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## Biological Assessment

Cardey Residence Driveway Repair Use Permit Exception to  
the Conservation Regulations, #P18-00116-UP &  
Request for Exception to Road and Street Standards  
Planning Commission Hearing June 20, 2018



April 27, 2018

Dr. Steven Cardey  
1100 McCormick Lane  
Napa, CA 94558

RE: Biological Assessment at 1100 McCormick Lane, Napa County  
Driveway Repair and Improvement Plan

Dear Dr. Cardey:

At your request, WRA, Inc. conducted a biological assessment at 1100 McCormick Lane (Study Area), in Napa, California on April 5, 2018. McCormick Lane extends southward from Browns Valley Road in the western area of The City of Napa (Figure 1). The property (APN: 050-270-009) covers approximately 14.5 acres, however the driveway improvement project that is the focus of the assessment covers only approximately 0.6 acre. The driveway improvement is needed because a landslide on the south bank of Browns Valley Creek destroyed a portion of the driveway in February 2017. The purpose of this assessment was to observe existing biological conditions and determine potential impacts that may be caused by the driveway improvement work to special-status species and/or sensitive habitat, if any.

### **Methods**

A site visit to the Study Area was made on April 5, 2018 to observe existing conditions and additional information was obtained by reviewing current publicly available document lists, maps, and aerial photographs including:

- CNDDDB records (CDFW 2018)
- USFWS Information for Planning and Conservation Website (USFWS 2018)
- CNPS Rare Plant Inventory R(CNPS 2018)
- Natural Resources Conservation Service (2018)
- Google Earth Aerial Photography (Google Earth 2017)

During the site visit, the Study Area was inspected to determine the condition of the riparian forest along Browns Valley Creek and the uplands forest area where the driveway repair and improvements will be conducted. Representative photographs taken during the site visit are attached.

## Existing Conditions

### *Existing Driveway and Landslide*

The existing driveway begins just south of the McCormick Lane bridge crossing Browns Valley Creek. The original driveway made a gradual curve to the east and back to the west while ascending a hill and continuing more or less due south to the northwest corner of the main property area. The landslide affected the lower part of the driveway, including a portion shared with the neighboring property, that veers eastward to the Moose Lodge. The slide moved northward toward the creek and caused breaks in the asphalt driveway and dislodged several large diameter trees. Some of the trees, although dislodged, were still living at the time of the site visit, but their long-term prognosis for continuing survival is unknown. Most of the vegetation that existed prior to the landslide had been removed from the landslide area after the slide occurred in order to expose the landslide conditions and allow observation and testing to determine how to repair or re-establish the driveway.

The landslide disrupted the existing storm runoff drainage system that had been in place. Runoff from upslope flowed in a series of rock-lined roadside ditches and culverts crossing the driveway, culminating at a 24-inch diameter metal culvert outfall on the upper bank of Browns Valley Creek. A temporary plastic culvert (15-inch diameter) was installed above the landslide area after the slide occurred in order to divert water away from the slide area. The storm runoff system will be redesigned as part of the driveway improvements.

### *Biological Communities*

Two biological community types were observed that would be potentially affected by the driveway repair and improvement project. Upland forest with coast live oak (*Quercus agrifolia*) and California bay (*Umbellularia californica*) occupied the area upslope from the creek. The riparian forest and stream community along Browns Valley Creek, in addition to coast live oak and California bay, also included big leaf maple (*Acer macrophyllum*), California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), and poison oak (*Toxicodendron diversilobum*). The forest community overstory created a closed canopy such that understory vegetation was not dense. Understory vegetation in the Project Area included a mixture of native grasses and forb species, such as bedstraw (*Galium aparine*), peppergrass (*Lepidium nitidum*), and soap plant (*Chlorogalum pomeridianum*), and non-natives, such as spring vetch (*Vicia sativa*), milk thistle (*Silybum marianum*), bird's foot trefoil (*Lotus corniculatus*), and rippgut grass (*Bromus diandrus*).

