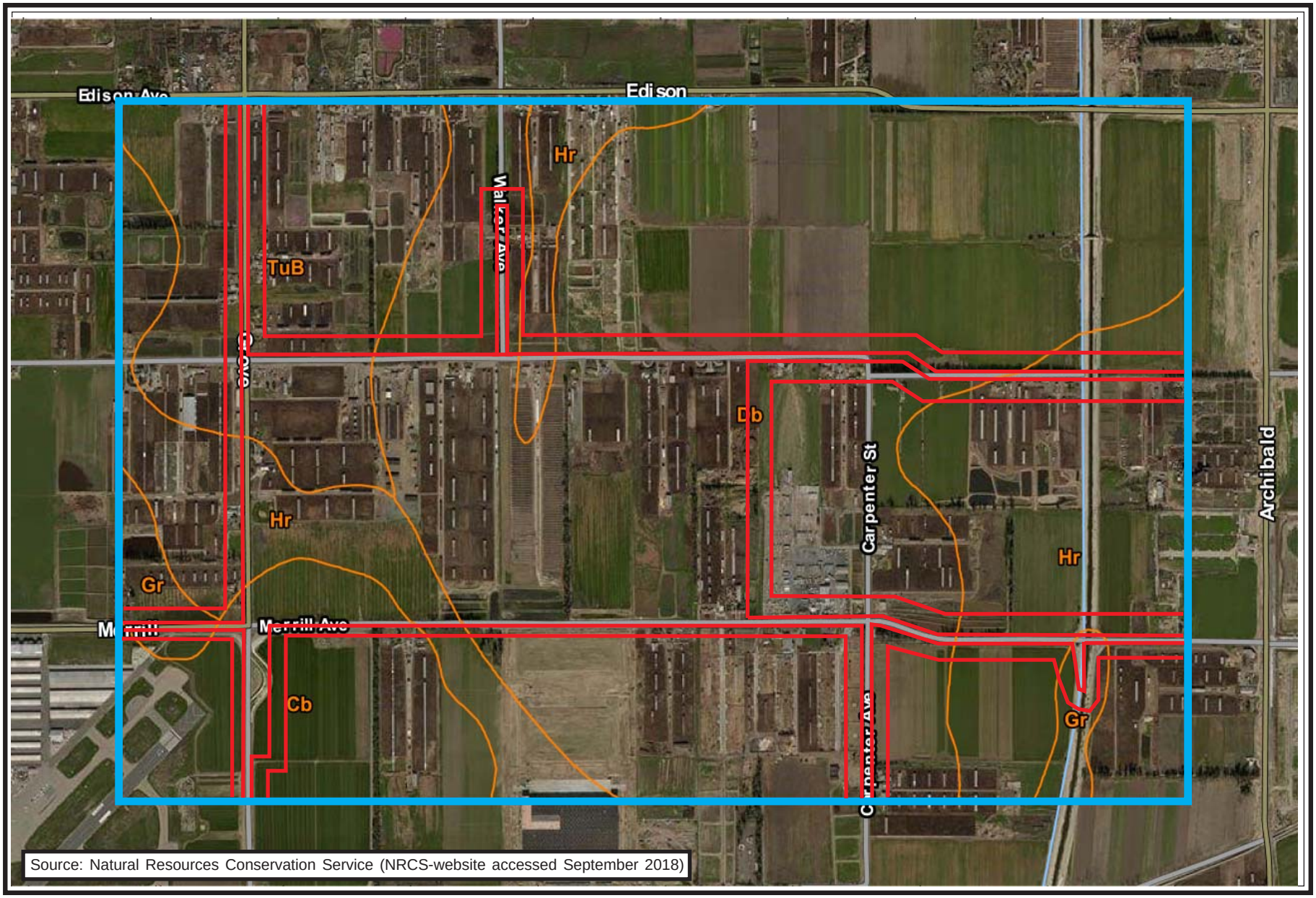

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plate **4-3**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

