
5. CULTURAL RESOURCES.

Prehistoric Context

Archaeological investigations throughout the Central Valley region have resulted in the documentation of numerous prehistoric habitation sites. Early archaeological sites were typically situated near the shoreline, marshes, or along pluvial lake shores. Prehistoric sites have been identified dating back as far as 12,000 years ago in the southeastern Sacramento area (Johnson 1978), which indicates a considerably longer span of prehistoric occupation than what has been generally accepted. This section presents a summary of the broad theories of the prehistory of Central California that were developed over many decades.

Archaeologists now recognize three general patterns of cultural adaptation throughout the Central Valley Region based on artifact assemblages and mortuary practices, and patterns of cultural adaptation, during the span of time between 5000 and 200 B.P. (Before Present). The three primary time periods are the Early Period (5000–2500 B.P.), the Middle Period (2500–1300 B.P.), and the Late Period (1300–200 B.P. or Contact). This cultural framework is a refined version of the Central California Taxonomic System (CCTS) (Beardsley 1954). Fredrickson (1973, 1974, and 1994) defined distinct time-period divisions based on general economic, technological, and mortuary traits. He further introduced three cultural *patterns*, - the Windmill, Berkeley, and Augustine patterns, to the Early, Middle, and Late horizons of the Central California Taxonomic System.

Early Period/Windmill Pattern (5000–2500 B.P.)

The Early Period (5000–2500 B.P.) is divided into the Early, Middle, and Late Windmill, named for the Windmill Pattern first identified in the Sacramento–San Joaquin Delta as the oldest archaeological complex (Lillard et al. 1939). The Windmill Pattern is general comprised of a mixed economy of game procurement and the use of wild plant foods. The archaeological assemblages of this period contain numerous projectile points, including large obsidian concave base and stemmed points and rectangular *Olivella* beads with a wide range of faunal remains (Erlandson and Jones eds. 2002). The Windmill Pattern toolkit includes fishing hooks and spears crafted from fish bone. Plant resources were also used, as indicated by the presence of stone tools such as milling slabs and handstones. The Windmill Pattern reflects a seasonal adaptation in which habitation sites in the valley were occupied during the winter months, and summer camps were inhabited in the foothills (Moratto 2004).

Middle Period/Berkeley Pattern (2500–1300 B.P.)

The Windmill Pattern shifted to a more specialized adaptation called the Berkeley Pattern, which spanned about 2500–1300 B.P. Fredrickson (1974) defined the Berkeley Pattern based on the economic adaptive strategies developed around the extensive and rich resources of the Central Valley. Early representations of the

Berkeley Pattern resemble the Windmill Pattern but shift to larger occupation sites located near water sources with the presence of projectile points and atlatls (Hughes 1994). Berkeley Pattern assemblages generally show a decrease in the presence of milling slabs and handstones and a shift to the mortar-and-pestle technology, indicating an increased dependence on acorns throughout the Central Valley, though recent studies may refute this generally accepted theory. Although gathered resources gained importance during this period, the continued presence of projectile points and atlatls (spear-throwers) in the archaeological record indicates that hunting was still an important activity (Fredrickson 1973).

Late Period/Augustine Pattern (1300 B.P.–Contact)

The Augustine Pattern followed the Berkeley Pattern around 1300 B.P. – Contact. This period is also divided into the Middle/Late Transition (1300–800 B.P.) and Late Period (800 B.P. – Contact). The Augustine Pattern exhibits elaborate ceremonial and social organization, and the development of social stratification. Exchange became well developed, and an even more intensive emphasis was placed on the use of acorns, as evidenced by the presence in the archaeological record of shaped mortars and pestles and numerous hopper mortars. Other notable elements of the artifact assemblage associated with the Augustine Pattern include flanged tubular smoking pipes and clamshell disc beads. The presence of small projectile point types indicates the use of the bow and arrow. Other traits associated with the Augustine Pattern include the introduction of pre-interment burning of offerings in a grave pit during mortuary ritual, increased village sedentism, population growth, and an incipient monetary economy in which beads were used as a standard of exchange (Moratto 2004).

Solano County is thought to have been named after a Native American chief from the Suisun Valley area, although claims have been made that word *solano* may also refer to the Spanish meaning: the east wind (Kyle et al. 1990). Prehistoric Native American sites in Solano County tend to be situated at the base of hills, near ecotones, alluvial flats, and near sources of water confluences, including springs. Archaeological sites in the region range from very large village sites, seasonal habitation sites, and burial sites, to seasonal camp sites. The types of prehistoric artifacts found include scrapers, drills, shell beads, *manos*, *metates*, cores, cobble tools, fire-affected rock, groundstones, flaked stone tool debitage, middens, faunal and floral remains and human remains or burials.

Ethnographic Context

The project area is situated in an area ethnographically recorded as Patwin territory. The Sacramento River Valley is characterized by dense vegetation, with open grasslands to the west of the Sacramento River region and on the eastern slope of the coast range. The Patwin occupied the open grassland on a seasonal basis. The Patwin tribelets were often situated in the hills throughout the numerous intermountain valleys, particularly along drainages. Larger Patwin villages were located along the Sacramento River, within the valleys of the foothills, and along major creeks such as the Putah and Cache (Johnson 1978).