Browns Valley Creek along the northern boundary of the project area is an intermittent stream (dries by early spring), but is shown on USGS quadrangle map as a "blue line" stream. At its confluence with Redwood Creek approximately one mile downstream of the Project Area, the two creeks become Napa Creek which is tributary to the Napa River approximately two miles farther to the east. The topography of the creek and creek bank is relatively steep and drops approximately 40 feet from top of the upper most terrace an elevation of approximately 160 feet above mean sea level (amsl) to ordinary flow of the creek at approximately 118 feet amsl. Ordinary high water level for the creek is approximately at 122 feet amsl. An existing culvert outfalls on the creek bank at approximately 145 feet amsl. The creek appears to have a series of riffles and pools in this reach and the substrate consists of gravel to cobble sized rocks. The creek is designated critical habitat for steelhead, a federal listed threatened species.

The Project Area lies within one soil type, Fagan clay loam, 15 to 30 percent slopes. This soil type formed as residuum from weathered sandstone and shale and is described as a well drained soil. Browns Valley Creek lies within the Cole silt loam, 0 to 2 percent slopes soil type and is described as being alluvium derived from volcanic and sedimentary rock and somewhat poorly drained.

## **Project Description**

The proposed project is the repair and improvement of a driveway destroyed by a landslide that provides access to an existing residence (Figures 2a, 2b, and 2c). The repair and improvement of the driveway will include realignment to avoid the landslide area and place the driveway on stable ground. The improved driveway will be straightened and go directly uphill after crossing the bridge which will avoid the landslide area. Because of the uphill gradient, the driveway will need to be excavated in places and filled in places in order to reduce the gradient. Existing underground utilities, which include electric, communication, and water lines, will be relocated within the new driveway.

The stormwater runoff system will be improved as part of the project. Two culverts in the upper driveway section pre-existing the landslide will be removed and the temporary plastic culvert that was installed after the landslide occurred will also be removed. The system will include rock-lined roadside ditches and new 12-inch diameter culvert at the upper end of the driveway. A stormwater detention basin will be installed with a 36-inch diameter overflow riser connected to an 18-inch diameter underground pipe leading downhill to the existing 24-inch diameter culvert that outfalls to the creek. Storm drain inlets will be installed at appropriate locations along the driveway, also connected to the 18-inch pipe to periodically collect runoff and pipe it down slope. The 24-inch culvert will be extended downslope on the creek bank to bring the outfall closer to the creek and allow installation of a flow energy dissipator made of rock. This dissipator will be installed above the ordinary high water elevation of the creek at approximately the 130 feet amsl level and will be approximately 40 feet from the flowline of the creek. Finally, an existing 12-inch diameter culvert and storm drain inlet at the bottom of the driveway will remain, however a flow energy rock dissipator will be installed as part of the driveway improvement because one is not present now.

Grading for cut and fill of the improved driveway and other improvements will result in removal of several trees, although project design avoided existing large diameter trees as much as was practicable along the new driveway alignment. Other trees have already been cut as a result of the landslide investigation process, and the stumps will be removed when the landslide area is regraded. Standing trees to be removed (approximately nine) include coast live oak and California bay and some ornamental trees ranging in size from 4-inches to 22-inches in diameter. Four trees near the top of bank of the creek and within the landslide are leaning because they were dislodged by the slide. One of the trees is dead and the others may be in decline. These trees may need to be cut to reduce risk of the trees falling and pulling soil toward or into the creek or furthering the advancement of the landslide.

## **Special-Status Plant Species**

Figure 3 illustrates the CNDDDB mapped locations of nine special-status plant species occurrences in the vicinity (approximately a three mile radius) of the Project Area. Many of the species are unlikely or have no potential to occur within the Project Area because of one or more of the following reasons:

- The Project Area has been repeatedly and/or intensively altered from a natural state thereby eliminating the seedbank or other vegetative propagule (e.g., bulb), and/or diminishing establishment of the special-status plant(s);
- The Project Area does not contain hydrologic conditions (e.g., perennial stream, tidal marsh) necessary to support the special-status plant(s);
- The Project Area does not contain edaphic (soil) conditions (e.g., serpentine, volcanic) necessary to support the special-status plant(s);
- The Project Area does not contain vegetation conditions (e.g., riparian woodland, chaparral) associated with the special-status plant(s);
- The Project Area does not contain topographic conditions (e.g., montane setting, south-facing slopes) necessary to support the special-status plant(s);
- The Project Area is outside of the documented range (e.g., elevation, longitudinal) necessary to support the special-status plant(s).