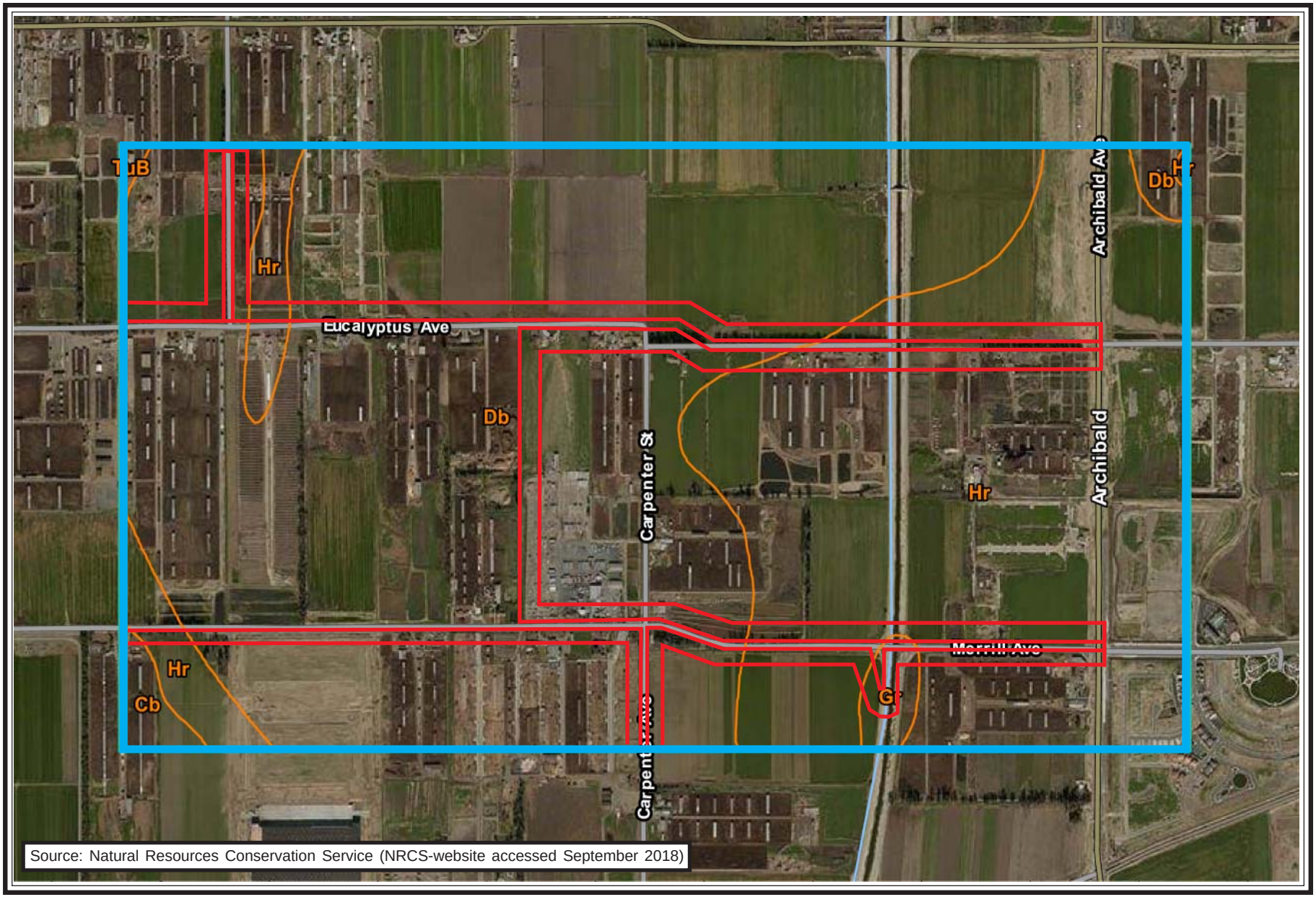

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plate **4-4**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