The Patwin practiced subsistence hunting and fishing and plant seed collection as the means of survival. Their housing was comprised of earth-covered, semi-subterranean round structures that have been recorded in the foothill region. The Patwin favored locations that were high spots along streams that flowed into the open valleys, especially in the winter months. In the summer, the Patwin moved away from the main water courses and into the hills or mountains to exploit the natural resources in those areas (Johnson 1978).

Historical Context

By 1800, Spain had taken control of most of the Bay Area and had erected seven missions in the south and west of the Patwin tribal region. The Patwin tribes lived far enough away from the first missions to plan and rebel against the incoming Spaniards, and many of the tribes joined together to resist the encroachment of the colonialists, with numerous battles fought between the Spaniards and the Patwin tribes between 1800 and 1817 before resistance was defeated (Garcia and Associates 2009).

In 1821, Mexico declared independence from Spain, and California became a Mexican Territory in 1822. After California's transition to a Mexican territory and the subsequent secularization of the missions in 1834, representatives of the Mexican government distributed large land grants to various individuals. A total of six land grants were confirmed within Solano County, including Mare Island, Las Putas, Los Putos, Suisun, Tolenas, and Los Ulpinos (Solano County Archives). The project area is located within the original boundaries of the Rancho Tolenas and Rancho Suisun land grants.

The 1848 discovery of gold at Sutter's Mill in Coloma ignited a major population increase in the northern half of California, specifically within the Sacramento River Valley, as immigrants poured into the territory seeking gold or the opportunities it presented. The California Gold Rush also created a shortage of ranch workers who abandoned their jobs to seek their fortunes. This loss of a ranch workforce, along with an enormous increase in Euro-Americans squatting on these lands, would later contribute to the disintegration of the Mexican land grants and eventual division and sale of land grant property (Robinson 1979).

Railroads played an important role in the post-Gold Rush development of the region because they facilitated the transport of agricultural products to market, and goods to local residents. In 1869, the California Pacific Railroad Company constructed a line between Davis (formerly Davisville) and Marysville with a Woodland station which went through Solano County. The rail line expanded and was eventually acquired by Southern Pacific Railroad. By 1875 agriculture remained economically important to the region; however, tufa and basalt quarries began to employ a significant portion of Solano County's population. Before the quarry industry tapered off in the early 1900s, Solano County was instrumental in providing stone for San Francisco's demanding construction industry. In addition, the first state highway constructed between 1912 and 1914 went directly through Solano County. Population in the city of Fairfield increased dramatically during this time as the

majority of agricultural land to the west had previously been purchased (ICRMP 2003). Eventually, over time, modern highways replaced railroads as the dominant form of transportation.

Methods

A records search was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University. The NWIC is a repository of all archaeological site records, previously conducted cultural resources investigations, and historic information concerning cultural resources for 16 San Francisco Bay Area counties, including Solano County. The following sources were consulted in this records search:

- NWIC base maps: USGS 7.5-minute series topographic quadrangles of Cordelia, Fairfield North, Fairfield South, Elmira, Denverton, Dozier, Birds Landing, and Benicia, California.
- Survey reports and archaeological site records were examined to identify recorded archaeological sites and historic-period built environment resources (buildings, structures, and objects) within or immediately adjacent to the project areas.
- The California Department of Parks and Recreation's *California Inventory of Historic Resources* (1976) and the Office of Historic Preservation's *Historic Properties Directory* (2008), which combines cultural resources listed on the California Historical Landmarks, California Points of Historic Interest, and those that are listed in or determined eligible for listing in the NRHP or CRHR.

A pedestrian survey for cultural resources was conducted on October 7, 2008, January 9, 2009, and January 15, 2009 under the supervision of Barb Siskin, M.A. (Principal Investigator). Archaeologists surveyed 10-m transects at MP 1.38 and MP 4.88, in a 100-foot radius surrounding each site. In addition, the survey included several additional sites along Line 210A ILI that are not included in this project at MP 10.93, MP 12.42, MP 8.08, MP 12.84, MP 19.04 and MP 19.47. Letters requesting information about sacred lands that may be located within the project area were sent to the Native American Heritage Commission (NAHC) and seven local organizations and individuals that might have knowledge of the area.

Results

One previously recorded cultural resource is located within 0.50-mile of Line 210A near Cordelia Station. This historic resource, P-48-000549, consists of a portion of the Southern Pacific Railroad. This resource does not lie within any proposed project work sites. Three previously recorded prehistoric sites were identified during the records search, but they are more than 1.0 mile from the work sites and would not be affected by the project; the precise locations of these prehistoric sites are confidential. These prehistoric sites include cultural material such as basalt flakes, midden deposits, and human remains. No previously identified prehistoric resources are situated within any of the work sites.

No cultural resources or materials were identified within the project area during the archaeological survey. Both locations are situated in areas that have been subject to extensive previous disturbances, most likely attributed to the installation of the existing Line 210A ILI and associated mainline valves. The exposed ground surface consisted primarily of fill, gravel, and a disturbed soil matrix.