Five of the nine species have no potential for being present because they are plants usually found in wetlands (Contra Costa goldfields, delta tule pea, Jepson's lilaeopsis, two-fork clover) or were not observed to be present during the site visit (California black walnut). Table 1 summarizes the remaining four special-status plants having the highest likelihood of being present in the limited Project Area and the probability that they are present or not based on current conditions.

### Special Status Wildlife Species

Figure 4 illustrates the wildlife occurrences in proximity of the Project Area. In addition, steelhead is known to be present in downstream Redwood and Napa Creeks. Browns Valley Creek dries by early spring and is not considered to be occupied by steelhead (Leidy et. al. 2005), but it is considered to be critical habitat for steelhead. Table 1 summarizes special-status species with the potential to be present in the Project Area and their probability evaluation for actual presence.

Table 1. Potential Special-status Plant and Wildlife Species Presence in the Project Area

Species Name and Status	Habitat	Potential to Occur & Recommendations
Franciscan onion ( <i>Allium peninsulare</i> var. <i>franciscanum</i> ) Status: CNPS 1B.2	Dry hillsides, often associated with volcanic or serpentine soil, mixed evergreen forest. Blooms in May-June	Unlikely to be present. Unsuitable soil type, a single occurrence three miles to the southwest, and past disturbance of the Project Area. No further action.
Greene's narrow-leaved daisy ( <i>Erigeron greenei</i> ) Status: CNPS 1B.2	Chaparral, generally on serpentine and above 200 feet amsl elevation. Blooms May to September.	Unlikely to be present. Project Area is not chaparral habitat, has no serpentine, and is below the elevation range. No further action
San Joaquin spearscale ( <i>Extriplex joaquinana</i> ) Status: CNPS 1B.2	Shadscale scrub, valley grassland, alkaline soils. Blooms April to October.	Unlikely to be present. The habitat type of the Project Area is not correct and soils are not alkaline. No further action.
Jepson's leptosiphon ( <i>Leptosiphon jepsonii</i> ) Status: CNPS 1B.2	Chaparral, cismontane woodland/usually volcanic. Elevation ranges from 330 to 1640 feet amsl. Blooms March to May.	Unlikely to be present. The Project Area soil type is not suitable and is below the elevation range of the plant. No further action.
American badger ( <i>Taxidea taxus</i> ) Status: State species of special concern	Grasslands and other open habitat where burrowing small mammals are present for prey base.	Not present. Habitat type in Project Area is not suitable and no evidence of burrows was observed during the site visit. No further action.

Species Name and Status	Habitat	Potential to Occur & Recommendations
<p>San Francisco (saltmarsh) common yellowthroat (<i>Geothlypis trichas sinuosa</i>).            Status: USFWS Bird of Conservation Concern, CDFW Species of Special Concern</p>	<p>Marshes, coastal swales, riparian with thick, continuous cover.</p>	<p>Not present. The habitat along Browns Valley Creek is too open to be suitable for this species. No further action.</p>
<p>Western pond turtle (<i>Actinemys marmorata</i>)            Status: State species of special concern</p>	<p>Streams, ponds, lakes with submerged cover and sunny basking structures and adjacent unshaded areas for nesting. May use creeks for movement corridors.</p>	<p>Unlikely to be present. Forested Project Area and creek are unsuitable habitat. Potential for using creek as movement corridor, but unlikely as suitable aquatic habitat appears to be lacking in the surrounding areas. No further action.</p>
<p>Pallid bat (<i>Antrozous pallidus</i>)            Status: CDFW Species of Special Concern, WBWG High Priority</p>	<p>Rock crevices, tree hollows, mines, caves, and a variety of man-made structures.</p>	<p>Moderate potential to be present. Action to conduct bat survey to confirm presence or absence prior to removal of large trees or remove large trees in non-roosting and non-maternity season (August 15 to October 15).</p>
<p>Foothill yellow-legged frog (<i>Rana boylei</i>)            Status: CESA threatened candidate</p>	<p>Partially shaded freshwater streams and small rivers of woodland, chaparral, and forest.</p>	<p>Unlikely to be present. Closed canopy riparian forest is unsuitable as it provides total shade. Nearest occurrence is three miles to the northwest. No further action.</p>
<p>California giant salamander (<i>Dicamptodon ensatus</i>)            Status: Species of Special Concern.</p>	<p>Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.</p>	<p>Unlikely to be present. The intermittent flow regime (drying by early spring,) of Browns Valley Creek is unsuitable for this species. No further action.</p>
<p>Steelhead (<i>Oncorhynchus mykiss</i>)            Status: Fed. Threatened, State none</p>	<p>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.</p>	<p>Moderate potential to be present in higher flows. Browns Valley Creek is designated critical habitat for steelhead. An intermittent stream with a smaller watershed, its main importance is considered to be its contribution of water to support of steelhead in Redwood and Napa Creeks. Action recommended is to protect water quality using BMPs and conduct Project work involving creek banks after June 1 and end work by October 15.</p>
<p>Bank swallow (<i>Riparia riparia</i>)</p>	<p>In riparian and lowland habitats near rivers, lakes and the ocean. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils.</p>	<p>Not present. Suitable cliff habitat is not present. No further action.</p>