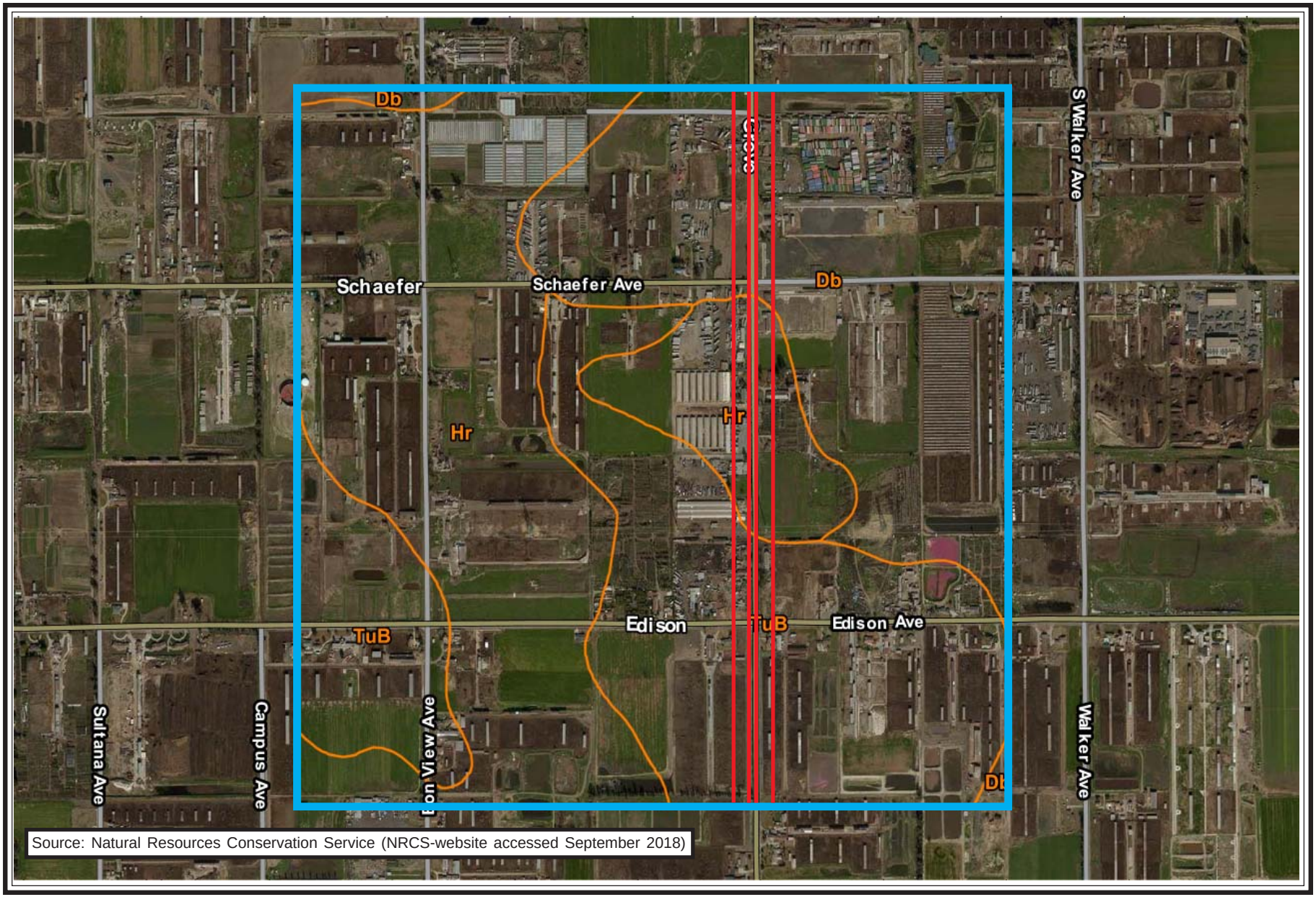

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plate **4-5**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

