1630 SAN PABLO AVENUE, SUITE 300
OAKLAND, CALIFORNIA 94612
T 510.601.2500 F 510.601.2501

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Candice Bigley
Project Manager
PMB | Advancing Healthcare Real Estate
3394 Carmel Mountain Road, Suite 200
San Diego, California 92121

Subject: Results of Special-Status Plant Survey for the Proposed Rodeo Creek Gulch Storm Drain Project, Santa Cruz County, California

Dear Ms. Bigley:

This report documents the findings of focused, special-status plant surveys that were conducted by Dudek along three alternative alignments of a new storm water pipeline between Chanticleer Avenue and Mattison Lane that terminates at outfalls just west of Rode Creek Gulch within the County of Santa Cruz, California (see Figure 1). The survey was completed to determine the presence of any special-status plant species. For the purposes of this report, special-status plant species are defined as follows:

- Plant species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act;
- Plant species that are listed or designated as candidates for listing as rare, threatened, or endangered under the California Endangered Species Act;
- Plant species assigned to California Rare Plant Ranks 1A, 1B, and 2;
- Plant species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act guidelines; and/or
- Plant species that are considered to be a taxon of special concern by local agencies.

1 Study Area Location and Description

The proposed storm drain would be installed along the westbound lane of Soquel Avenue and would terminate at an outlet along the west bank of Rodeo Gulch. Dudek evaluated the anticipated impact area, plus a 300-foot buffer totaling approximately 32.69 acres ("the study area"; see Figure 1). The study area is approximately 1.25 miles from the Pacific Ocean and is not within the California coastal zone.

The study area consists of a highly disturbed and previously developed parcel in an urbanized setting. The surrounding area is substantially developed and is dominated by commercial land uses, streets, and parking lots. The study area primarily supports ruderal and ornamental plant species bordering riparian oak woodland. Elevations range from approximately 50 to 100 feet above mean sea level (AMSL).

The study area is located in Section 9 of Township 11 South, Range 1 West, of the Soquel, California 7.5-minute U.S. Geological Survey quadrangle (Figure 1). The study area includes the construction footprint associated with the installation of a new storm drain extending from Assessor's Parcel Number 029-021-47 (between Chanticleer Avenue and Mattison Lane; Soquel Property), along Soquel Avenue, and terminating within the west bank of Rodeo Creek Gulch.

2 Existing Conditions

The study area is characterized by the following vegetation communities and land covers: developed, disturbed annual grassland, and riparian oak woodland along Rodeo Creek Gulch (see Figure 2). The developed land cover type includes transportation routes, parking lots, and commercial land that supports very limited ornamental tree and shrub plantings along Soquel Avenue and the commercial parcels to the south. Disturbed annual grassland is limited to a narrow strip along the west side of Rodeo Creek Gulch. This vegetation community is composed of ruderal and non-native species including bur clover (*Medicago polymorpha*), Harding grass (*Phalaris* sp.), perennial rye grass (*Festuca perennis*), soft brome (*Bromus hordeaceus*), wild oat (*Avena fatua*), wild radish (*Raphanus raphanistrum*), and a few other herbaceous species commonly found in heavily disturbed areas. The riparian oak woodland spans the width of the gently sloping grades along Rodeo Creek Gulch. This natural woodland community was characterized by a dense overstory of mature coast live oak (Quercus agrifolia) trees with some arroyo willow (*Salix lasiolepis*) and California bay (*Umbellularia californica*). The understory consisted of a mix of shrubs, vines, and herbaceous species, including California blackberry (*Rubus ursinus*), curly doc (*Rumex crispus*), English ivy (*Hedera helix*), narrow-leaf plantain (*Plantago lanceolata*), and poison oak (*Toxicodendron diversilobum*).

3 Methods

Focused special-status plant surveys were conducted on May 22 and June 20, 2019 by Dudek botanist Lasthenia Michele Lee. The timing of the surveys coincided with the blooming period for all target species during at least one survey pass. All surveys were conducted during daylight hours under weather conditions that did not preclude observation of special-status plant species (e.g., surveys were not conducted during heavy fog or rain). The surveys were floristic in nature and consisted of walking meandering transects through all accessible portions of the study area and documenting all plant species encountered. The surveys followed recommended methodology described in the *CNPS Botanical Survey Guidelines* (CNPS 2001), the *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities* (CDFW 2009), and the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). All plant species observed within the study area were identified to the lowest taxonomic level to determine rarity. Species identified during the survey were recorded for inclusion within a plant compendium (Attachment A). Latin and common names for plant species with a California Rare Plant Rank (CRPR) follow the *Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2019). For plant species without a CRPR, Latin names follow the *Jepson eFlora* (Jepson Flora Project 2019), and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2019).

Based on the results of Dudek's previous habitat assessment, two special-status plant species were determined to have at least a moderate potential to occur within the study area. These species were the focus of the surveys and include those summarized in Table 1.