Geologic/Paleontologic Context

The major topographic features in Solano County are the Vaca Mountains in the northwest portion of the County and the Montezuma Hills in the southeast. The Vaca Mountains consist of uplifted Cretaceous and Tertiary rocks of the Great Valley Sequence. The Montezuma Hills are poorly consolidated sediments from the Pleistocene Montezuma Formation. A large predominantly Quaternary alluvial plain extends throughout the east-central and northeastern parts of the County (EDAW 2008).

The project work areas are mapped as occurring on Pleistocene and Holocene alluvium. Pleistocene alluvial deposits in Solano County are considered highly sensitive for paleontological resources and may contain vertebrate fossils from extinct taxa of the Rancholabrean land mammal age, including bison, mammoths, ground-sloths, saber-toothed cats, and other taxa. Holocene alluvium may contain vertebrate and invertebrate fossils of extant, modern taxa, which are generally not considered to be paleontologically significant (EDAW 2008).

The Pliocene Tehama Formation is mapped as occurring along Creed Road and has the potential to be exposed or to underlay alluvial deposits within project work areas. The Tehama Formation contains significant vertebrate fossils and is considered to have high paleontological sensitivity (EDAW 2008).

The Potrero Hills are a localized topographic high just south of the project area and are composed of Eocene sedimentary rocks. Of these, both the Nortonville shale and the Capay formation contain marine invertebrate fossils and are considered to have high paleontological sensitivity. These formations are not known to be exposed at the project site (EDAW 2008).

Regulatory Context

Federal

Section 106 of the National Historic Preservation Act

Section 106 (36 CFR Part 800) of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of projects under their jurisdiction on properties listed or eligible for listing in the Nation Register of Historic Places (NRHP) (16 USC 470 et seq.). The proposed project is subject to Section 106 of the NHPA because it will require a permit from the US Army Corps of Engineers (USACOE) under Section 404 of the Clean Water Act (CWA). To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. For compliance with Section 106 of the NHPA, the

lead federal agency is required to consult with the State Historic Preservation Officer (SHPO) before granting permits, funding, or other authorization of the undertaking. The Section 106 process entails the six primary steps listed below:

1. Initiate consultation and public involvement.
2. Identify and evaluate historic properties within the APE.
3. Assess effects of the Project on historic properties.
4. Consult with the State Historic Preservation Office (SHPO) regarding adverse effects on historic properties, if applicable to the project, resulting in a memorandum of agreement (MOA).
5. Submittal of the MOA by the agency official (in this case, USACE to the Advisory Council on Historic Preservation) if necessary.
6. Proceed in accordance with the MOA, if applicable to the project.

National Register of Historic Properties

The National Register of Historic Places (NRHP) is a listing of historic properties maintained by the Secretary of the Interior that have been deemed to be worthy of protection. Historic properties include artifacts, records, and remains that are related to and located within such properties. They also can include properties of traditional religious and cultural importance to Indian tribes or Native Hawaiian organizations that meet NRHP criteria. Historic properties eligible for inclusion in the NRHP include both properties formally listed in accordance with regulations of the Secretary of the Interior and all other properties that meet the NRHP criteria. An archaeological site's significance is determined using the NRHP's Criteria for Evaluation at 36 CFR 60.4, which state that a historic property is any district, site, building, structure, or object:

- A) that is associated with events that made a significant contribution to the broad patterns of our history (Criterion A);
- B) that is associated with the lives of persons significant to our past (Criterion B);
- C) that embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or
- D) that has yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

Archaeologists generally evaluate archaeological resources using Criterion D in order to determine their potential to yield information. Criterion D emphasizes the importance of the information encompassed in an archaeological site rather than its inherent value as a surviving example of a particular architectural type or its historical association with an important person or event.

Buildings and structures less than 50 years old do not meet the NRHP criteria unless they are of exceptional importance under Criteria Consideration G as described in the National Park Service Bulletin No. 22, *"How to Evaluate and Nominate Potential National Register Properties that Have Achieved Significance within the Last 50 Years."*

If a cultural resource is determined to be eligible for inclusion in the NRHP, then it is automatically eligible for inclusion in the California Register of Historical Resources. If a resource does not have the level of integrity necessitated by the NRHP, it may still be eligible for the CRHR, which allows for a lower level of integrity.

State

Cultural Resources

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that public projects or projects financed or approved by State agencies must assess the effects of the project on cultural resources, including historical, archaeological, and paleontological resources. The CEQA Statute and Guidelines include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the NRHP, the CRHR, or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the National Register of Historic Places or California Register of Historical Resources.
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey meeting the requirements of Public Resource Code Section 5024.1(g) (Department of Parks and Recreation Form 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines Section 15064.5).

Under Section 21083.2 of CEQA, a unique archaeological resource is an object, artifact, or site that can be clearly shown to meet any of the following:

- it contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- it is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Register of Historical Resources

All resources listed in or formally determined eligible for the NRHP are eligible for the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a state-wide program of similar scope to the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR. A historic resource must be significant at the local, state, or national level under one or more of the following criteria that are defined in the California Code of Regulations Title 14, Chapter 11.5, Section 4850:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The CRHR criteria are similar to NRHP criteria, and are tied to CEQA, as any resource that meets the above criteria is considered a historical resource under CEQA.