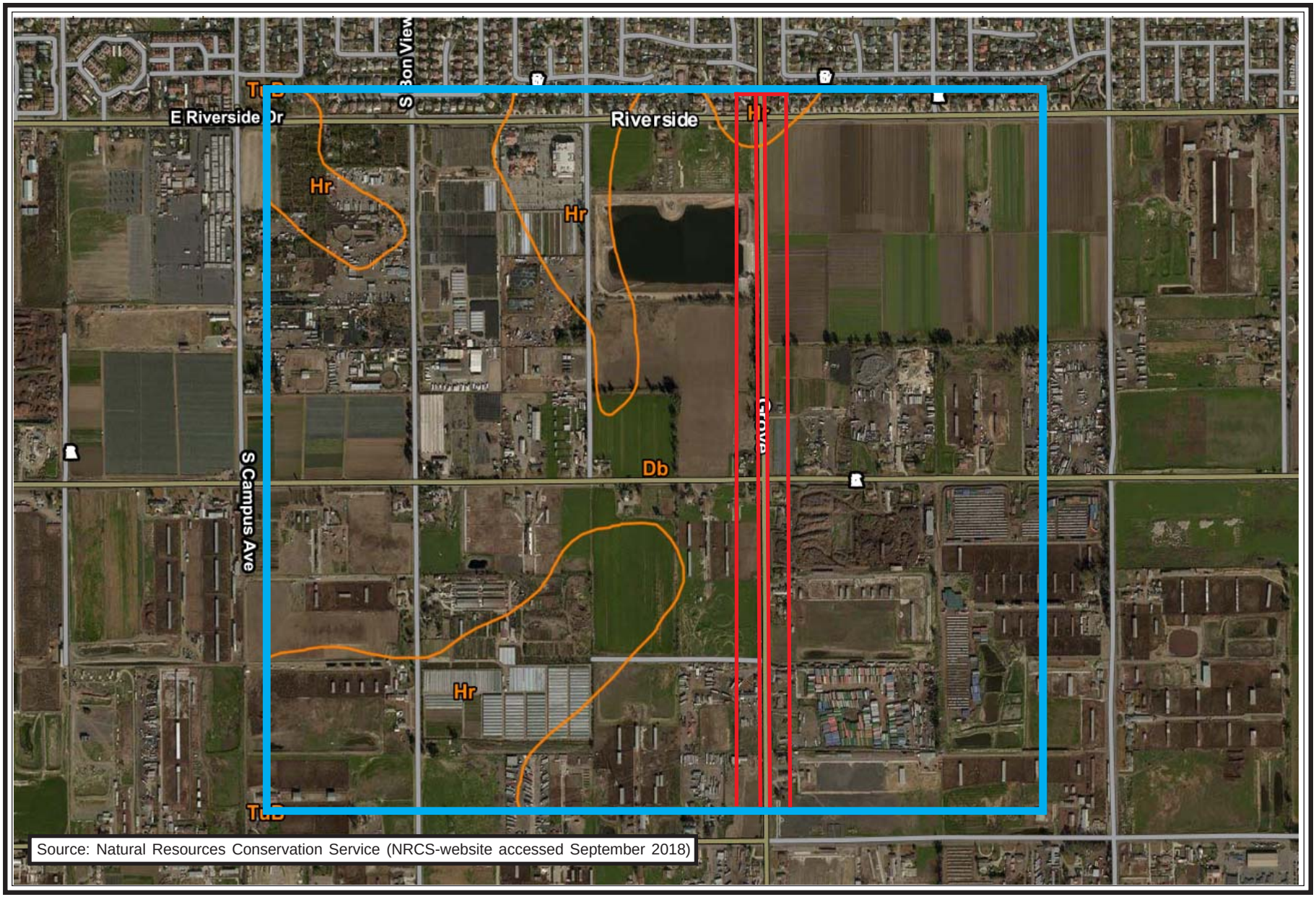

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plate **4-6**

Site Vicinity Soils

Merrill Commerce Center Specific Plan

vegetative succession) back to conditions capable of supporting DSFF populations. However, these natural processes are dependent upon a cessation of disturbance-related land uses, which prevent the natural reestablishment of a more characteristic Delhi sand community (associated with potential DSFF habitat).

Absent changes in existing land uses, or implementation of an extensive revegetation/restoration effort, the establishment of a more characteristic Delhi sand community (associated with potential DSFF habitat) within the study area would be prevented due to deleterious changes in soil chemistry and/or recurring soil disturbances associated with long standing and routine dairy/agricultural operations. Approaches to habitat restoration would vary from simple, relatively inexpensive, and predictably successful (in cases of enhancing partially occupied sites that are weed overgrown) to complex, costly, and unpredictable (in cases of manured or imported fill sites). Disruption of substrate is deleterious to DSFF habitat because it destroys the cryptoflora crust, which is important to resisting microorganisms and maintaining ecosystem integrity (Belnap 1994 in FWS 1997). Similarly, the presence of extensive amounts of manure greatly reduces or eliminates the potential use of the site by DSFF. The presence of manure degrades potential DSFF habitat, as manure smothers animals, plants, and habitat where it is dumped (FWS 1997). According to the DSFF Recovery Plan (FWS 1997), manure also provides high levels of nutrients for invasive exotic plants such as those recorded in dense coverages on the site. Moreover, restoration of manured sites, although possible, is of the lowest priority according to the DSFF Recovery Plan (FWS 1997). There exists, in our opinion, no possibility of DSFF to occur within the subject study area or on such habitats as exemplified by this site, and were DSFF introduced to the study area in its current condition, DSFF would not become established or persist on site.