Table 1 – Target Special-Status Plant Species

Scientific Name	Common Name	Status (Federal/State/CRPR)
Holocarpha macradenia	Santa Cruz tarplant	FT/SE/1B.1
Pentachaeta bellidiflora	white-rayed pentachaeta	FE/SE/1B.1

Source: CNPS 2019, CDFW 2019

4 Survey Results

A total of 74 species of native or naturalized plants — 27 native (36%) and 47 non-native (64%) — were recorded within the survey area. All species observed within the study area are included in Attachment A. No special-status plant species were identified within the study area during the surveys. The surveys were conducted at a time when target special-status plant species would be evident and identifiable. Although the California annual grassland may provide potentially suitable habitat for special-status species, the cover of nonnative grasses onsite was so great that it is unlikely these native plants can compete.

Please contact me at rhenry@dudek.com, or 510.601.2518 if there are any questions or concerns regarding the information presented herein.

Sincerely,

Ryan Henry
Senior Biologist/Project Manager

Att.: Figure 1 – Project Location
Figure 2 – Proposed Project and Environmental Setting
A – Plant Species Observed within the Study Area
Cc: Stephanie Strelow, Dudek

References Cited

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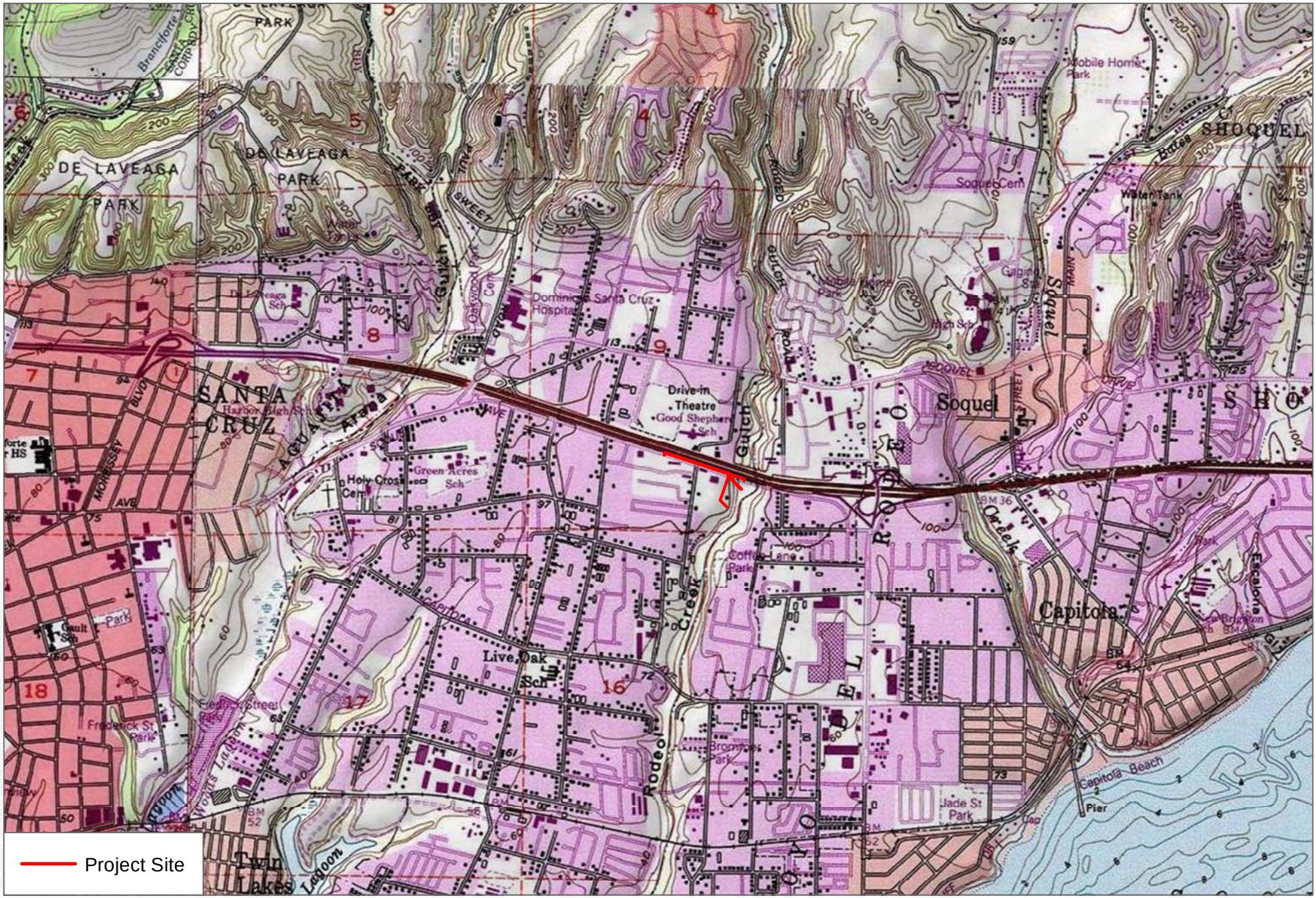