Paleontological Resources

Public Resources Code § 5097.5

California Public Resources Code § 5097.5 prohibits excavation or removal of any "vertebrate paleontological site, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Fossil Significance Criteria

The Society of Vertebrate Paleontology (SVP) identifies vertebrate fossils, their taphonomic and associated environmental data, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant (Conformable Impact Mitigation Guidelines Committee 1995). Due to the rarity of fossils and the scientific information they provide, a resource can be considered significant if it meets any one of the following criteria (Scott and Springer 2003):

- The paleontological resource provides data on the evolutionary relationships and developmental trends among organisms, both living and extinct;
- The paleontological resource provides data useful in determining the age(s) of the geologic unit or sedimentary stratum, as well as timing of associated geological events;
- The paleontological resource provides data on a community level;
- The paleontological resource demonstrates unusual or spectacular circumstances in the history of life; and / or
- The paleontological resource is not abundant or found in other geographic locations and may be in danger of being depleted or destroyed by the elements or vandalism.

Significant paleontological resources must be diagnostic, or identifiable, to determine if many of the criterion above are applicable. Proper identification of paleontological resources is often impossible in the field, therefore the recovery, preparation and analysis of paleontological resources is necessary to determine their significance (Scott and Springer 2003). This process must be done by, or under the supervision of, a qualified paleontologist (Conformable Impact Mitigation Guidelines Committee 1995). Microvertebrate fossils are generally not visible to the naked eye in the field and are recovered in the laboratory through processing of bulk samples from paleontologically sensitive geologic units (Conformable Impact Mitigation Guidelines Committee 1995; Scott and Springer 2003).

Regulations Concerning the Discovery of Human Remains

California Public Resources Code §5097.98 (Notification of Native American human remains, descendants; disposition of human remains and associated grave goods) mandates that the lead agency adhere to the following regulations when a project results in the identification or disturbance of Native American human remains:

- a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person

responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendents shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

- b) Whenever the commission is unable to identify a descendent, or the descendent identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendent and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.
- c) Notwithstanding the provisions of Section 5097.9, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section and any action taken to implement an agreement developed pursuant to subdivision (l) of Section 5097.94, shall be exempt from the requirements of the California Environmental Quality Act (Division 13 (commencing with Section 21000)).
- d) Notwithstanding the provisions of Section 30244, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section, and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 (Division 20 (commencing with Section 30000)).

Local

Solano County General Plan

The 2008 Solano County General Plan established the following relevant policies and regulations related to cultural resources:

- RS.P-38: Identify and preserve important prehistoric and historic structures, features, and communities.
- RS.P-39: Tie historic preservation efforts to the County's economic development pursuits, particularly those relating to tourism.
- RS.P-40: Consult with Native American governments to identify and consider Native American cultural places in land use planning.
- RS.I-25: Require cultural resources inventories of all new development projects in areas identified with medium or high potential for archeological or cultural resources. Where a preliminary site survey finds medium to high

potential for substantial archaeological remains, the County shall require a mitigation plan to protect the resource before issuance of permits. Mitigation may include:

- Having a qualified archaeologist present during initial grading or trenching (monitoring);
- Redesign of the project to avoid archaeological resources (this is considered the strongest tool for preserving archaeological resources);
- Capping the site with a layer of fill; and/or
- Excavation and removal of the archaeological resources and curation in an appropriate facility under the direction of a qualified archaeologist.
- Alert applicants for permits within early settlement areas to the potential sensitivity. If significant archaeological resources are discovered during construction or grading activities, such activities shall cease in the immediate area of the find until a qualified archaeologist can determine the significance of the resource and recommend alternative mitigation.

Impacts on cultural resources could result from ground-disturbing activities and/or damage, destruction, or alteration of historic buildings. Ground-disturbing activities include project-related excavation, trenching, or other subsurface disturbance that could damage or destroy buried archaeological resources including prehistoric and historic sites, human burials, or paleontological resources. Mechanisms that would cause damage, destruction, or alteration of historic buildings include project-related demolition, damage, or alteration of historic buildings or their immediate surroundings that could impair the significance of a historic resource or adversely alter those physical characteristics of a historical resource that convey its historical significance.

Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No historical resources were identified within the project area through archival research or the field survey. The project would therefore have no impact on historical resources, and no mitigation is necessary or required.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The likelihood of encountering potentially significant cultural resources within the project area is low. Background research, consultation, and pedestrian surveys did not result in the identification of any cultural resources within the project area. The work sites and surrounding areas are comprised of predominantly fill and have been heavily impacted by the installation of existing valves and grading-related activities. Due to the highly disturbed nature of each of the upgrade sites on the surface and at a depth of previous excavations, the project areas appear to have a low sensitivity for the presence of surface or buried prehistoric deposits, and the level of project-related ground disturbance to previously undisturbed native soils is expected to be extremely limited. However, there is some, probably low, potential for encountering previously unidentified archaeological resources during project-related ground-disturbing activities. Historic-period features that may be present include backfilled privies, wells, and refuse pits; concrete, stone, or wood structural elements or foundations; and concentrations of metal, glass, and ceramic refuse. Prehistoric cultural remains might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, choppers), midden (culturally darkened soil containing heat-affected rock, artifacts, animal bone, or shellfish remains), and/or stone milling equipment, such as mortars and pestles.