There is no connectivity to the subject site from the nearest known (to us) DSFF population (±4-5 miles northeast of the site) due to the presence of existing development that entirely surrounds the site. While this species likely has the capability of dispersing over relatively large distances of seemingly unsuitable habitats under certain circumstances, it would be reasonable to assume (based on our current knowledge of the species) that the likelihood of DSFF dispersing to the subject site from the nearest known off-site occupied (or historically occupied) site would be extremely low despite the fact that variables such as the length, width, and structural characteristics of dispersal corridors are not fully understood. Accordingly, the subject site would not be considered a viable property for preservation or restoration due to current land use, absence of suitable habitat, geographic location. isolation from undeveloped areas or areas supporting DSFF populations, and surrounding land uses which have long since fragmented potential DSFF habitat in the area.

Conclusion

Based on results of the September 2018 DSFF habitat suitability evaluation, existing conditions present within the study area are not consistent with those known or expected to support DSFF. No exposed natural or semi-natural open areas with unconsolidated wind-worked granitic soils or dunes are present. Exposure to intensive and recurring substrate disturbances (e.g. active dairy operations, rural residential, commercial, agriculture activities) have substantial negative effects on potential DSFF habitat and prevents potentially suitable DSFF microhabitat conditions from developing. Substrate conditions are not consistent with those most often correlated with potential DSFF habitat and no DSFF plant associations are present on site.

Under current conditions, the site would generally be considered prohibitive to DSSF occupation. The underlying soil environment appears to be the most definitive factor of whether an area could potentially support DSFF. Accordingly, the quality of Delhi soils present within the study area was rated for its potential to support DSFF. The areas mapped as Delhi soils were visually inspected and rated based on a scale of 1 to 5, with 5 being the best quality and most suitable habitat in the biologist's judgment:

1. Soils dominated by heavy deposits of alluvial material including coarse sands and gravels with little or no Delhi sands and evidence of soil compaction. *Unsuitable.*

2. Delhi sands are present but the soil characteristics include a predominance of alluvial materials (Tujunga Soils). *Very Low Quality.*

3. Although not clean, sufficient Delhi sands are present to prevent soil compaction. Some sandy soils exposed on the surface due to fossorial animal activity. *Low Quality*.

4. Abundant clean Delhi sands with little or no alluvial material or Tujunga soils present. Moderate abundance of exposed sands on the soil surface. Low vegetative cover. Evidence of moderate degree of fossorial animal activity by vertebrates and invertebrates. *Moderate Quality*

5. Sand dune habitat with clean Delhi sands. High abundance of exposed sands on the soil surface. Low vegetative cover. Evidence (soil surface often gives under foot) of high degree of fossorial animal activity by vertebrates and invertebrates. *High Quality*

Based on the above ratings and existing site conditions, the ±536-acre study area (Merrill Commerce Center Specific Plan) would be considered *Unsuitable* for DSFF. In view of the site's highly disturbed and isolated condition, exposure to extensive and recurring surface disturbances, and analyses of correlative habitat information from a wide range (e.g., relatively disturbed to more natural habitats) of occupied DSFF habitats in the region, the subject site does not contain habitat suitable to support or sustain a viable DSFF population. Therefore, no impacts to DSFF are expected and no mitigation is required for less than significant impacts under CEQA.

Φ

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological survey, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

Sincerely,

Ecological Sciences, Inc.