Species Name and Status	Habitat	Potential to Occur & Recommendations
An isopod ( <i>Calasellus californicus</i> ) Status: State special-status invertebrate	A blind isopod found in freshwater habitats, the known collections are from a freshwater well and two springs. This poorly known species has been collected from one locality each in Napa, Lake and Santa Clara counties.	Unlikely to be present. No wells or springs are present and habitat in Browns Valley Creek is unsuitable for this species. No further action.
western bumblebee ( <i>Bombus occidentalis</i> ) Status: State special-status invertebrate	Once common populations from southern British Columbia to central California have been declining. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows).	Unlikely to be present. Lack of ground burrows in the Project Area for bee nesting. No further action.
longfin smelt ( <i>Spirinchus thaleichthys</i> ) Status: FC, ST, SSC	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.	Unlikely to be present. The creek is intermittent and fresh water. Location is approximately 3 miles to estuarine conditions of the Napa River. No further action.
Black-crowned night heron ( <i>Nycticorax nycticorax</i> ) Status: none	Frequent foothills and lowlands, nesting in thick-foliaged trees, dense fresh or brackish emergent wetlands, or dense shrubbery or vines near aquatic feeding areas.	Not present. Habitat is not suitable. Thick-foliaged trees are not present and Project Area is far removed from aquatic feeding areas.

## SUMMARY AND RECOMMENDATIONS

The limited size of the project area (approximately 0.6 acre), which limits the types of habitats that can be present, and the condition of the habitats reduced the types of species that have potential for being present in the Project Area. Upland oak and bay forest and riparian forest along Browns Valley Creek were the two habitats, and both were impacted by the landslide and resulting removal of vegetation for emergency repair last year. The closed canopy of the original intact forest and remaining canopy shades the Project Area and limits the understory vegetation. Other than Browns Valley Creek, which is an intermittent stream and reportedly becomes dry by early spring, is the only aquatic habitat within the surrounding area.

It is unlikely that any special-status species of plants are present in the Project Area. Of the nine plants with known occurrences in the area, five were ruled out because their habitat requirements (e.g., wetlands) were clearly not present or they were not observed (e.g., California black walnut). The remaining four plant species were ruled as unlikely to be present based on site conditions, such as wrong soil type, habitat, or elevation range. No further actions are recommended for special-status plants and no adverse impacts are expected from the Project.

Browns Valley Creek is designated critical habitat for steelhead because it is tributary to and forms Napa Creek at the confluence with Redwood Creek; the latter two waters are both documented to be occupied by steelhead, however Browns Valley Creek is not. The flow in Browns Valley Creek is considered contributory to promote steelhead in system, but it is not enough to support steelhead on its own (Leidy et. al. 2005). While it is possible that steelhead could migrate into

upstream areas of Browns Valley Creek during high flows from Napa and/or Redwood Creeks, the creek usually is dry by early spring. Young steelhead may spend a year in streams before migrating to ocean waters, which makes Browns Valley Creek unsuitable. However, it is recommended that the water quality of Browns Valley Creek be protected in support of steelhead in Napa and Redwood Creeks. Best management practices (BMPs) should be installed and maintained at all times during construction work. As an added precaution, work should be scheduled to begin after June 1 which is after the period when substantial rain typically is received. Construction work should be completed and BMPs installed by October 15 to avoid the winter rainy season.