Mitigation Measure CULT-1. If concentrations of prehistoric or historic-period materials are encountered during ground-disturbing work at any of the project work sites, all work in the immediate vicinity of the discovery shall be halted until a qualified archaeologist can evaluate the significance of the find. If the find is determined to be significant, PG&E shall determine the appropriate avoidance measures or other appropriate mitigation in consultation with a qualified

archaeologist and the SWRCB. Significant cultural materials shall be curated according to current professional standards.

Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The likelihood of encountering potentially significant paleontological resources within the project area is low. The work sites and surrounding areas are comprised of predominantly fill and have been heavily impacted by the installation of existing valves and grading-related activities. Due to the highly disturbed nature of each of the upgrade locations on the surface and at a depth of previous excavations, the project areas appear to have a low sensitivity for the presence of paleontological resources, and the level of project-related ground disturbance to previously undisturbed native soils is expected to be extremely limited. However, given the high paleontological sensitivity of sediments in the project area, and in particular the extensive paleontologically-sensitive Pleistocene alluvium, there is some, probably low, potential for encountering previously unidentified paleontological resources during project-related ground-disturbing activities.

Mitigation Measure CULT-2. If unanticipated paleontological resources are discovered during ground-disturbing activities at any of the project work sites, excavations in the immediate vicinity of the find shall be temporarily halted until the discovery is examined by a qualified paleontologist per Society of Vertebrate Paleontology standards (SVP 1995). If the find is determined to be significant, PG&E shall determine the appropriate avoidance measures or other appropriate mitigation in consultation with a qualified paleontologist and the SWRCB. Significant paleontological finds shall be curated according to current professional standards.

Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

There is no indication that the work sites have been used for burial purposes in the recent or distant past; it is therefore unlikely that human remains would be encountered during construction. However, archaeological materials, historical and prehistoric, may be present within the project area and the possibility of

encountering human remains cannot be discounted. Section 7050.5 of the California Health and Safety Code, states that it is a misdemeanor to knowingly disturb a human grave.

Mitigation Measure CULT-3. If human remains are encountered, work in the immediate vicinity shall stop and the County Coroner shall be notified immediately. A qualified archaeologist shall be contacted immediately to evaluate the discovery. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission then has 48 hours to identify a Most Likely Descendent.

6. GEOLOGY AND SOILS. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The Project sites are located in a seismically active area, and several active or potentially active faults occur in the Project vicinity. Active faults in the vicinity of the Project sites include the Vaca-Kirby Hills Fault, the Great Valley Fault, the Cordelia Fault, and the Green Valley Fault. (Solano County General Plan, 2008)

None of the active faults located in the Project area crosses any of the investigation sites. The potential for fault rupture under a portion of the pipeline could exist through a nearby fault, an unknown fault, or through sympathetic movement resulting from an event on another fault in the region, but the likelihood is considered to be low. All proposed valve replacements and facility upgrades would be reviewed by a registered professional engineer to assure compliance with seismic design requirements. Potential impacts from fault rupture or ground shaking would be less than significant.

The proposed Project does not include any inhabited buildings or similar structures and would not expose people or structures to seismic or landslide risks. Because the Project does not include any above-ground structures, no impacts would occur from seismic-related ground failure or liquefaction. The pipeline and associated valves would be located underground well below any areas of potential landslide.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Construction of the Project involves minimal ground disturbance. Excavation would be restricted to designated temporary staging areas that have been previously disturbed. Preventative BMPs would be implemented to protect soil and water quality during construction. BMPs would be described in the Project Stormwater Pollution Protection Plan (SWPPP), and may include silt fences, straw wattles, or temporary berms, stockpiling soils at least 100 feet from drainages, and installing hydroseed and straw mulch after construction is completed. As a result, Project construction is not expected to be a significant source of erosion of exposed soils due to wind or water.

Soils throughout the region are derived from marine and non-marine sediments deposited on the alluvial plain of the lower Sacramento River. Project area include the Altamont–San Ysidro–San Benito Complex, Antioch–San Ysidro Complex, Capay Silty Clay Loam, Clear Lake Clay, Diablo–Ayar Clays, Rincon Clay Loam, San Ysidro Sandy Loam, Solano Loam, and Solano–Pescadero Complex. The Altamont and Diablo clays that occur throughout the Project region have a medium to high water capacity and, as such, are potentially expansive. However, because the Project does not include any above-ground structures, no impacts would occur from landslides, lateral spreading, subsidence, liquefaction, collapse, or expansive soils.

The Project does not include or require septic tanks or other wastewater disposal systems. Construction workers would use contractor-supplied portable toilets, the wastewater from which will be taken off-site to a wastewater treatment facility for processing.

7. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The construction activities associated with this Project do not pose a hazardous materials risk, as they generally would not involve the emission or handling of hazardous materials or waste. The only handling of potentially hazardous materials would occur with the refueling and maintenance of construction equipment. An existing school is located within less than one-quarter mile of the site. However, refueling and maintenance activities would not significantly impact any of the school's inhabitants, as these activities would be done at the beginning or end of a workday when equipment is located in the staging area, and where any accidental spills or releases would be easily contained and addressed through implementation of standard construction Best Management Practices. Operation of the Project would not require the transport, use, or disposal of hazardous materials. The replacement of the valves and pipeline would result in greater overall safety compared to current conditions.

The proposed Project is not located on a hazardous materials site pursuant to Government Code Section 65962.5.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

One of the proposed investigation sites (MP 4.88) is located within 2 miles of the Travis Air Force Base. None of the sites are not located within 2 miles of any public or public use airport. The project would not include the construction of buildings where people would live or work.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Lane closures would not be necessary during construction. Therefore, emergency access would not be affected by the Project. As a routine construction measure, emergency access and evacuation procedures would be developed and implemented as part of the on-site health and safety plan. This impact would be less than significant.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The investigation sites situated at MP 1.38 and MP 4.88 each contain areas of open grassland area that have the potential to experience wildland fires. During construction, standard measures would be implemented to minimize the potential for construction activities to cause a wildland fire, including mowing vegetation as needed along access routes, designating smoking areas, and maintaining fire extinguishers or similar on the construction site. This impact would be less than significant with the aforementioned standard mitigation measures incorporated. Please also refer to Checklist Item 13(a)(i) below.

8. HYDROLOGY AND WATER QUALITY.

Climate

Solano County has a Mediterranean climate characterized by warm, dry summers and cold, moist winters. The majority of annual precipitation in the County occurs as rain during the wet season which extends from October to April. The rainfall distribution in the County is affected significantly by topography, with concentrated rainfall associated with the Vaca Mountains occurring near the County's western border and decreasing levels of precipitation to the east. The average annual precipitation for the County as a whole is 20 inches (West Yost 1999).

Surface Water Resources

The proposed project is entirely within Solano County and lies within two major drainage provinces, the Sacramento River/Delta Drainage Province and the San Francisco Bay Drainage Province. The project area is composed of three distinct work sites that lie within three different watersheds: the Calhoun watershed, within the Sacramento River/Delta Drainage Province, and the Denverton and Marsh #1 watersheds, within the San Francisco Bay Drainage Province (SWCA, 2007). Surface water resources in Solano County include creeks, drainages, sloughs, and other wetlands, as well as major water bodies including the Sacramento-San Joaquin Delta, and Suisun and San Pablo Bay. Most of the County's water needs are supplied by Putah Creek and Lake Berryessa through the Solano Project, a Bureau of Reclamation water storage project. Solano County also includes Suisun Marsh, the largest contiguous brackish marsh remaining on the west coast of North America (EDAW, 2008).

The proposed project consists of three distinct work sites, all of which have surface water features within or in the immediate vicinity of the work site. MP 1.38 is a 0.232 acre site located immediately south of Creed Road, approximately 9 miles east of Suisun City (Garcia and Associates, 2009). Soils on this work site consist entirely of Antioch-San Ysidro complex, which is listed as a hydric soil. The work site is surrounded by California annual grassland, with meandering seasonal swales and high-quality seasonal wetlands. A single shallow seasonal wetland occurs partially within this work site. Approximately 0.037 acres of this seasonal wetland would be permanently filled during the proposed expanded easement at this work site.

MP 4.88 is a 0.23-acre site located immediately north of Creed Road, approximately five miles east of Suisun City. Soils on this work site consist entirely of Millsap-Los Osos complex, which is not listed as a hydric soil; however, hardpan is present at a depth of 6 inches. The work site is surrounded by California annual grassland, with meandering seasonal swales and high-quality seasonal wetlands. No other wetlands occur within the MP 4.88 work site; however, two shallow wetlands of 0.011 and 0.080 acres respectively, for a total of 0.091 acres, occur within the immediate vicinity of the work site. Construction activities are expected to occur outside of these wetland footprints; however, the project could indirectly impact these features by affecting water quality through increased erosion and sedimentation (Garcia and Associates, 2009).

Groundwater Resources

Groundwater basins within Solano County include the Napa-Sonoma Lowlands subbasin within the Napa-Sonoma Valley basin, the Suisun-Fairfield Valley basin, and the Solano and Yolo Valley subbasins within the Sacramento Valley Basin (EDAW, 2008). The largest groundwater basin is the Solano subbasin, located in the northeastern portion of the County; groundwater in this basin is generally of good quality, although concentrations of certain contaminants, including Total Dissolved Solids (TDS), boron, arsenic, and manganese are at or near the appropriate Maximum Contaminant Level (MCL) in certain areas. The Suisun-Fairfield Valley basin is the second largest groundwater basin in the County but is not used in a significant capacity because of low yields and poor water quality (EDAW, 2008).

Groundwater was previously used extensively in Solano County for both irrigation and municipal use; the resulting groundwater overdraft was a factor in the development of the Solano Project, the federal dam project that created Lake Berryessa. The County's groundwater levels have since rebounded and are generally stable. The Cities of Rio Vista, Dixon, and Vacaville still get all or some of their water supply from groundwater (EDAW 2008).