SOURCE: USGS, 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Rodeo Gulch Storm Drain Project

SOURCE: NHD, 2018
ESRI, 2018

DUDEK

0 100 200 Feet

FIGURE 2

Proposed Project and Environmental Setting

Rodeo Gulch Storm Drain Project

Attachment A

Plant Species Observed within the Study Area

EUDICOTS

VASCULAR SPECIES

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Toxicodendron diversilobum—poison oak

APIACEAE—CARROT FAMILY

Conium maculatum—poison hemlock*
Foeniculum vulgare—fennel*
Oenanthe sarmentosa—water-parsley
Torilis arvensis—spreading hedgeparsley*

ARALIACEAE—GINSENG FAMILY

Hedera helix—English ivy*

ASTERACEAE—SUNFLOWER FAMILY

Baccharis pilularis—coyote brush
Carduus pycnocephalus—Italian plumeless thistle*
Cirsium vulgare—bull thistle*
Hypochaeris glabra—smooth cat's ear*
Hypochaeris radicata—hairy cat's ear*
Silybum marianum—blessed milkthistle*
Sonchus oleraceus—common sowthistle*

BRASSICACEAE—MUSTARD FAMILY

Raphanus raphanistrum—wild radish*
Raphanus sativus—cultivated radish*

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY

Symphoricarpos albus var. *laevigatus*—common snowberry

CONVOLVULACEAE—MORNING-GLORY FAMILY

Convolvulus arvensis—field bindweed*

CORNACEAE—DOGWOOD FAMILY

Cornus canadensis—bunchberry

FABACEAE—LEGUME FAMILY

Acmispon americanus—Spanish clover
Cytisus scoparius—broom*
Genista monspessulana—French broom*

Lotus corniculatus—bird's-foot trefoil*
Medicago polymorpha—burclover*
Trifolium angustifolium—narrowleaf crimson clover*
Vicia sativa—garden vetch*
Vicia villosa—winter vetch*

FAGACEAE—OAK FAMILY

Quercus agrifolia var. *agrifolia*—coast live oak
Quercus agrifolia—coast live oak

GERANIACEAE—GERANIUM FAMILY

Geranium dissectum—cutleaf geranium*

LAURACEAE—LAUREL FAMILY

Umbellularia californica—California bay

MYRSINACEAE—MYRSINE FAMILY

Lysimachia arvensis—scarlet pimpernel*

MYRTACEAE—MYRTLE FAMILY

Eucalyptus globulus—Tasmanian bluegum*

PAPAVERACEAE—POPPY FAMILY

Eschscholzia californica—California poppy

PLANTAGINACEAE—PLANTAIN FAMILY

Plantago lanceolata—narrowleaf plantain*

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamore

POLYGONACEAE—BUCKWHEAT FAMILY

Rumex acetosella—common sheep sorrel*
Rumex crispus—curly dock*
Rumex pulcher—fiddle dock*

ROSACEAE—ROSE FAMILY

Rubus armeniacus—Himalayan blackberry*
Rubus ursinus—California blackberry

RUBIACEAE—MADDER FAMILY

Galium aparine—stickywilly

SALICACEAE—WILLOW FAMILY

Salix laevigata—red willow

Salix lasiolepis—arroyo willow

URTICACEAE—NETTLE FAMILY

Urtica dioica—stinging nettle

GYMNOSPERMS AND GNETOPHYTES

VASCULAR SPECIES

CUPRESSACEAE—CYPRESS FAMILY

Sequoia sempervirens—redwood

MONOCOTS

VASCULAR SPECIES

ARACEAE—ARUM FAMILY

Lemna minor—common duckweed

Zantedeschia aethiopica—calla lily*

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge

JUNCACEAE—RUSH FAMILY

Juncus mexicanus—Mexican rush

Juncus patens—western rush

ORCHIDACEAE—ORCHID FAMILY

Epipactis helleborine—broadleaf helleborine*

POACEAE—GRASS FAMILY

Avena barbata—slender oat*

Avena fatua—wild oat*

Briza minor—little quakinggrass*

Bromus carinatus—California brome

Bromus diandrus—ripgut brome*

Bromus hordeaceus—soft brome*

Bromus laevipes—Chinook brome

Cynodon dactylon—Bermudagrass*

Danthonia californica—California oat grass

Elymus condensatus—giant wild rye
Elymus glaucus—blue wildrye
Festuca bromoides—brome fescue*
Festuca perennis—perennial rye grass*
Holcus lanatus—common velvet grass*
Hordeum murinum ssp. *leporinum*—hare barley*
Phalaris aquatica—Harding grass*
Stipa pulchra—purple needlegrass

* signifies introduced (non-native) species