Scott D. Cameron
Principal Biologist

References

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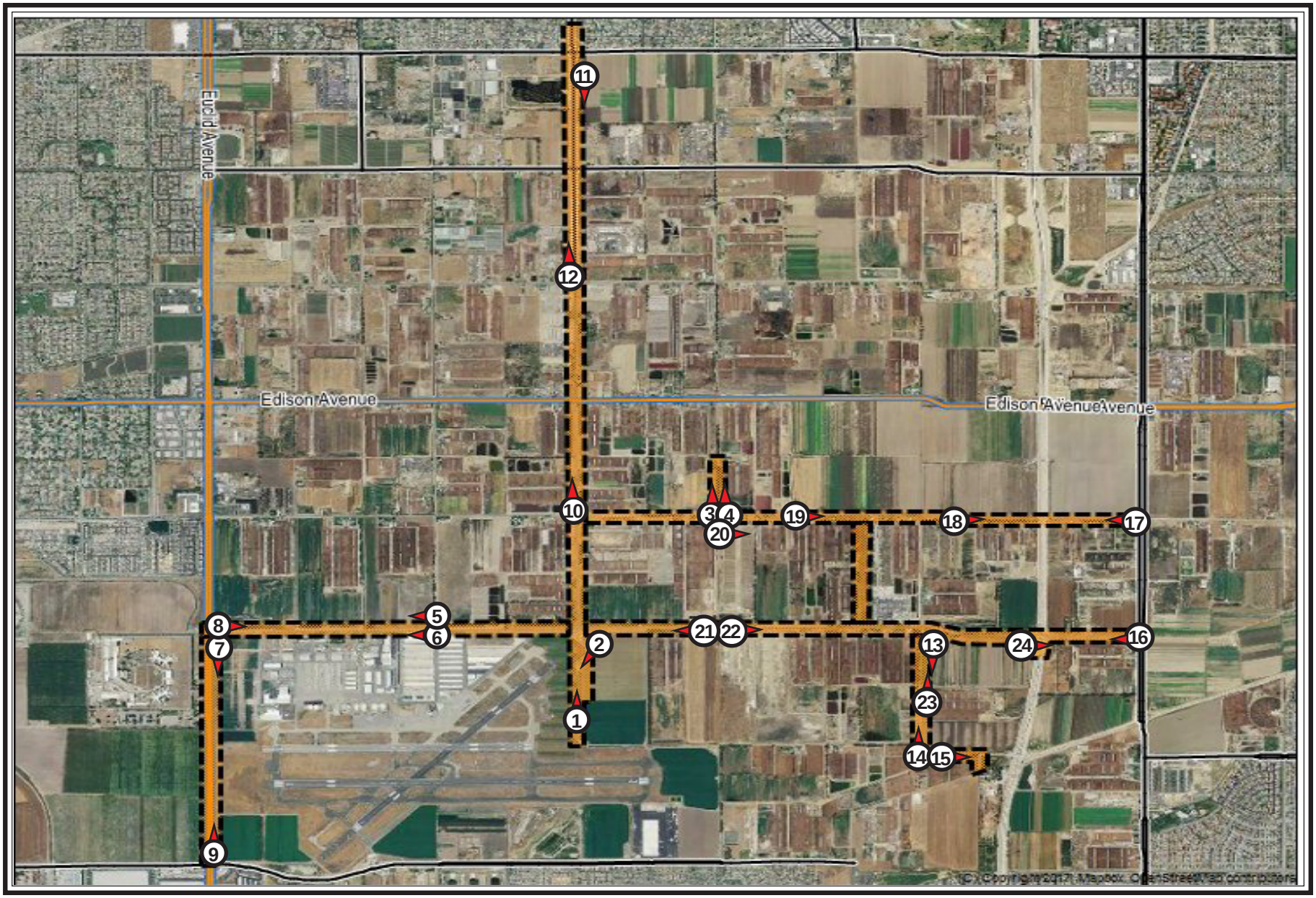
Appendix A
Site Photographs



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Appendix **A-O**

Photograph Locations

Merrill Commerce Center Specific Plan

Photo 1. View to north

Photo 2. View to southwest

Photo 3. View to north

Photo 4. View to north

Photo 5. View to west

Photo 6. View to west

Photo 7. View to south

Photo 8. View to east

Photo 9. View to north

Photo 10. View to north

Photo 11. View to south

Photo 12. View to north

Photo 13. View to south

Photo 14. View to north

Photo 15. View to east

Photo 16. View to west

Photo 17. View to west

Photo 18. View to east

Photo 19. View to east

Photo 20. View to east

Photo 21. View to east

Photo 22. View to west

Photo 23. View to north

Photo 24. View to east