Regulatory Context

Federal

The Clean Water Act (CWA) is the major federal legislation relating to water quality. Implementation of the CWA is managed by the EPA; however, other agencies have primary regulatory responsibility for sections of the Act.

Section 401 of the CWA requires a project that may discharge a pollutant into waters of the United States to obtain certification that the project will not violate water quality impacts. In California, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have the primary responsibility for administering state and federal regulations related to water quality, including Section 401 certification.

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES), which requires any discharge of pollutants into waters of the

United States to be in compliance with a NPDES permit. In California, storm water discharges associated with construction activity are covered by a statewide General Permit. This General Permit requires that a project with more than one acre of ground-disturbing activity:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) specifying Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.
- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.
- Perform inspection of all BMPs.

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP), which subsidizes flood insurance to communities that limit development in floodplains. As part of this program FEMA maps areas within an 100-year floodplain, i.e. areas with a greater than 1% annual probability of flooding.

State

The Porter-Cologne Water Quality Act provides the basis for water quality regulation in California. The Act requires the nine RWQCBs to adopt water quality control plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The SWRCB and the RWQCBs have the authority under the Act to regulate waste discharge to surface waters and land, and also provide certification required by Section 401 of the CWA as described above.

Executive Order W-59-93, signed by Governor Pete Wilson, established a policy of no overall net loss and long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California. The 1993 California Wetlands Conservation Policy established a framework and strategy for fulfilling the objectives of the Executive Order (CWCP, 1993).

Under Sections 1600-1607 of the California Fish and Game Code, CDFG regulates activities that would alter the bed, channel, or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. CDFG is also authorized to develop mitigation measures and to enter into a streambed alteration agreement with applicants that propose a project that would adversely affect a river or stream, including intermittent and ephemeral streams.

CEQA Guidelines Section 15206 specifies that a project shall be deemed to have a significant impact if it would substantially affect sensitive wildlife habitats, including but not limited to riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by CFGC Section 903.

Local

Solano County lies within two major drainage basins and the project area is within the jurisdiction of both the San Francisco RWQCB and the Central Valley RWQCB. Water Quality Control Plans have been prepared for each region that define beneficial uses, qualitative and quantitative water quality objectives, and implementation and monitoring programs (EDAW, 2008).

Solano County Water Agency (SCWA) is responsible for delivering water to water service agencies from the federal Solano Project and the North Bay Aqueduct. SCWA is also responsible for flood control and for monitoring efforts to mitigate stormwater runoff (EDAW 2008, Solano County 2008). SCWA's Integrated Regional Water Management Plan recommended strategies to address these and other issues related to water supply and water quality.

The Resources Chapter of the 2008 Solano County General Plan contains several policies related to hydrology and water quality:

- RS.P-65: Require the protection of natural water courses.
- RS.P-66: Together with the Solano County Water Agency, monitor and manage the county's groundwater supplies.
- RS.P-67: Encourage new groundwater recharge opportunities.
- RS.P-68: Protect existing open spaces, natural habitat, floodplains, and wetland areas that serve as groundwater recharge areas.
- RS.P-69: Preserve and maintain watershed areas characterized by slope instability, undevelopable steep slopes, high soil erosion potential, and extreme fire hazards in agricultural use. Watershed areas lacking water and public services should also be kept in agricultural use.
- RS.P-70: Protect land surrounding valuable water sources, evaluate watersheds, and preserve open space lands to protect and improve groundwater quality, reduce polluted surface runoff, and minimize erosion.
- RS.P-71: Ensure that land-use activities and development occur in a manner that minimizes the impact of earth disturbance, erosion, and surface runoff pollutants on water quality.
- RS.P-72: Preserve riparian vegetation along county waterways to maintain water quality.
- RS.P-73: Use watershed planning approaches to resolve water quality problems. Use a comprehensive stormwater management program to limit the quantity and increase the water quality of runoff flowing to the county's streams and rivers.
- RS.P-75: Require and provide incentives for site plan elements (such as permeable pavement, swales, and filter strips) that limit runoff and increase infiltration and groundwater recharge.

- RS.I-71: Require proposed projects located within the Putah Creek and Ulatis Creek watersheds to minimize project-related stormwater runoff and pollution. Stormwater runoff and pollution loads resulting after development of projects shall not exceed predevelopment conditions.

The Solano County Grading and Erosion Control Ordinance (Chapter 31 of the County Code) regulates construction and maintenance activities that involve ground disturbance to protect downstream waterways and wetlands by setting standards to control soil erosion, sedimentation, increased rates of water runoff, and related environmental damage.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PG&E will submit an application for water quality certification for the project pursuant to Section 401 of the Clean Water Act. The proposed project's impact to water quality will be regulated and any additional conditions required by the SWRCB will be incorporated into the project's 401 Certification and associated Waste Discharge Requirements.