The storm water system of the improved driveway will also help to protect water quality in Browns Valley Creek. The new detention basin near the upslope end of the driveway will detain water and slow the runoff into the creek. In addition, the detention basin will allow some infiltration of water into the ground and will likely contribute to lengthening base flow period in the creek. The rocked ditches and storm drain inlets along the driveway, and installation of rock energy dissipators at the two culvert outfalls near the bottom of the driveway, will also contribute to reducing erosion and sediment in runoff.

Large trees that may have crevices or holes could potentially provide spaces for bats, and particularly pallid bat which has occurrence in the 3-mile radius area. Removal of large trees could occur between August 15 and October 15 which is the non-maternity and non-roosting period for bats. However, if construction and tree removal needs to begin prior to August 15, then a survey for bats should be conducted in order to determine if they are present or not. If not, then tree removal and construction may begin without restriction.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,



Douglas Spicher  
Principal Biologist

Enclosures: Figures 1-3 and Site Photographs

References:

Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, CA.

Natural Resources Conservation Service. 2018. Web Soil Survey. Napa County Soil Survey, accessed April 2018. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Google Earth. 2017. Aerial photograph.

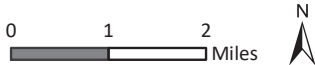




Sources: National Geographic, WRA | Prepared By: smortensen, 4/16/2018

**Figure 1. Study Area Location**

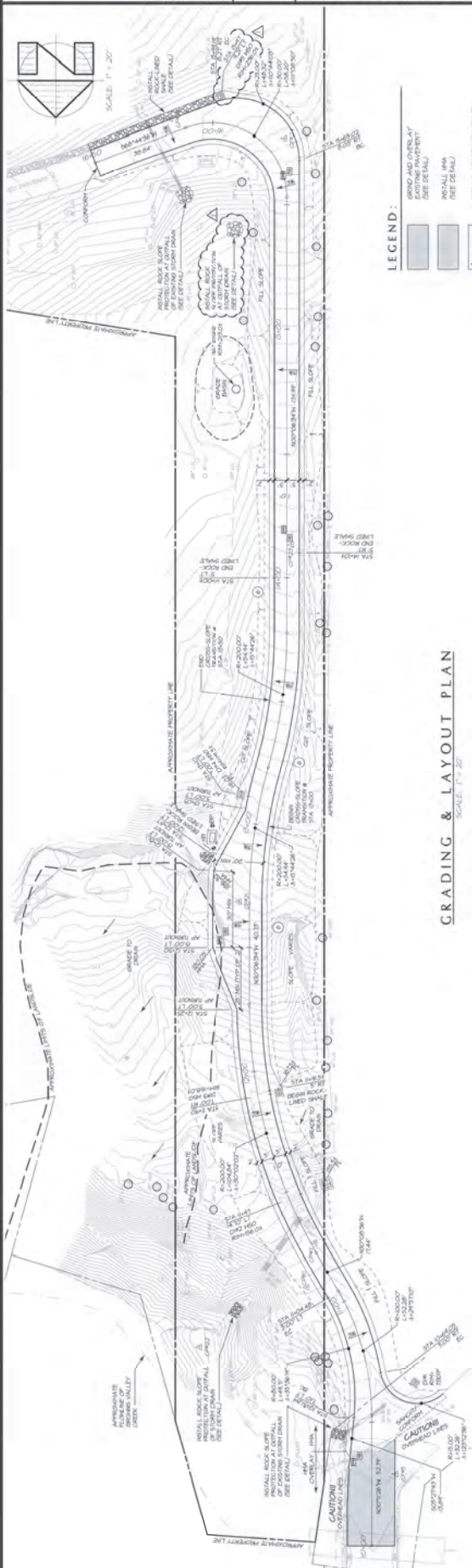
McCormick Lane  
 Napa Driveway Repair Project  
 Napa County, California