Potential water pollutants associated with the project would be generated during the construction phase and could include soil sediment and petroleum-based fuels and lubricants. The project involves ground-disturbing activities that could cause soil erosion and release of excess sediment into water courses, as follows:

- At MP 1.38, a six-man crew will remove existing fencing and dig a trench approximately 125 ft long by 20 ft wide by 8 ft deep to expose the pipe. Following valve and launcher equipment installation and line testing, the trench will be backfilled and recontoured to pre-existing conditions.
- At MP 4.88, a six-man crew will excavate a hole approximately 40 ft long by 25 ft wide by 9 ft deep to expose the pipe. Following installation of the new valve, the hole will be backfilled and recontoured to pre-existing conditions. All proposed ground disturbance at this location will be temporary and will be conducted in the dry season.

Excess sediment in water courses can alter and degrade aquatic resources and habitats. If construction equipment or workers inadvertently release pollutants such as hydraulic fluid or petroleum, these materials could be entrained by storm water and discharged into surface waters, degrading water quality. Potential pollutant sources would be present during the construction phase of the project only. Water quality impacts are not anticipated to be an issue following project completion

because the project will not create a new permanent source of pollutants. All excavated areas will be restored to pre-existing conditions.

The potential for adverse effects to water quality will be avoided by implementing construction Best Management Practices (BMPs) outlined in the California Stormwater Quality Association's Construction Handbook (CASQA, 2003). These BMPs are standard in the construction industry and are commonly used to reduce water quality degradation. PG&E's standard construction practice is to incorporate stormwater pollution prevention and erosion control BMPs into all projects that involve ground-disturbing activities to minimize any wind- or water-related erosion. Protective measures will include:

1. No discharge of pollutants from vehicle and equipment cleaning are allowed into storm drains or water courses.
2. Vehicle and equipment fueling and maintenance operations must be located at least 50 ft away from seasonal wetlands and other aquatic habitat.
3. Dust control will be implemented, including the use of water trucks to control dust in disturbed areas.
4. Disturbed work areas will be restored to pre-project conditions, and reseeded as appropriate.

These BMPs will reduce the project's water quality impacts to a less-than-significant level, and no additional mitigation measures are required.

Would the project:				
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project is not expected to deplete groundwater supplies. Excavations and trenching will be required for project activities including upgrading valves at MP 1.38 and MP 4.88. It is possible that in areas where the water table is shallow, some groundwater seepage could occur requiring dewatering. Excavation water would be discharged to open ground on site, in accordance with standard BMPs as outlined in the California Stormwater Quality Association's Construction Handbook (CASQA,

2003). The dewatering process would be temporary, yielding only a small volume of groundwater, and therefore would not significantly impact groundwater supply.

The project is not expected to interfere substantially with groundwater recharge. No new impervious surfaces are proposed for the project. PG&E is proposing to expand the existing Creed Station by acquiring the adjacent 50 ft by 90 ft parcel to the west. This expansion area will be graveled, which is not expected to interfere with groundwater percolation.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project will not permanently alter the drainage pattern of the work sites or area.. Topsoil layers will be stockpiled and salvaged. Upon completion of work, a crew would backfill the excavations with native soil layers and restore the excavated area to pre-existing contours. Therefore, the temporary alteration of the drainage pattern of the site will not result in any increase in erosion or siltation or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. No impact is anticipated, and no mitigation measures are required.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The project will not create an increased volume of runoff water. Additional extent of hardened surfaces at MP 1.38 do not exceed thresholds for impervious surface increases.

All areas of ground disturbance will be revegetated following construction. Temporary impacts to water quality will be avoided by implementation of BMPs during construction as outlined in (a), above. Additionally, the project will be constructed in the dry season (June 1 – October 15). Therefore, the project will not provide a substantial additional source of polluted runoff. With incorporation of these measures and the off-site compensation provided (see Mitigation Measure Bio 6b above), the project will result in less than significant impact to water quality.

At the time of excavation within the temporarily impacted wetland at MP 1.38, the top six to twelve inches of soil within the wetland footprint will be salvaged and set aside. Once the upgrade and repair work is complete, the wetland topsoil will be reapplied to the excavation in the same soil horizon and compacted to pre-existing conditions. A qualified wetlands scientist will be present during excavation and backfill of soils at the MP 1.38 site.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project consists of pre-inspection improvements of an existing natural gas line and does not include new housing. The only permanent new above-ground structure

is a fence at MP 1.38, which would not impede or redirect flood flows. The project will not affect any dams. The project site is inland and not in an area subject to seiche, tsunami, or mudflow.

9. LAND USE AND PLANNING: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The Project does not include construction of any above-ground structures or roadways that would divide an established community.

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Public utilities are not subject to local zoning and land use controls; nevertheless, the Project would not conflict with any local land use plan, policy, or regulation.

The following table lists the Solano County land use designation assigned to each by the Solano County General Plan. The County General Plan is the guide for both land development and conservation in the unincorporated portions of the county. The County's General Plan Land Use Diagram depicts land use designations both for unincorporated areas of the County and for lands in incorporated cities situated within the County.

Name	County/City	Land Use Designation
MLV 4.88	Solano/County	Agriculture
MP 1.38	Solano/County	Agriculture

The Project does not propose to change any of these land use designations, nor would it conflict with allowable uses under these designations.