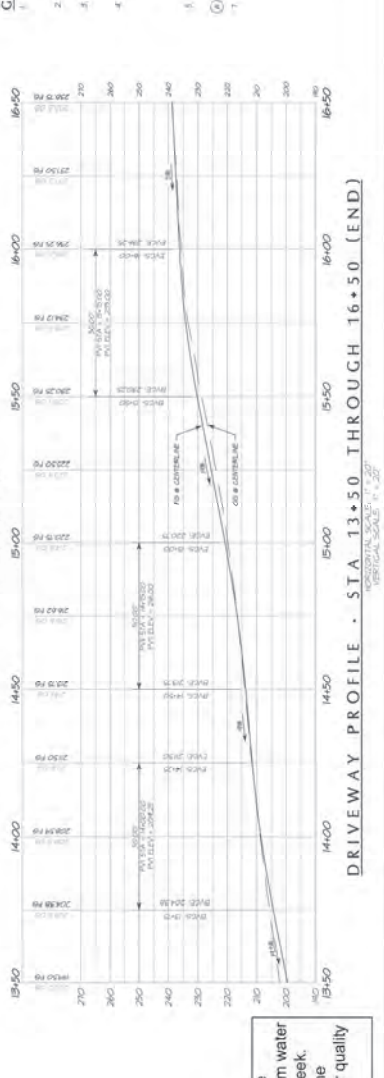
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 DATE: 11/17/17



**GRADING & LAYOUT PLAN**  
 SCALE: 1" = 20'



**DRIVEWAY PROFILE - STA 10+00 THROUGH 13+50**  
 HORIZONTAL SCALE: 1" = 20'



**DRIVEWAY PROFILE - STA 13+50 THROUGH 16+50 (END)**  
 HORIZONTAL SCALE: 1" = 20'

**GRADING NOTES:**

1. REFER TO THE GEOLOGICAL INVESTIGATION REPORT FOR OVER SLOPE INDICATIONS. ALL "FLASHPATH" AND "DRAINAGE" AREAS SHALL BE PROTECTED WITH A 2% SLOPE AND BE APPROVED BY THE ENGINEER IN THE FIELD.
2. ALL TRIMMING AND BRUSH REMOVAL SHALL BE GRADED WITH A 2% SLOPE AND BE APPROVED BY THE ENGINEER IN THE FIELD.
3. ADJUST ALL UTILITY BODY LIPS TO HIGH FINISH GRADE. ALL UTILITY SPOUTS SHOULD BE TO BE RECONSTRUCTED IN ALL PAVED OR CONCRETE AREAS.
4. CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE APPLICATION AND MAINTENANCE OF ALL UTILITY SPOUTS AND CONNECTIONS. CONTRACTOR IS RESPONSIBLE TO MAKE APPROPRIATE ADJUSTS TO PREVENT EROSION AND TO PROTECT ALL EXISTING UTILITIES. ALL UTILITY SPOUTS AND CONNECTIONS SHALL BE APPROVED BY NAPA COUNTY BARTELT ENGINEERING AND THE OWNER. SEE ENGINEERING DETAIL FOR UTILITY SPOUT AND CONNECTION DETAILS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS.

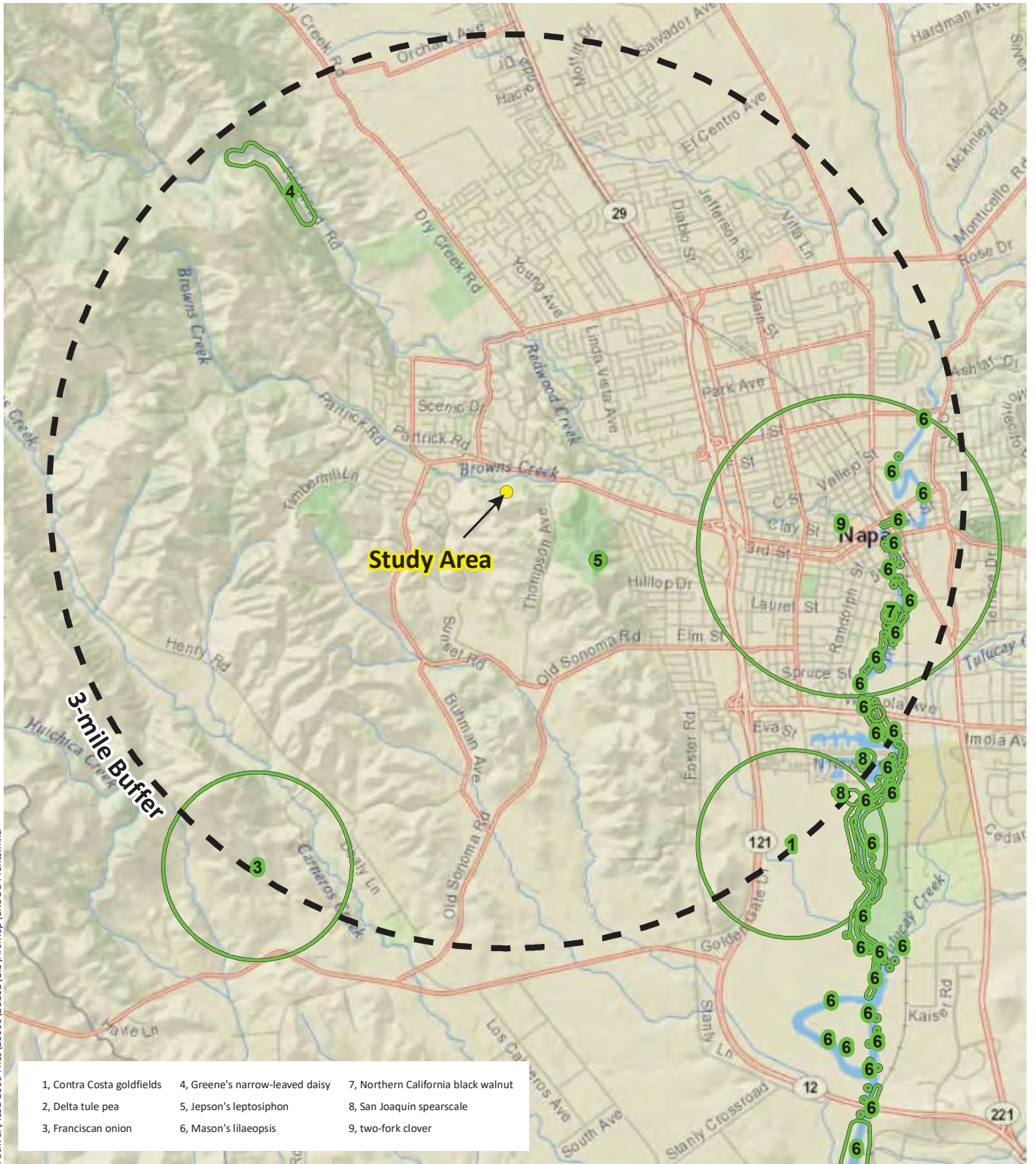


PREPARED UNDER THE SUPERVISION OF  
 PAUL V. BARTELT  
 R.L.C.E. #4002

Figure 2b. Plans showing how the driveway will be repaired and other improvements, such as the storm water collection system and delivery to Browns Valley Creek. The drainage system will detain sudden runoff to the creek, reduce sediment in runoff, and protect water quality in the creek.

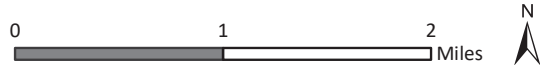




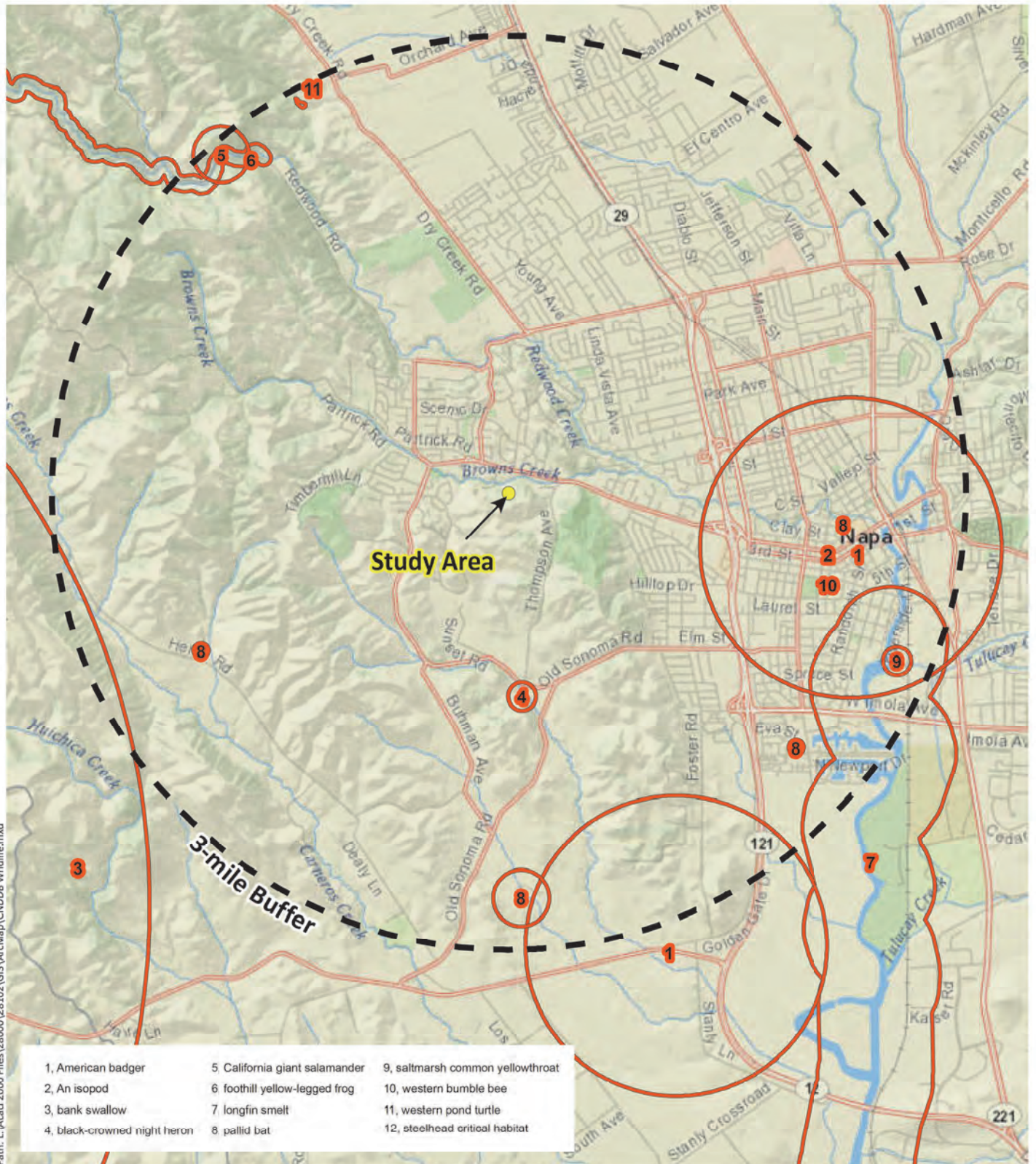


**Figure 3. Special-Status Plant Species Documented within 3-miles of the Study Area**

McCormick Lane  
 Napa Driveway Repair Project  
 Napa County, California



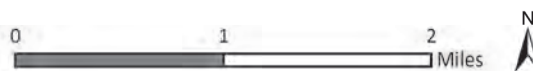




Sources: National Geographic, CNDDDB April 2018, WRA | Prepared By: smortensen, 4/16/2018

**Figure 4. Special-Status Wildlife Species Documented within 3-miles of the Study Area**

McCormick Lane  
Napa Driveway Repair Project  
Napa County, California







Above: View of the existing conditions at the Project Area showing the extent of damage to the existing driveway from the landslide.

Below: Vegetation was cleared on and adjacent to the landslide in order to investigate the extent of the landslide and determine repairs.

Photographs taken April 5, 2018.







Above: The existing 24-inch culvert outfall on the banks of Browns Valley Creek. The culvert will be extended down the bank and a rock energy dissipator will be installed.

Below: A new feature of the storm drain system will be a detention basin installed to the left of the driveway in an existing depression. Detention will slow runoff to the creek and allow ground infiltration extending base flow in the creek.

Photographs taken April 5, 2018.

